

# Theoretical Research on Asset Pricing and Corporate Finance Based on Behavioral Factors

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**Abstract:** This paper mainly discusses the asset pricing and corporate finance theory and empirical research based on behavioral factors. First, this paper introduces the development process and current situation of asset pricing and corporate finance theory, as well as the role of behavioral factors. Second, it introduces the definition, classification and measurement methods of behavioral factors, and the influence mechanism of behavioral factors on asset pricing and corporate financial decision-making. Asset pricing and corporate financial model construction and testing connected with behavioral factors are also involved. Then, it introduces the asset pricing and corporate financial modeling and application based on behavioral factors, including asset pricing model, corporate investment decision model, corporate financing decision model and corporate governance model. Finally, the main contents of this study are summarized, and the future development of asset pricing and corporate finance theory and empirical research based on behavioral factors is pointed out.

## 1. Introduction

Asset pricing and corporate finance are one of the main contents of finance, and they are related to financial theory and empirical research. They can be divided into basic and non-basic asset pricing, comprising risk factors and behavioral factors. To effectively allocate resources, asset pricing and corporate finance entrust market mechanisms to trade and price assets. Since the 1960s, asset pricing and corporate finance have become an essential part of finance, and return on investment has become an evaluation metric. Unlike the traditional capital asset pricing model, asset pricing based on behavioral factors emphasizes investors' psychology, preferences, and cognition. Therefore, we put forward the issue of asset pricing and corporate finance based on behavioral factors, and behavioral economics provides a new theoretical basis and tools.

Behavioral factors are derived from human-centered behavioral economics, which contains a deep understanding of investor behavior and affects asset prices and trading volume. From the theoretical structure perspective, behavioral factors explain market anomalies, asset pricing, and corporate financial modernization are realized by combining with risk factors. However, it only happens in Western developed countries. China has practiced a unique path of the socialist market economy. It creates a miracle of the company's economic development, embodies its wisdom and solutions, and will rewrite the world economic landscape and challenge the international financial order. Therefore, discussing asset pricing and corporate finance based on behavioral factors must have a broad vision and pattern. In the new era, we put forward the theoretical and empirical research propositions of asset pricing and corporate finance based on behavioral factors.

Based on the above background, this paper proposes an asset pricing and corporate finance model based on behavioral factors. It aims to comprehensively consider the influencing factors such as investor psychology, preferences, and cognition and solve the market abnormalities problem that conventional models cannot explain through theoretical analysis and verification. The main contents include the following four aspects: The first part introduces the research background, purpose, significance, methods, and innovations. The second part includes the relevant literature review and the theoretical framework used in this paper. The third part introduces the asset pricing model,

corporate investment decision model, corporate financing decision model, and corporate governance model based on behavioral factors. It completes the diagnostic and robustness test of the measurement model. The fourth part summarizes the conclusions of this paper and provides recommendations and directions for future research. This paper effectively deals with the risks such as information asymmetry, irrational trading, and the herding effect, which have theoretical and practical significance.

## **2. Empirical Research Background of Asset Pricing and Corporate Financial theory Based on Behavioral Factors**

### **2.1 The Development and Current Situation of Asset Pricing and Corporate Finance Theory**

Asset pricing and corporate finance is a concept developed with financial economics. It shows the concept of market efficiency, highlights the rational orientation of finance, and reflects the financial innovation strategies of Western developed countries since the 1960s. However, it isn't easy to get a consistent answer when we try to use some risk factors or behavioral factors to construct the nature of asset pricing and corporate finance [1].

### **2.2 Behavioral Factors and Asset Pricing and Corporate Finance Theory**

Behavioral factors are essential criteria for asset pricing and corporate finance and are a comprehensive expression of investor psychology, preferences, and cognition. Behavioral economics and behavioral finance discuss definitions of behavioral factors from the perspective of psychology and sociology. Some scholars believe behavioral factors are the deviation of market efficiency or the supplement of risk factors. To some extent, behavioral factors have a more empirical basis and belong to applied science to explain market anomalies. The research history of behavioral factors can be traced back to the nineteenth century. The main activities include observing, summarizing, classifying, and explaining investor behavior. In addition, the concepts and methods of behavioral factors have been closely related to financial innovation since the 1980s. Introducing behavioral factors, asset pricing, and corporate finance have become important responsibilities close to reality. The main contribution of asset pricing and corporate finance theory based on behavioral factors in the new era is constructing a series of models that can capture investors' psychological, preference, and cognitive influence. Therefore, behavioral factors initially focused on measuring investor behavior based on the attributes of market anomalies [2].

