

The Deviation of Fair Value Measurement in Financial Asset Valuation and Its Correction Mechanism

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Abstract. As a core financial asset valuation method, fair value measurement's "fairness" hinges on active market quotes or reliable valuation techniques. Rooted in the decision-usefulness principle of financial reporting, it has become increasingly pivotal since the 2008 global financial crisis—when its procyclicality amid market turmoil sparked intense debates about its stability. Yet, factors such as market conditions, flawed models, and artificial manipulation often lead to valuation bias, distorting accounting information and increasing financial risks. Drawing on IFRS 13 and CAS 22, this paper examines three main biases: market quote - dependent (irrationality in extreme markets), valuation technique - dependent (subjective parameter judgments), and artificial manipulation (e.g., discount rate adjustments). It further proposes a correction mechanism covering optimized market disclosure, improved valuation technologies (dynamic factors, AI aid), and strengthened supervision. The research aims to boost valuation reliability and provide relevant references.

Keywords: fair value, asset valuation, finance market, Valuation Bias Correction, Fair Value Hierarchy

1. Introduction

Fair value measurement, as the core method for financial asset valuation, derives its "fairness" from the reliability of active market quotes or valuation technologies. In practice, however, valuation biases frequently arise due to factors such as fluctuations in the market environment, flaws in valuation models, and artificial manipulation. These biases not only distort accounting information but also amplify financial risks.

Based on the framework of IFRS 13 and CAS 22, this paper systematically analyzes the manifestations and causes of the fair value valuation deviation of financial assets, and constructs a deviation correction mechanism from three dimensions of market mechanism, model optimization and regulatory constraints, thereby providing theoretical and practical references for enhancing the reliability of financial asset valuation.

2. Definition and classification standard of fair value

The fair value of assets generally refers to the price that market participants need to pay to sell assets or transfer liabilities in an orderly transaction, that is, the "selling price". Since fair value represents

the price of voluntary transactions between buyers and sellers in the current market, it exhibits dynamic characteristics [1].

FASB Announcement No. 157 puts forward the level theory of fair value. The fair value hierarchy classifies the inputs used in valuation techniques into three levels, which also correspond to three tiers for measuring fair value. The first level parameter is the quotation of the same assets or liabilities in the active market that the reporting entity has access to on the measurement date. The second level parameters are directly or indirectly observable parameters other than the quotation of similar assets or liabilities in the active market that the reporting entity has access to on the measurement date. The third level parameter is an unobservable parameter. The essence of the level of fair value is the sequence that can be selected when determining the fair value. The higher the level, the more reliable the fair value is, and the lower the level, the lower the reliability will be. The first level parameter, such as the quotation of assets or liabilities in New York Stock Exchange, is the quotation in an active market; While the third level parameters cannot be obtained from the market or there is no active market, and must be estimated using valuation techniques, which introduces subjective judgment and thus reduces the reliability of the measured fair value [2].

In the process of introducing the fair value measurement system in China, the three-level classification logic on the application of fair value in the international financial reporting standards has been fully referenced, with specifications adjusted to align with the actual conditions of the domestic market: first, if there is an active market for assets or liabilities, the quotation in the active market should be used to determine their fair value; Second, if there is no active market, the fair value shall be determined by reference to the prices used in recent market transactions by parties familiar with the situation and willing to trade or by reference to the market prices of other assets or liabilities that are substantially the same or similar; Third, if there is no active market and the above two conditions are not met, the fair value shall be determined using valuation techniques [3]. It can be seen that the determination of the level of fair value in China's accounting standards is essentially consistent with the provisions of international financial reporting standards and American generally accepted accounting principles, and is also divided into three levels. The three levels of determining the fair value can be simply summarized as: Quotation in an active market; Quotation in the recently active market; If there is no active market, the valuation technology shall be adopted [4].

3. Forms and causes of valuation deviation

In the three-level classification system of fair value, subjective judgment factors have been added to the determination of the two-level and three-level parameters, especially the three-level parameters. and must be estimated using valuation techniques, which introduces subjective judgment and thus reduces the reliability of the measured fair value. The measurement of fair value largely depends on the subjective judgment of professionals. This feature leaves room for profit manipulation for the reporting entity, which not only violates the original intention of replacing historical cost measurement with fair value to improve information relevance, but also causes the contradiction between fair value measurement and accounting conservatism principle.

