

Potentiality in Valuation: PB-ROE Decoupling and Event-Based Trading Irrationality in the Chinese Retail Market

Yujie Huang

*Institute of Finance, University of Indianapolis, Indianapolis, USA
huangy003@uindy.edu*

Abstract. The current paper is an empirical investigation into the PB-ROE connection and event-related dynamics related to valuation in the Chinese retail industry based upon 2021-2025 samples of 10 A-listed firms (five leaders, five distressed). The results indicate an impressive dichotomy: the correlation between PB and ROE is high and positive among leaders ($r=0.68$), which reflects the traditional theory of valuation; in case of distressed firm, however, the correlation is negative and significant ($r=-0.29$) due to speculative distortion. Negative episodes cause 4x bigger PB drops in troubled companies (-12.7 % vs. leaders -3.2 %), whereas false-positive (e.g., unconfirmed restructurings) events induce temporary bubbles, as could be the case with Dalian Friendship (the firm has a 73% PB rise/fall). Importantly, there is critical compatibility between leaders and semi-strong market efficiency as distressed firms are shown noise trader dominance, which disapproves the assumptions of EMH. We will suggest the use of the Event-Adjusted Valuation Model (EAVM) of event authenticity, intensity, and persistence in correcting the emerging-market mispricing that will give a guide to the investors not to fall into speculative trappings in fragile institutions.

Keywords: Price-to-Book Ratio, Return on Equity, Event Study, Noise Trader Theory, Behavioral Finance

1. Introduction

The retail market in China has seen tremendous wear and tear in business structure over the last series of years attributed to technological interruption, change in consumer trends, and spirited competitions. Within this overall market growth, the industry is however facing a more polarized situation, where the innovative firms can accrue more value and the traditional models are losing their value quickly. Digital transformation and supply chain innovations made successful players like Chongqing Department Store successful whereas players like Suning.com failed due to strategic misjudgments and debts leading to huge losses.

There is a close correlation between the important valuation ratios, namely the Price-to-Book (PB) and the Return on Equity (ROE). Although higher ROE should attract a higher PB according to theory, the same does not work so well in China. Rainbow Department Store has achieved high ROE with low PB (indicating undervaluation), whereas the struggling Suning.com even in operational

failure had achieved relatively high PB probably because of the speculative activity lingering on previous brand value.

This inconsistency leads to important questions:

1. Does PB-ROE relationship differ between leading v. distressed Chinese retailers?
2. What effect do the corporate events (positive/negative/false-positive) have on the valuations?
3. What lessons are learned theoretically and in practice to appreciate emerging market assets?

The paper criticizes the Efficient Market Hypothesis (EMH) of the Chinese retail industry, showing how the price distortions through speculation and volatility positioned around events interfere with intrinsic valuation relationships. It suggests an Event-adjusted Valuation Model (EAVM) to enable investors to avoid value traps and considers the theoretical issue of market efficiency limit, as well as provides them with practical approaches to investing into emerging markets.

2. Literature review

2.1. The ratio of PB and ROE in the valuation theory

One of the fundamental measures of determining a stock as either undervalued or overvalued in relation to its accounting value is through the price to book (PB) ratio where a ratio of market capitalization and book value of equity is considered. The efficiency of a firm in terms of profitability is measured by a formula whose ratio is net income and shareholders' equity (ROE). The classical valuation theory holds that the relationship is in an efficient market as higher ROE would be rewarded by higher PB multiples as investors want to reward the firm that is able to generate high returns on capital [1]. This can be attributed to the residual income model that is given as the value of equity is represented as the sum of the value of the book, and the present value of future abnormal earnings. This correlation is strongly supported by empirical studies that were conducted in developed markets. Previous empirical studies in developed markets strongly support the relationship between PB and ROE, where higher ROE tends to lead to higher PB ratios, validating the classical valuation theory. Nonetheless, the relationship between the two tend to be compromised in newer economies through institutional voids and speculative imbalances, leading to valuation gaps that dispute the teachings of the textbook.

2.2. Efficient Market Hypothesis (EMH)

EMH claims that asset costs rapidly and completely disclose all the available information that is open to any individual, it is impossible to achieve dragging returns. The hypothesis takes efficiencies to three dimensions weak, semi-strong, and strong whereby the characteristics of information engrossed in prices determine the categories. Though mostly approved in developed markets, EMH has not been approved in emergent environments, where some scholarly evidence has been borne out showing that Asian markets have correlated and fluctuating volatility since they have little institutionalization, a low level of disclosure, and restraining capital crossings. As an illustration, there are outstanding abnormalities in China stock market, which include the January effect and the post-holiday returns that does not align with the EMH completely, which states that stock market prices are unpredictable. While EMH is widely accepted in developed markets, in emerging markets like China, the model is challenged due to pervasive market inefficiencies, such as correlated volatility and speculative anomalies [2].

