

# Applications and Challenges of Corporate Financial Strategies in Asset Pricing

Xinyu Hou

School of Management, Jinan University, Guangzhou, Guangdong, China

**Abstract.** With the development of information technology and the gradual rise of data assets, the importance of data in enterprise value creation is becoming increasingly prominent. However, there are still many theoretical and practical challenges in the pricing process of data assets. This paper aims to explore the specific application of corporate financial strategies in asset pricing and the challenges they face. By analyzing the main pricing methods such as cost method, income method, and market method, this article elucidates their applicability and limitations in practical operation. The article also delves into the challenges of instability in data asset pricing and insufficient reference objects, and proposes corresponding optimization directions.

**Keywords:** Corporate Financial Strategies; Asset Pricing; Asset Management.

## 1. Introduction

With the digital transformation of the global economy, the value of data assets has become increasingly prominent and has become an important part of the competitiveness of enterprises. In this context, the traditional corporate finance strategy has been gradually given new meaning, especially in the field of asset pricing. Corporate finance strategies not only focus on the management and appreciation of traditional assets, but also begin to explore how to effectively evaluate and price data assets in the data-driven era. However, due to the particularity of data assets, such as their non-substantiality and uncertainty of value, the traditional asset pricing methods are facing many challenges. Therefore, it is of great significance to explore the application of corporate finance strategy in data asset pricing.

## 2. Overview of Corporate Financial Strategy

Corporate finance, or micro-finance, is the real field of finance abroad. With the maturity of the concept of value investment, high-end investors are paying more and more attention to the value growth model of enterprises, and the company's financial strategy is more profoundly affecting the competitiveness and value growth model of enterprises. It can be predicted that domestic corporate finance research will usher in a new atmosphere, which will promote the improvement of China's micro-financial environment and the optimization of enterprise value growth model. There are two basic theories of asset pricing.

**Market microstructure theory.** Market microstructure theory has been well developed since the late 1960s. Demsetz's paper "Transaction Costs" has built a theoretical basis for the market microstructure theory. After the practice and revision of the financial market, in 1995, O. Hara's book "The Theory of Market Microstructure" was published. The model framework of market microstructure theory is formally established. In its framework, the market microstructure theory intends to reduce the severe market and expectations in CAPM and EMH models, and effectively integrate the transaction cost theory, game theory and information economics, so that the market microstructure theory can analyze the process and results of asset transactions, and realize the process analysis of how the microstructure of a specific market influences and affects the financial market.

**Behavioral Asset Pricing Theory.** Behavioral asset pricing theory began to question and criticize the standard finance at the beginning of its establishment, and has been enriched and developed with this process. The core argument between behavioral asset pricing theory and the mainstream economics is the efficient market hypothesis. It began to be accepted by the economic circles after

the 1980s. Behavioral asset pricing theory denies the judgment of the efficient market hypothesis on the optimal estimation of market prices, and believes that in this process, the reasonable securities market prices based on the assumption of rational people can only reflect the fundamentals of the financial market. Behavioral asset pricing theory pays more attention to the role of human value in investment choice and asset pricing.

### 3. Application Method of Corporate Finance Strategy in Asset Pricing

#### 3.1 Cost Method

The cost method measures the value of data assets by summing up the costs in the process of data production. Specifically, the cost method reasonably evaluates the actual value of the specific assets and liabilities of the target enterprise on the basis of the balance sheet published by the target enterprise, and determines the final value of the evaluation object through simple summation. It is based on the rational person hypothesis in financial management, which assumes that the purchasing behavior of all buyers is completely guided by the size of the benefits obtained by the scheme, and that the market information is completely open and transparent, and there is no information isolation phenomenon. At this time, the price paid by a rational person for an asset or the cost of assuming a liability will not exceed the price of replacing a product with the same use and substitution as the commodity. When the basic concept of the cost method is applied to the data asset pricing process, the formula for data asset pricing is as follows:

Assessed data asset value = replacement cost-functional depreciation-economic depreciation

