

Research on Capitalization of R&D Investment of H Company

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Abstract: In order to maintain lasting competitiveness, pharmaceutical enterprises continue to increase innovative drug development efforts, resulting in rapid growth of R&D expenditure. According to Chinese accounting standards, enterprises have a certain flexibility in accounting for research and development investment. Taking H Company as the case object, this paper finds that: first of all, declining profit and continuously rising R&D investment may be the main reason why H Company's R&D investment changes from full cost to partial capitalization. Second, if the R&D expenditure in 2022 is adjusted using the previous accounting method of full expense, it will lead to changes in profits, information comparability and tax costs after the implementation of the capitalization policy of partial R&D expenditure. Due to the strong subjectivity of the accounting treatment of pharmaceutical enterprises' R&D investment, this paper provides two levels of suggestions for enterprises and regulatory authorities, aiming at solving the problems faced by enterprises in the capitalization of R&D investment, and to provide reference for solving the problem.

Keywords: Capitalization of R&D investment, Research and development intensity, Earnings management.

1. Introduction

The pharmaceutical industry has a large R&D investment and high intensity, and the pharmaceutical R&D process has a long cycle and complex process. Therefore, in practical operations, enterprises may not be able to accurately distinguish the timing of expensed and capitalized stages, and earnings management based on performance may lead to distorted accounting information quality [1]. Capitalization of R&D investment can reduce a company's current financial expenses and improve profit margins, but it also affects the balance sheet and income statement of the company. Therefore, there is widespread controversy in the academic community regarding the capitalization of research and development investment. Chen Zhijun and Jin Xiaojuan et al. (2012) argue that although the new accounting standards can divide R&D investment into two parts: expensed and capitalized, enterprises lack accuracy in the actual operation process and are difficult to quantify in detail, which has a negative impact on the performance evaluation of enterprises and the decision-making of report users [3]. However, Wang Haijun and Kong Yusheng (2015) used a double difference model to empirically test and found that capitalization of R&D investment can significantly enhance the value correlation of financial information of high-tech enterprises [4]. Wu Qing (2021) believes that fully investing in research and development may reduce the value of financial statement information. Most of these studies focus on empirical or theoretical analysis. Therefore, this article selects H Company, which has a large and high R&D investment, and has adopted two accounting policies of fully expensed and partially capitalized R&D investment in the past two years, as the case study object. It studies the reasons and impacts of R&D investment capitalization, and puts forward relevant suggestions to provide reference for companies and regulatory authorities with R&D investment capitalization issues.

2. H Company Case Introduction

2.1. Introduction to Company H

After years of development, H Company has established a large-scale, professional, and comprehensive R&D team with over 5000 employees. In the field of various disease treatment, the company's products have a certain level of competitiveness. In order to meet the demand for physical discovery and development of new drugs in different disease fields, the company has established research and development centers in the United States, Europe, Shanghai, Lianyungang, and Chengdu to cope with the fierce external competitive environment.

2.2. Overview of capitalization of R&D investment by Company H

According to H Company's annual financial reports from 2007 to 2020, it can be found that since the Ministry of Finance issued the new Enterprise Accounting Standards in 2006, H Company has consistently implemented an accounting policy of fully expensed R&D investment, treating R&D investment as current expenses and not capitalizing R&D investment. It is not recognized as an asset in the financial statements. But in November 2021, H Company issued a notice on changes in accounting estimates, stating that it would evaluate the progress of research and development projects and capitalize them if conditions were met. In the past, the treatment of fully expensed R&D investment was based on the principle of prudence, which included all expenses of internal R&D projects in the current profit and loss when incurred.

3. Analysis of the Capitalization Motivation of R&D Investment in Company H

3.1. Profit deterioration in the context of centralized procurement and medical insurance negotiations

Since 2018, the National Medical Insurance Administration, together with relevant departments, has promoted the reform of bulk procurement of drugs and medical consumables.

Currently, the reform of centralized bulk procurement has entered a normal state. In the "14th Five Year Plan for National Medical Security" issued by the General Office of the State Council, it is emphasized to continue to promote the reform of centralized drug procurement and medical insurance negotiations, accelerate the formation of a unified and open drug centralized procurement market nationwide, and vigorously reduce the burden of medication on the public. H Company selected 22 varieties in its previous centralized procurement, with an average decrease of 74.5%.