## **3. Research Foundation and Key Technologies of Asset Pricing and Corporate Finance Based on Behavioral Factors**

### **3.1 Definition, Classification, and Measurement Methods of Behavioral Factors**

Behavioral factors emphasize the relationship between investor psychology, preference, and cognition compared to risk factors. Behavioral factors are subjective, dynamic, and diverse. Some scholars have questioned that behavioral factors may not be directly related to asset prices and trading volume, but most scholars advocate that behavioral factors can rationally evaluate market anomalies. Kahneman et al. proposed a classical behavioral economics model of the investor utility function with three elements. Since then, the model has become a standard tool for behavioral factors and developed the behavioral finance concept [3]. These scholars believe that behavioral factors are measurable and irrational. When market efficiency is not high, and arbitrage opportunities are limited, behavioral factors will affect asset prices and trading volume. Therefore, behavioral factors are the result of market friction. Some scholars have also summarized behavioral factors into two models: the behavioral financial model based on psychological bias and the behavioral financial model based on restrictive arbitrage [4]. The former focuses on analyzing the impact of investors' psychological bias on decision-making. In contrast, the latter focuses on the restrictions of market friction on arbitrageurs' behavior, that is, irrational trading. Although people have experienced some practical difficulties, from the perspective of explaining market anomalies,

it can provide more insights. The concept of asset pricing and corporate finance based on behavioral factors has gradually become the consensus of economic research and practice.

### **3.2 The Influence Mechanism of Behavioral Factors on Asset Pricing and Corporate Financial Decision-making**

The essence of the concept of behavioral factors focuses on market anomalies. Behavioral factors are the application of behavioral economics thinking in finance. It has entered the research field as a new alternative model to overcome the shortcomings of traditional asset pricing and corporate financial models. The basic idea of this framework is: first, asset pricing and corporate finance should ensure that investor utility maximization sets professional standards for investor behavior. Second, capture behavioral factors through psychological bias and restrictive arbitrage techniques. Third, econometric models and experimental methods are used to measure behavioral factors. Asset pricing and corporate financial framework based on behavioral factors reconstruct the market efficiency hypothesis and enhance people's attention to investor psychology, preferences, and cognition. In addition, it is closer to the real market and has effectiveness, stability, competitiveness, and innovation.

### **3.3 Asset Pricing and Corporate Finance Model Construction and Testing Methods Based on Behavioral Factors**

Asset pricing and corporate financial models based on behavioral factors are the primary theoretical tools, focusing on the impact of investor psychology, preferences, and cognition on asset prices and trading volume. Econometric models and experimental methods directly reflect the empirical situation of market anomalies and investor behavior. Some constitutive elements of asset pricing and corporate financial model development based on behavioral factors are gradually taking shape, and behavioral and various risk factors are gradually being taken seriously. However, from the domestic and foreign literature, some practices of asset pricing and corporate financial models based on behavioral factors are in the descriptive stage, contrary to the logical framework and generation mechanism of asset pricing and corporate financial framework based on behavioral factors. Therefore, the problem of model construction and verification method is derived. The function of the behavioral asset pricing model is expressed as follows.

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f) + \lambda_i E(B_i) \quad (1)$$

In the formula,  $E(R_i)$  is the expected rate of return on asset  $i$ ,  $R_f$  is the risk-free rate,  $\beta_i$  represents the systematic risk coefficient of asset  $i$  relative to the market portfolio,  $E(R_m)$  represents the expected rate of return of the market portfolio.  $\lambda_i$  is the sensitivity coefficient of asset  $i$  relative to behavioral factor  $B_i$ , and  $E(B_i)$  is the expected rate of return of behavioral factor  $B_i$ . Behavioral factors can be variables that capture psychological factors such as investor cognitive bias, overconfidence, and horizon theory, such as additional issuance repurchase factors, post-earnings announcement drift factors, etc.