3.1. Market quotation dependent deviation

This kind of technology dependent bias refers to the systematic error that the fair value calculation results deviate from the true level due to over reliance on specific technical methods, parameter assumptions or data sources while ignoring uncertain factors such as market variables, or subjective judgments in determining key model parameters (such as discount rate and expected cash flow). The

following is a typical case, which can intuitively reflect the valuation technology dependent deviation caused by subjective judgment error: on June 8th, 2020, North Asia issued the asset appraisal report on the recoverable value of the asset group involved in the impairment test of the goodwill formed by St Shida's proposed merger with Shenzhen Xingfei (hereinafter referred to as Shenzhen Xingfei goodwill project). However, there were two errors in the evaluation of Shenzhen Xingfei goodwill project by North Asia Business: one was the repeated addition of interest expense items in the process of calculating the recoverable amount of the asset group, resulting in calculation errors. Second, when calculating the discount rate, the relevant parameters were not taken based on the benchmark date (December 31st, 2019), which led to the calculation error of the discount rate. The above error led to the overestimation of the appraised value of Shenzhen Xingfei's goodwill and its asset group by 87.8856 million yuan, accounting for 35.87% of the original appraisal result [5].

3.2. Valuation technology dependent deviation

This kind of technology dependent bias refers to the systematic error that the fair value calculation results deviate from the true level due to over reliance on specific technical methods, parameter assumptions or data sources while ignoring uncertain factors such as market variables, or making subjective judgments on key parameters in the valuation model (such as discount rate and expected cash flow). The following is a typical case, which can intuitively reflect the valuation technology dependent deviation caused by subjective judgment error: on June 8th, 2020, North Asia issued the asset appraisal report on the recoverable value of the asset group involved in the impairment test of the goodwill formed by St Shida's proposed merger with Shenzhen Xingfei (hereinafter referred to as Shenzhen Xingfei goodwill project). However, North Asia made two critical errors in the appraisal: first, the double-counting of interest expense items in calculating the asset group's recoverable amount, leading to miscalculations. Second, when calculating the discount rate, relevant parameters were not selected in accordance with the benchmark date (December 31st, 2019), which led to the calculation error of the discount rate. The above error led to the overestimation of the appraised value of Shenzhen Xingfei's goodwill and its asset group by 87.8856 million yuan, accounting for 35.87% of the original appraisal result [5].

3.3. Human manipulation deviation

The third level valuation depends on the company's own assumptions and models (such as discounted cash flow model DCF and option pricing model. Nearly every key assumption and parameter in these models can be exploited as a "tool" for entities to manipulate valuation results. One of the most common means is to change the discount rate, use different discount rates to smooth profits in different years of performance, or underestimate credit risk to improve asset value. For example, during the subprime mortgage crisis in 2008, many banks used three-level fair value pricing to price MBS and CDO. In order to avoid huge losses, institutions used overly optimistic models and assumptions (such as the assumption of a very low default rate) to price unsalable assets [6]. The analysis presents annual observations of 105 firms from 46 Australian listed agricultural enterprises, totaling 338 firm-year observations. It examines discount rate selection in firms with fair value gains versus losses. Only 10% of firms reporting fair value income apply a discount rate below 10%, while over 33% use rates between 10% and 12%. Notably, 7% report very high rates of 28% or higher. Conversely, among firms with fair value losses, only 6% use rates between 10% and 12%, with 17% using rates between 12% and 14%, and 22% between 14% and 16%. Additionally,

12% of loss-making firms apply extremely high rates of 28% or more, which is more than double the occurrence in gain-making firms.

Overall, the analysis reveals the opportunistic behavior when choosing the discount rate of fair value measurement. The wide range of discount rates applied by managers does not seem to have a large linear correlation with current economic factors. Companies using higher discount rates tend to report greater agricultural gains or losses. At a given future cash flow level, higher rates amplify reported fair value losses and minimize reported fair value gains.

4. Construction of correction mechanism for valuation deviation

4.1. Optimize the market mechanism

In order to ensure openness and transparency and prevent artificial profit manipulation, a hierarchical information disclosure system ought to be established: the real-time quotation of assets in the active market should be disclosed, and the valuation technology, parameter assumptions and sensitivity analysis of assets in the inactive market should be mandatory disclosed.

At present, China has the characteristics of economic transformation and emerging market economy. There is no active market for most assets or liabilities, and there is a large demand for the third level valuation. However, the quality of certified public accountants, asset appraisers, auditors and other professionals needs to be improved. There are limitations in using the third level of fair value, that is, establishing valuation models and using valuation techniques to determine the fair value.