Table 1. Selected products of Company H

batch	No.3	No.5	No.7
Selected variety	6	8	5
Sales revenue in 2020	1.9 billion	4.4 billion	undisclosed
Sales revenue in 2021	855 million	2.87 billion	1.9 billion
Sales revenue in 2022	undisclosed	610 million	980 million
Year-on-year decrease	55%	79%	48%

In addition, H Company's main products, Esketamine and Erika, have participated in national medical insurance negotiations, with price reductions of 68% and 85%. After the implementation of medical insurance negotiation prices for multiple innovative drugs, the average selling price decreased by 33%. The dual impact of the centralized procurement and price reduction of generic drugs and the participation of innovative drugs in medical insurance negotiations has brought significant pressure to the company's profits.

Affected by centralized drug procurement and medical insurance negotiations, H Company's operating revenue and net profit have both decreased since 2021. The growth rate of operating revenue in 2021 was negative for the first time in 20 years since its listing, and its profitability is rapidly deteriorating. In this context, H Company capitalizes its huge R&D investment, which can significantly improve the current year's book profit, smooth the slope of performance decline, and convey more positive information to the capital market.

Table 2. Changes in H Company's Profitability from 2018 to 2022

Year	2018	2019	2020	2021	2022
Net profit margin	23.32%	22.87%	22.75%	17.31%	17.93%
Year-on-year growth rate of net profit	26.39%	31.05%	18.78%	-28.41%	-13.77%
ROE	23.60%	24.02%	22.51%	13.96%	10.89%

3.2. During the transformation process, R&D investment has hit new highs year after year

As the first tier enterprise in the Chinese pharmaceutical industry, under the guidance of the "technological innovation" strategy in recent years, H Company attaches great importance to research and development innovation, and has invested a large amount of funds in drug research and development and personnel allocation. As of the end of 2022, the company's clinical research and development team has managed over 260 ongoing or planned clinical trials, including more than 60 key registered trials. Clinical collaborative research centers are located throughout the country, with over 1500 departments and clinical resources covering 400 institutions nationwide.

According to the summary of H Company's annual report, the R&D intensity (calculation formula: R&D investment/total operating revenue) from 2018 to 2022 were 12.55%, 15.04%, 17.99%, 25.52%, and 36.43%, respectively. The total R&D investment reached 6.346 billion yuan by 2022, and both R&D intensity and total R&D investment have reached new highs since the company went public for consecutive years, showing a very stable and rapid upward trend. H Company's strong investment in research and development provides strong support for the company's long-

term development, but it also greatly affects the current profit.

Under the background of rapid decline of net profit and rapid growth of R&D investment, if Company H continues to use the accounting method of 0 capitalization ratio in the past, such a large scale of R&D investment will have a huge impact on performance.

3.3. Partial capitalization is conducive to a fair reflection of the company's asset situation

In recent years, H Company's research and development activities have indeed resulted in many drug research and development achievements, patented technology achievements, etc. During the five years from 2018 to 2022, the number of approved patent technology achievements generated by enterprises has been growing rapidly each year, and these patents are closely related to the increasing R&D investment year by year. According to China's enterprise accounting standards, patent achievements can be recognized as a symbol of the development stage. If H company is fully expensed, it will result in the generation of off balance sheet assets. Therefore, choosing to capitalize research and development investment may be more in line with the current situation where H Company wants to improve its on balance sheet profit margin and ensure that the enterprise value is not excessively underestimated.

Table 3. Number of patents granted by Company H from 2018 to 2022

Year	Number of approved patents
2018	65
2019	91
2020	167
2021	229
2022	287

4. The Impact of H Company's R&D Investment Capitalization

4.1. Changes in profits

The most direct impact of H Company's decision to capitalize some research and development investment is to reduce current expenses, thereby increasing current profits. Due to H Company's large annual R&D investment, in enterprises with high R&D intensity, if R&D expenditure is excessively capitalized, it will lead to a significant decrease in current expenses, thereby increasing current profits. For example, in 2022, R&D investment was 6.346 billion, with a net profit of 3.906 billion, and R&D investment reached 1.62 times the net profit. Therefore, the impact of R&D investment capitalization on H Company's profits is relatively significant. In the case of information asymmetry between report users and the company, capitalization of R&D investment can give report users a different understanding of the company's R&D capabilities and expected future profits compared to the information conveyed by full R&D expenditure, resulting in different judgments of the company's operating status.