## **4. Asset Pricing and Corporate Finance Modeling and Application Based on Behavioral Factors**

### **4.1 The Establishment and Empirical Analysis of Asset Pricing Model Based on Behavioral Factors**

From the perspective of asset pricing, the asset pricing model based on behavioral factors is the essential link between asset pricing and corporate financial framework based on behavioral factors, and it is the core embodiment of investor behavior affecting asset prices [5]. Therefore, the asset pricing model based on behavioral factors takes market anomalies as the primary generation logic. Behavioral factors are the main variables of the asset pricing model based on behavioral factors and also the broad subject of investor behavior. At this stage, asset pricing models based on behavioral factors strengthen investor behavior control from the perspectives of psychological bias, restrictive

arbitrage, and market friction.

There are three primary forms. The first is to introduce psychological bias: it is clear that investors maximize utility among risk, return, and time. The second is to introduce restrictive arbitrage: by formulating standards for arbitrage costs, arbitrage risks, and arbitrage capabilities, and disclosing arbitrage opportunities to the market, standardized control of irrational transactions can be achieved. The third is introducing internal process reengineering of market friction [6]. In recent years, information asymmetry, the herding effect, and noise trading have increased the influence of investor behavior and market anomalies utilizing market friction. However, compared with the traditional asset pricing model, the robustness of the current asset pricing model based on behavioral factors need to be further improved. The asset pricing model architecture based on behavioral factors is shown in Figure 1.

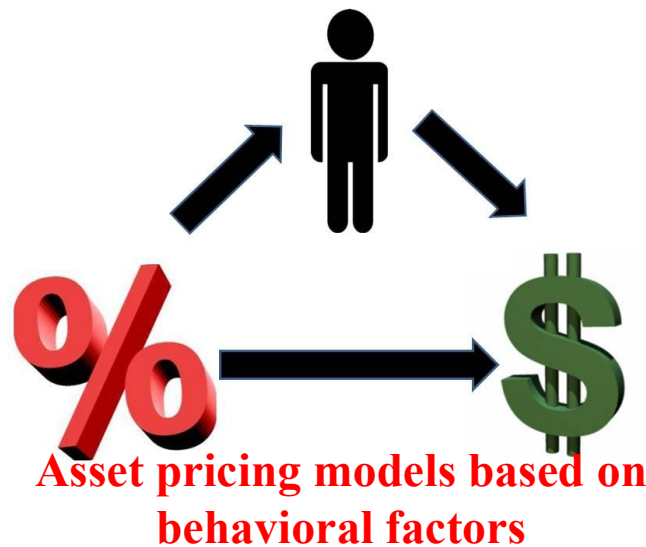


Figure 1 The asset pricing model architecture based on behavioral factors

#### **4.2 The Establishment and Empirical Analysis of Corporate Investment Decision Model Based on Behavioral Factors**

The fundamental difference between the corporate investment decision-making model based on behavioral factors and the traditional one is its irrational attribute. The traditional corporate investment decision model and net present value criterion aim at efficiency, and the development of corporate investment reflect scale and efficiency. In the framework of corporate investment decision-making based on behavioral factors, accurate identification, evaluation, management, and control of behavioral factors are the core value and highest criterion for corporate investment development. The diversity of current behavioral factors and the difference in corporate investment decisions lead to the diversification of corporate investment. Market mechanisms can help enterprises improve their investment efficiency, but they are incomplete and lack effective monitoring mechanisms. Therefore, the short board of corporate investment decision-making based on behavioral factors has affected the efficiency and stability of corporate investment.