In view of this, it is recommended that assets or liabilities that do not have an active market and do not meet the measurement conditions of the first two levels of fair value should not be measured at fair value temporarily; instead, they should continue to be measured at historical cost. At the same time, in order to reflect the impairment of the actual value of assets in a timely manner, such assets shall be tested for impairment at least at the end of each period. If impairment is identified, impairment provisions should be recognized in a timely and full manner. Asset impairment accounting follows a more prudent principle, which can make up for the possible information distortion caused by the inability to reliably measure the fair value to a certain extent. In addition, it can also promote the establishment of a professional third-party valuation service platform, integrate market data and industry expert resources, provide a more credible reference for asset valuation in the inactive market, and improve the objectivity and consistency of valuation [2].

4.2. Improving valuation techniques and models

For the extreme market conditions proposed above, dynamic adjustment factors should be introduced to add liquidity discount or risk premium adjustment to the valuation results based on historical data, such as the counter cyclical capital buffer idea [7]. Furthermore, the promotion of machine learning assisted valuation and the use of AI algorithm to capture the impact of market sentiment and macro variables on asset value in real time can optimize the parameter prediction accuracy of fair value.

The China Securities Regulatory Commission (CSRC) should unify standards for indicators and techniques requiring subjective judgment or estimation and may engage external professional appraisers to verify the rationality of models and parameters. At the same time, we should further standardize the fair value measurement from the legislative level, refine the measurement standards, reduce the subjectivity and randomness in the implementation of the standards, and provide a clear

and authoritative legal basis for the valuation work. In addition, an industry valuation case library can be established to collect and sort out typical valuation cases and best practices for practitioners to learn and reference, and promote the exchange and improvement of valuation technology.

4.3. Strengthen supervision and governance

In 2020, the securities and Exchange Commission of the United States implemented the investment company act of 1940, requiring that the fair value be determined in good faith by the board of directors of the fund, which is responsible for developing the fair value method and supervising pricing services [8].

The board of directors of a commercial bank shall establish a sound internal control assume ultimate responsibility for the adequacy and effectiveness of this system. The management should take necessary measures to supervise the fair value valuation of financial instruments and the implementation of the system, and urge the effective management and reliable measurement of the fair value [8].

In addition to the above measures, we should also strengthen the application of regulatory technology. Use big data technology to comprehensively monitor the consistency and rationality of the valuation models of financial institutions. By building a data analysis model, tracking the use of valuation methods of financial institutions, timely triggering timely early warnings for frequent adjustments to valuation methods or abnormal fluctuations in valuation results. At the same time, it can cooperate with industry associations to regularly organize on-site inspection of the valuation work of financial institutions, and severely punish institutions with valuation manipulation, illegal measurement and other acts in accordance with laws and regulations, so as to increase the cost of violations, and form an effective regulatory deterrent. Additionally, strengthening international regulatory cooperation is crucial. With the deepening of the globalization of the financial market, the valuation of cross-border financial instruments has become increasingly prominent. By sharing information and cooperating with international regulators, we can better prevent the risk of valuation manipulation by transnational financial institutions using regulatory differences in different regions.

5. Conclusion

The nature of fair value measurement valuation biases stems from the conjoint effect of market incompleteness, technical limitations, and human profit-seeking motives. Its correction mechanism should balance "fairness" and "robustness", adhere to the priority of market quotation in active markets, and strengthen the transparency of valuation process and third-party supervision in inactive markets. In the future, we can further explore the application of big data and artificial intelligence technology in financial asset valuation, and reduce the deviation space from the technical level. However, there are still deficiencies in this study, which need to be improved in the follow-up study. First, the empirical data supporting the analysis of valuation biases is relatively limited. The analysis of the performance and causes of deviation in this paper mainly relies on individual typical cases (such as the evaluation case of Shenzhen Xingfei goodwill project by North Asia) and local regional sample data (such as the discount rate selection data of listed agricultural comprehensive enterprises in Australia), which does not cover large-scale sample data of multiple industries and regions. It also lacks long-term tracking data on the trends of valuation biases across different market cycles, resulting in the generalizability and timeliness of the conclusions requiring further validation. Second, the breadth and depth of literature review are insufficient. During the research process, the literature search on the theory and practice of fair value measurement focused more on the core

standards such as IFRS 13 and CAS 22 and the representative achievements in recent years. Literature exploration regarding differentiated practices in fair value application across countries or regions, as well as valuation issues unique to emerging markets, remains inadequate, and the complete context and the latest developments of the research on fair value valuation bias in the world were not fully presented. Third, the practical demonstration of the amendment mechanism is insufficient. The correction paths proposed in this paper, such as optimizing the market mechanism and improving the valuation technology, mostly stay at the level of theoretical framework design, do not conduct detailed demonstration in combination with the valuation scenarios of specific industries (such as banking and securities), and do not conduct in-depth analysis on the implementation costs, technical barriers and other issues that may be faced in the process of mechanism implementation. This leads to the practical applicability of the correction mechanism requiring further examination.

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