Table 4. Comparison of intangible assets in the same industry of Company H

Project	Company H	Shuanghe	Fosun
intangible assets (Billion)	4.42	15.12	102.76
total assets (Billion)	392.66	144.83	933.06
Ratio of intangible assets to total assets	1.13%	10.44%	11.01%

4.3. Changes in tax costs

When companies choose to capitalize or expense their R&D investment, they often consider tax costs, and different accounting estimation choices may have different impacts on the company's tax burden. Compared to the accounting policy of partially capitalizing R&D investment, if H company can expense R&D expenses, it can enjoy the tax benefits of additional deductions at the time of occurrence, while capitalization of R&D expenses is the tax benefits of additional deductions in installments. Therefore, the expense of R&D expenditure can reduce the income tax payable by Company H, allowing the enterprise to enjoy tax benefits earlier and thereby increasing the present value of tax benefits. H company has a large R&D investment and high intensity, which means that the tax benefits enjoyed after transferring from full expense to partial capitalization will decrease accordingly. The company tends to report low profits in order to reduce the current income tax payable by the enterprise. Therefore, Company H may be more inclined to choose the accounting policy of R&D expenditure expense, in order to obtain more tax incentives.

4.2. Changes in information comparability

H Company's comparable companies in the same industry, such as China Resources Shuanghe and Fosun Pharmaceutical, adopt accounting policies that partially capitalize R&D investment. Therefore, for H Company, adopting accounting treatment that partially capitalizes R&D investment can improve information comparability with companies in the same industry and reduce comparative costs for report users.

For example, in 2021, the proportion of intangible assets in H company's total assets was only 1.13%, far lower than the 10.44% of comparable companies in the same industry, China Resources Shuanghe, and 11.01% of Fosun Pharmaceuticals. However, in fact, H company's research and development achievements and other related rankings in 2021 were ahead of these two companies. This is precisely because H company had fully expensed its research and development investment before November 2021, resulting in H company's patent achievements forming off balance sheet assets, There is a lack of comparative basis between report data and data from other companies. Although H Company disclosed its research results in the notes, only the quantity and name of the research results were disclosed, and the value information of the research results was not disclosed. Moreover, for information users, the cost of obtaining annotation information is significantly higher than the cost of obtaining report data. To conduct comprehensive and accurate analysis, it is inevitable to increase comparative costs. If report users only rely on report data for analysis, the results obtained may be misleading for decision-making.

5. Recommendation

5.1. Strengthen internal management of enterprises

For the capitalization of R&D investment, although there are benefits such as making accounting information more truthful and reliable, making the accounting treatment of intangible assets between different companies more comparable, and helping enterprises not underestimate their assets excessively, it should be noted that enterprises may affect their profit level by adjusting the capitalization ratio, thereby affecting the profitability presented in the financial statements. Therefore, Company H should establish a sound internal management system, strengthen the standardization of capitalization operations for R&D investment and supervision of expert evaluation, ensure compliance with relevant enterprise accounting standards and internal regulations of the company, and ensure the comparability and accuracy of financial statement information.

In order to better manage R&D expenses in a detailed manner, Company H should include but not be limited to disclosing in detail in the notes to the financial statements the basis for experts to confirm the capitalization time point, the amount of capitalized R&D investment, amortization period,

amortization method, and other information. At the same time, appropriate reference should be made to industry practices to ensure reasonable classification and management.

5.2. Reasonably control the proportion of R&D investment capitalization

The capitalization of R&D investment will convert R&D expenses into assets, which will be recorded in the asset column of the company's balance sheet and recorded in the company's income statement year by year based on depreciation or amortization methods. This approach may make the profit and net asset level of the enterprise look better in the short term, thus improving the market value and credibility of the enterprise, but it actually underestimates the period cost, and the profit and net asset level is falsely high.

In addition, capitalization of R&D investment may also lead to the management of enterprises choosing to invest in R&D assets rather than actual business activities when making decisions, resulting in unstable long-term development and lack of competitiveness of the enterprise. Therefore, the capitalization of R&D investment needs to be treated with caution when applied. Company H should fully consider its actual operating conditions and the average capitalization level of comparable companies in the industry, ensure a reasonable capitalization ratio, avoid damaging the financial health and sustainable development of the enterprise, and comply with relevant financial reporting standards and norms to ensure a fair reflection of the financial statements on the operating status of the enterprise.