2.3. Noise trader theory and behavioral finance

The Noise Trader Theory is a refutation of EMH based on the idea that prices are biased by unrationed traders who are trading on informational noise (gossip, mood) as opposed to fundamentals. Such traders increase the mispricing thereby providing arbitrage opportunities that have a restriction of the risk and capital conditions. Behavioral biases are also visible in the Chinese equity market, as the behavior can be seen in both a speculative mania of so-called policy concept stocks (e.g. renewable energy subsidies), and rumor-related booms related to temporary increases in PB. The Chinese stock market, with its prevalence of speculative trading and noise-driven price movements, provides a clear example of how noise traders increase mispricing and market volatility [3].

2.4. Methodology of event study

Event studies measure abnormal returns during around occurrence of definite events to pinpoint market feedback. Events can be classified into fundamental (M&A, earnings surprises etc.) and sentimental (rumors, index inclusions etc.). On the one hand, positive events, such as those around strategic alliances, have the capacity of positively moving the valuation in a sustainable way, whereas false-positive events, such as a leakage of unconfirmed policies create spikes in returns, which are short-lived. Event studies consistently highlight that false-positive events, such as unverified corporate restructuring rumors, cause short-term price volatility, providing insights into the transitory nature of speculative bubbles [4].

3. Methodology

Ten A-share listed retailing companies in 2021-2025, half of which are market leaders (Chongqing Department Store, Yonghui Superstores, Rainbow Department Store, Red Flag Chain and Tianhong) and the other half are distressed businesses (Suning.com, Bubugao, Red Star Macalline, Zhongbai Group, and Dalian Friendship) are used in the study [5]. The events are categorized as positive, negative or false-positive events, in respect of company disclosures, media reports, and regulatory announcements. All the data from the market open source.

4. Results

This empirical study explores empirically four valuation attributes: comparative financial benchmarking, PB-ROE correlation dynamics, event-based valuation shocks and sequential evolution trends. The discussion indicates basic differences between the successful leader and the distressed businesses in China consumer retail market over the 2021-2025 period of observation.

4.1. Core financial indicator comparison

A comparative review that is adapted on various financial metrics, including the PB ratio and ROE over a period of five years indicates a high stratification between the two groups [6]. Market leaders invariably had PB ratios much higher than the benchmark 1.0 and group medians varied between 2.8 and 3.5. This high valuation relates to the continued belief by their investors on their models of operation and the potential to create economic value beyond accounting book value. The persistent profitability and high PB ratios of market leaders demonstrate how speculative trading, driven by investor optimism and sentiment, can inflate stock valuations. At the same time, these companies

vied with strong profitability, with a cumulative ROE staying consistently constructive and tending to fluctuate in the approximate range between 6 and 9 every year. As a sharp contrast, these troubled businesses were characterized by structurally low valuations with a group PB median that was substantially below 1.5 with about one-third of sample companies trading at prices below its book value in 2025. This was evidenced by their ineffective operations as it registered negative ROE values every time during the five-year period with an average of -4.7 percent.

There were some outstanding aberrations in this wider tendency. Yonghui Superstores in the leader category recorded an aberration in its valuation during 2025, where its PB ratio was overvalued at 9.53 even reporting its ROE to be in the margin of 0.0327 only, which was way below the average of the leader group. On the other side, the financially distressed Dalian Friendship impulsively arched its PB to 9.81, which is counterintuitive, in the same year to the report of negative profitability (ROE = -0.0523). These are signs of episodic dislocations in which market valuations seem to have become unhinged with fundamental performance, and further consideration as to what caused the catalysts of such moves is warranted. See Figure 1 below for results.