In the basic formula of cost method, the replacement cost of data assets includes the construction cost, maintenance cost and management cost of data center. Among them, the construction cost includes the cost of building materials, equipment costs and labor costs, etc. Turner & Town send, a well-known international construction consulting service enterprise, found that the unit construction cost of different countries and enterprises is different. The management cost of the data center refers to the expenditure incurred by the management personnel in the process of data production and maintenance. Because data assets have the basic characteristics of non-entity, their functional depreciation mainly refers to the depreciation caused by the backwardness of enterprise data processing technology and the inadequate level of data management personnel, which results in the failure of data assets to play their real value. Finally, economic depreciation mainly refers to the depreciation caused by the rising price of new data assets and the ineffective application of existing data assets in the process of outsourcing data assets. The cost method is more suitable for the situation where the buyer's difference is small and the market price is open.

#### 3.2 Income Method

The income approach is to evaluate the capitalization result of the expected income of the target enterprise, that is, to select a reasonable discount rate and discount the amount of its income to the value after a specific date as the asset value of the target enterprise. Its theoretical basis is that the value of the asset does not depend on the current income, but is determined by its future income. On this basis, considering the development strategy of the upper level of the enterprise, the existing asset structure of the middle level, and the real operating conditions of the lower level, the parameters are adjusted and the excess income that the data assets as operating assets can bring directly or indirectly to the enterprise in the future is finally calculated, and the final value of the data assets is calculated by referring to the weighted average capital cost rate of other enterprises in the same industry as the discount rate. The income method has the advantages of low difficulty in data acquisition and strong operability, and is a widely used method at present. When the basic concept of the income approach is applied to the data asset pricing process, the formula for data asset pricing is as follows:

$$V = \sum_{n=1}^{\infty} \frac{R_t}{i}$$

Where:  $V$  Indicating the value of the appraised data asset;  $R_t$  Indicates the first  $t$  Net income of annual data assets;  $t$  Represents the earning life of the data asset;  $i$  Represents the discount rate. When an enterprise adopts the business model of selling assets directly and its expected income can be reliably predicted, it can use the income method as its method to evaluate the value of its assets, such as Li Chunqiu and others, who use the income method to evaluate the value of the assets of the "unicorn" enterprise based on the business plan. The application of data assets enables enterprises to obtain basic income while realizing excess income, which includes cleaning, preprocessing, classification, statistics, processing and deep mining of existing data, so that the transaction price of data is higher than its fair value, and the difference can be regarded as the value generated by data assets. The price is the embodiment of the value of the commodity, and the calculated additional income can be used as the value of the data asset. The application of the income approach still has some limitations, which can be manifested in the following points: First, when predicting the future income of data assets, it is often affected by subjective factors. For example, the determination of the discount rate needs to be based on non-quantifiable factors such as the future development trend of the enterprise and the current operating conditions of the enterprise. Therefore, the degree of deviation between the final prediction results and the real situation needs to be further measured. Secondly, the value ownership of data assets is not clear, and the issue of ownership involves the legal basis of various countries. Although the United States, Britain and other developed countries have clearly promulgated the relevant legal documents of data assets, China has not yet issued clear information on the ownership of data assets, and there are still some disputes about the control of data assets. Third, the expected revenue of data assets is closely related to future revenue expectations and application scenarios, and it is difficult to accurately estimate and predict. In view of the above limitations, it is necessary to improve the excess earnings method by introducing the real option method to further adjust the calculation results of the value of data assets.

### 3.3 Market Method

The market method continues to use the basic idea of the principle of substitution, that is, from the macro perspective to the micro level, to find the asset transactions with the same characteristics as far as possible and take them as the reference object. At the macro level, it should be the basic condition to be in the same market; at the level, it should be the basic requirement to have similar industry characteristics; At the micro level, the basic goal should be the similarity of asset types and values. When the above three conditions are met, the transaction cases of assets under open market conditions are collected, and then the objects that can be referred to are selected. When the basic concept of the market approach is applied to the data asset pricing process, the formula for data asset pricing is as follows:

Value of appraised data asset = value of reference object X data quality correction index X data capacity correction index X data application management correction index X other correction index