5.3. Enterprises should attach importance to financial personnel training

The financial personnel of the enterprise bear important responsibilities for the collection and classification of expenses. For pharmaceutical companies that value research and development, their research and development investment itself is large. For example, H Company invested nearly 6.4 billion in research and development in 2022, with a research and development intensity of up to 36%. Firstly, due to the wide variety and large amount of drugs, the process of preparing reports itself is prone to problems. Secondly, due to the complexity of the drug research and development process, the research and development year may last for more than ten years, involving multiple end of period transfers, increasing the complexity. Finally, it is necessary to have a thorough understanding of the drug research and development process in terms of amount collection, allocation of amounts for each stage, and amortization. The criteria also do not clearly specify the dividing points for capitalization and expense determination of R&D expenditures, so accounting personnel and management have great subjective judgment and autonomy in defining capitalization. As an ordinary financial personnel, it may not be possible to have a professional understanding of drugs. Therefore, it is not only necessary to provide vocational training for financial personnel, but also to provide basic knowledge training on drug research and development.

Company H can adopt internal learning and external training methods. Financial personnel and management should actively learn policies and regulations related to research and development expenses, regularly hire external experts in medicine and finance for training, and ensure that financial personnel have a certain foundation in the drug research and development process within the enterprise. The

financial personnel of pharmaceutical enterprises should smoothly divide the content of each stage, reasonably arrange the expenses involved in research and development at different stages, and reasonably amortize the intangible assets formed. In order to avoid financial problems caused by insufficient knowledge of drug research and development among financial personnel of pharmaceutical enterprises as much as possible.

5.4. Regulatory authorities need to strengthen the standardization of information disclosure management for research and development investment

Regulatory authorities should guide or urge pharmaceutical companies with significant R&D investment and achievements to adopt conditional R&D expenditure capitalization policies. It is not advisable to fully expense or over capitalize R&D expenditure, especially to avoid over capitalizing R&D investment without considering the actual situation of R&D. At the same time, for situations where the division of research and development stages is clearly unreasonable, enterprises are required to redefine and provide detailed basis in financial statements without exposing trade secrets, in order to accept public supervision and prevent excessive capitalization of research and development investment through information asymmetry.

6. Conclusion

This article selects H Company, which has used both full expense and partial capitalization accounting methods for R&D investment in recent years, as the case study object. From both internal and external perspectives, it studies the reasons for the conversion of R&D investment from full expense to partial capitalization. It can be summarized as follows: external factors are the decline in profits caused by medical insurance negotiations and drug procurement; Due to the fact that the enterprise is in the process of innovation and transformation, research and development investment continues to rise. Under the combined effect of internal and external factors, if the accounting policy of fully expensed in the past is continued, it will result in a large number of off balance sheet assets and further deteriorate the book profitability.

In terms of economic consequences, Company H has chosen to capitalize a portion of its research and development investment. On the one hand, it can reduce financial expenses for the current year, smooth out the fluctuations in recent years' performance decline, and convey more positive information to the capital market and investors. On the other hand, it can improve information comparability and reduce the comparative cost of using financial statements. However, it is not possible to enjoy the tax benefits of additional deductions at the time of expense occurrence. The capitalized portion needs to enjoy the tax benefits of additional deductions in installments after being converted into intangible assets, delaying the enjoyment of tax benefits.

In summary, for the capitalization of R&D investment, there are mainly advantages such as increasing current profits and making accounting information more comparable. However, there is also a risk of enterprise manipulating profits and delaying tax incentives. In enterprises with high research and development intensity, excessive capitalization of research and development expenditures can lead to a

significant decrease in current expenses, thereby increasing current profits. Overestimation of assets and profits may contradict the principles of reliability and comparability of accounting information, and the long-term amortization of a large number of intangible assets will continue to affect the company's future profit performance for a long period of time. To address the above issues, this article suggests that enterprises can start by strengthening internal management, reasonably controlling the proportion of R&D investment capitalization, and strengthening financial personnel training. In addition, regulatory authorities should also strengthen supervision and management of enterprise R&D information disclosure.

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