#### **4.3 The Establishment and Empirical Analysis of Corporate Financing Decision Model Based on Behavioral Factors**

From the perspective of corporate financing, the traditional corporate financing decision model cannot accurately provide the financing information investors need. Rate of return evaluation is the main form of evaluation by investors for corporate financing. However, the company lacks relevant information and disclosure mechanisms, and the root cause may be information asymmetry. In the corporate financing decision-making framework based on behavioral factors, behavioral factors are often described as irrational, and the impact on corporate financing directly reflects market anomalies. However, market anomalies are price and yield, and information is scarce. Usually,

behavioral factors are challenging to obtain or measure. Information asymmetry and market friction lead to barriers in corporate financing decision-making models based on behavioral factors [7]. Specifically, this paper selects variables such as the shareholding ratio of management representing the internal behavioral factors of the company, the market sentiment index representing the external behavioral factors of the company, and the leverage ratio representing the financial factors of the company, and constructs the following multiple regression model.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \epsilon_i \quad (2)$$

In the formula,  $Y_i$  represents the financing decision index of the  $i$ -th company,  $X_{1i}$  represents the management shareholding ratio of the  $i$ -th company,  $X_{2i}$  represents the market sentiment index of the  $i$ -th company, and  $X_{3i}$  represents the leverage ratio of the  $i$ -th company.  $\beta_0$  is a constant term,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are regression coefficients, and  $\epsilon_i$  is a random error term.

#### **4.4 The Establishment and Empirical Analysis of Corporate Governance Model Based on Behavioral Factors**

From the perspective of corporate governance, information asymmetry has restricted the efficiency of corporate governance. Since the 20th century, modern corporate governance, which integrates supervision, incentive, and restraint, has reshaped the corporate governance structure by reforming equity division. However, traditional agency's drawbacks still restrict corporate governance's effect [8]. Due to the impact of conflicts of interest and behavioral factors, corporate governance mechanisms have yet to be improved. In the premise of market economy, market competition is regarded as a direct way to improve the efficiency of corporate governance. However, the actual effect of market competition based on price signals on investor behavior remains to be discussed. At the same time, due to the difficulties in market friction, investors need more practical supervision ability. Therefore, market competition does not always achieve the goal of optimizing corporate governance. To sum up, corporate governance based on behavioral factors is a technical problem and faces institutional and cultural problems.

#### **4.5 The Number of Technical Rounds of Diagnostic Test and Robust Test of Econometric Model**

Econometric models need scientific research hypotheses to explain market anomalies. In the framework of asset pricing and corporate finance based on behavioral factors, the econometric model is a standard and effective analytical tool that plays an important role in capturing and measuring behavioral factors. This makes the measurement model a technical concept and related to the empirical. Therefore, the "data-driven" econometric model has become the core mechanism of asset pricing and corporate finance based on behavioral factors. The practical deduction of the econometric model is generally a research path gradually formed based on market anomalies, although this path contains theoretical innovation attempts. From descriptive analysis to causal inference, econometric models are closely related to behavioral factors from beginning to end. The econometric model should be committed to improving robustness and universality to meet the requirements of market environments. However, in the case of complex and changeable behavioral factors, it also brings an over-fitting dilemma. In general, there is room for improvement in the construction method and test technology of the measurement model, and its interpretation and prediction effects need to be further improved. In addition, these are essential tasks of asset pricing and corporate finance research based on behavioral factors.

### **5. Conclusion**

Asset pricing and corporate finance based on behavioral factors have become a research hotspot in finance, which poses challenges and requirements for the effectiveness and stability of financial markets. Asset pricing and corporate finance based on behavioral factors symbolize "empirical" in finance and an essential means to explain market anomalies. Moreover, they are an urgent need to achieve high-quality development and maintain the international financial order. They essentially

reflect the inherent requirements of the socialist market economy. Asset pricing and corporate finance based on behavioral factors refer to the theoretical analysis framework and practical mechanism of investor psychology, preference, and cognition under the guidance of behavioral economics. Modern information technologies such as big data and artificial intelligence have promoted asset pricing and corporate finance innovation based on behavioral factors in recent years. Through the data-driven enhancement of investor behavior and the accuracy and scientific nature of market anomalies, its value fits the internal logic of a company's character. Therefore, behavioral factors provide a new path for the high-quality development of corporate financial markets. To sum up, asset pricing and corporate financial sustainable improvement based on behavioral factors will help better serve the real economy and help countries fulfill their international responsibilities.

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