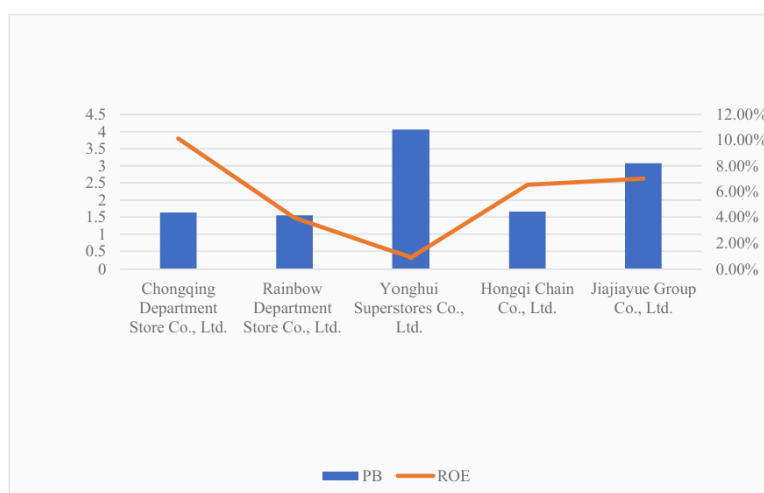


Figure 1. Comparison of PB and ROE indicators among 5 leading retail enterprises

Data Source: SINA Finance

4.2. PB–ROE correlation divergence

On statistical analysis of the relationship between PB and ROE, it emerges that the two groups have different valuation regimes. When it comes to market leaders Pearson correlation analysis shows a quite solid positive Pearson correlation coefficient 0.68 ($R^2 = 0.46$) that implies that about 46 percent of the variation in PB ratio can be attributed to changes in profitability. This close connection substantiates the traditional valuation theory according to which equity prices are sensitive to the enhancements in the level of capital efficiency. The positive correlation between PB and ROE for market leaders supports the notion that investor confidence in the firm's profitability is a key driver of stock valuations. The association occurs in operative levels, which is experienced in other companies such as Chongqing Department Store, where the PB ratios experienced a reasonable volatility between the limits of 1.38 and 1.99 and the ROE between 0.061 and 0.149, indicating harmony in movement of profitability and market worth.

The situation is just the opposite in distressed enterprises with a highly negative correlation coefficient of -0.29 ($R^2 = 0.08$). The price deviations in distressed companies suggest that

speculative activity, rather than underlying profitability, influences the market's perception of a company's valuation. This statistical description suggests most of PB change does not reflect underlying profitability movement, which means that performance is extremely detached at its valuation. The example is one of Dalian Friendship: whilst the company has enjoyed negative ROE throughout 2025, the PB ratio has inexplicably increased by 73% over one month to 11.26. This negative correlation indicates that the valuation of the distressed company is tightly dependent on the aspects not of the fundamental character, such as speculative trading, rumor-driven volume movement, and liquidity influences as opposed to the noticeable rise in operations. See Figure 2 below for results.

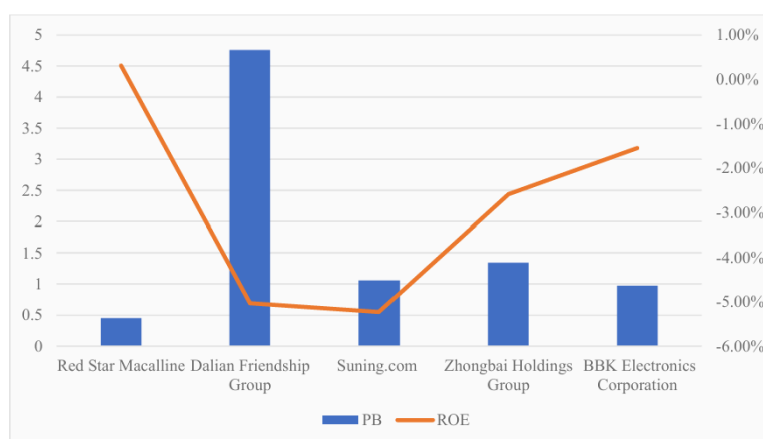


Figure 2. Comparison of PB and ROE indicators among 5 retail enterprises in distress

Data Source: SINA Finance

4.3. Event-driven valuation effects

Event study methodology measures the market reaction to the business-related events classified as positive, negative, or a false-positive event [7]. The types of events distributed dissimilarly across cohorts: market leaders were distributed mainly through positive events whereas the distressed firms were up against many negative events with infrequent but significant events of false positive. The event numbers are summarized in Table 1.