There are two prerequisites for the application of the market approach. The primary requirement is that there is an active market for the asset in the current market. However, although there is a data asset trading center in China, the formulation of the transaction price is not clear, the transaction type of the data asset is limited, the transaction scale is small, and the transaction frequency is low, which cannot meet the basic requirements of the active market. Secondly, the types of asset transactions can be clearly classified, and the types of transactions can be clearly classified into a certain category in the process of transactions, but in fact, the individual differences of data assets are large, and there are some differences in the way of carrying, the way of realizing value, the degree of future mining, and the existing analysis results. If the calculation result of the data asset value under this method is corrected, the workload is too large and the operability is low. In addition, there are a lot of correction index in the formula, this also reveals the accuracy of the market method depends largely on the accuracy of the correction index. At present for general real estate and commodity data correction has standard coefficient table, If according to the purchase date, Occupation location, Traffic degree, Property type and other dimensions of different degrees of correction. On the contrary, Data assets,

although there are four value dimensions of utility value, cost value, strategic value and transaction value proposed by Fu Shan, and six value dimensions of intrinsic value, business value, performance value, cost value, market value and economic value discussed by Data Asset Evaluation Center, there is no unified definition of the correction index for specific dimensions.

## **4. Challenges of Corporate Finance Strategy in Asset Pricing**

### **4.1 The Calculation Results of Pricing Are Unstable**

The pricing of data assets of Internet enterprises depends on the value of data assets themselves, which usually has two forms of expression, namely book value and intrinsic value, among which book value is greatly influenced by market environment factors, and when the market fluctuates, the value of data assets displayed to the outside world will also fluctuate greatly. This feature is similar to the volatility of option value. The intrinsic value is determined by the specific amount of income brought by data assets for related businesses, which is affected by the advanced technology level, data management level, data analysis ability and other factors of data asset users. To sum up, there is a certain volatility in the pricing results of data assets, which is difficult to be estimated simply by historical data.

### **4.2 The Reference Objects of Pricing are Not Abundant**

The number of Internet enterprises is not small, but with the Internet as the medium, the number of enterprises engaged in different business content is also large, that is, the Internet business involves a wide range of main business, when the main business is different, its business model and operation model will also be quite different, the comparability of similar assets will be reduced, and the credibility of pricing results will also be reduced. In addition, data asset information belongs to potential value information. When the information is fully exposed to the market, its value will be seriously lost. Therefore, the confidentiality of data assets owned by enterprises is often in place, but from another point of view, it also increases the difficulty of finding comparable objects for data asset pricing.

## **5. Conclusion**

This article explores the application of corporate financial strategies in asset pricing and the challenges they face. Through the analysis of common pricing methods such as cost method, income method, and market method, it can be seen that each method has its unique advantages and limitations in different contexts. Especially in the emerging field of data assets, despite facing issues such as unstable pricing and insufficient reference objects, financial strategies still provide important theoretical support and practical frameworks for asset pricing. In the future, we can further focus on how to overcome existing challenges through technological means and market mechanisms, and provide more scientific basis for asset management and value creation of enterprises.

## **References**

- [1] Giglio S, Kelly B, Xiu D: Factor models, machine learning, and asset pricing, *Annual Review of Financial Economics*, Vol. 14 (2021) No.1: 337-368.
- [2] Li M, Zhu C: The Impact of Accidental Shocks on Asset Prices from the Perspective of Financial Industry Opening, *Theoretical Economics Letters*, Vol. 14 (2024) No.4: 1455-1477.
- [3] Zerbib O D: A sustainable capital asset pricing model (S-CAPM): Evidence from environmental integration and sin stock exclusion, *Review of Finance*, Vol. 26 (2022) No.6: 1345-1388.
- [4] Evans R B, Sun Y: Models or stars: The role of asset pricing models and heuristics in investor risk adjustment, *The Review of Financial Studies*, Vol. 34 (2021) No.1: 67-107.

- [5] Chu Y, Hirshleifer D, Ma L: The causal effect of limits to arbitrage on asset pricing anomalies, The Journal of Finance, Vol. 75 (2020) No.5: 2631-2672.