Table 1. 4 Year event distribution

Group	Positive (%)	Negative (%)	False-positive (count)
Leaders	84	16	0
Distressed	8	84	2

Data Source: SINA Finance

There are critical asymmetries in the magnitudes of market responses. Average declines of 3.2% in the PB of isolated cases of leaders such as Rainbow Department Store were also marked by strategic digital transformation by its leadership, though indicative of investors trusting management with its ability to revive operations. On the contrary, troubled companies experienced exorbitant erosion of their valuations due to negative events with solitary disaster triggering an average contraction in PB of 12.7%. This susceptibility is represented by bankruptcy declaration of the Suning.com that had already lost over 63.8 billion Yuan cumulatively and closed the stores

everywhere in the nation. In the same way, quarterly PB decline of 15 percent occurred at Zhongbai Group upon regulatory punishment against violation of disclosure rules.

False-positive incidences introduced severe volatility but in the distressed cohort alone. In the Chinese stock market, retail investors' behavior can significantly drive short-term volatility, as seen in the speculative reactions to false-positive events. This was witnessed in the Dalian Friendship June 2025 valuation trend; unfounded gossip about a restructuring of the company into a "supply and marketing cooperative" sent the PB up by 73 percent in a few weeks, before collapsing 10 percent on deciding absolutely that it was not so. Such a scenario is indicative of the tendency speculative capital to drive short-term overvaluation of comparatively poor companies when prompted by catalysts of sentiment and thus open a fictional short-term profitability in self-absorbed disregard of operations. The impact is summarized in Table 2.

Table 2. Impact on PB ratio

Event Type	PB Change – Leaders	PB Change – Distressed
Single Negative	–3.2%	–12.7%
Single False-Positive	N/A	+73% → –10% correction

Data Source: SINA Finance

4.4. Evolution patterns of time-series

In a longitudinal analysis, dissimilar valuation trajectories are revealed between the cohorts. The market leaders have limited fluctuations in PB, limited ranges in ROE work discipline.

Distressed companies portray explosive degenerative directions. At the end of the five-year forecast, Suning.com had five years of negative ROE but paradoxically, its PB increased to 1.54, which denotes speculative inflows leaving fundamentals behind. Constant valuation erosion took place in Bubugao because of over expansion.

Yonghui superstore experienced one such paradox: The 2024 Pangdonglai tie-up announcement, caused PB to lurch up 160%, and ROE to shrink 28%. The inverse of this dynamic is the realization of the market being over-enthusiastic about strategic moments which results in an unsustainable overhang of the valuation when reality in terms of operations comes to play. The evidence of speculative inflows leading to mispricing confirms the persistent price deviations in firms dominated by noise traders.

5. Discussion

5.1. Implications to EMH

The positive correlation of PB and ROE in the leader ($r=0.68$) confirms the EMH about the semi-strong efficiency of the Chinese market with stable companies: the profitability of the firms is transferred to the prices within the shortest time, and the PB is a valuable measure of valuation together with ROE. On the other hand, the negative relationship in distressed firms ($r=-0.29$) is another evidence and contradicts EMH that the price regularly decouples with the fundamentals. The source of this dislocation can probably be explained by behavioral biases: rumor chasing, speculative hype, and herd behavior. When speculative behaviors dominate, market prices can decouple from fundamentals, leading to valuation anomalies as seen in China's retail investors' behavior. This is in line with literature indicating that EMH assumptions fail under the

circumstances of the prevalence of retail investors and poor disclosure indicating its shortcomings in developing economies.

5.2. Event sensitivity/ asymmetric impact

The distressed firms are 4 times more sensitive to bad happenings compared to leaders. Asymmetry is occasioned by the existence of variable investor bases: leaders of people by shareholders, good brands, and stable incomes, which mitigate shocks [8]. The distressed companies are dependent on speculative money, are not supported by institutions and are most sentiment based. Speculative money dominates distressed firms, making them more sensitive to market rumors and positive events. It is only when positive events occur and portend the actual revival in operation that they are likely to have a prolonged impact on PB of distressed firms.

6. Conclusion

This paper has studied the relationship between PB and ROE, and event metamorphoses in the retail industry in China by using A-share listed data of 10 companies between 2021 and 2025. The evidence indicates two-tier valuation processes-market leaders demonstrate sound PB-ROE relationship, which is based on the level of profitability, whereas the latter show prevalent signs of speculative nature that separates PB and business achievement. The mispricing observed in the distressed firms highlights how speculative trading can drive prices away from true valuations. Event analysis indicates that adverse events have a greater effect on troubled companies, whereas false-positive indicators neglect to increase the valuation on an unsustainable basis. The paper uses the methodology of correlation and event study in quantitatively estimating the extent to which market prices and the true financial performance differ before concluding on the importance of investor sentiment attitudes and informational asymmetry in the establishment of valuation inefficiency.

First, regulators need to make market-sensitive announcements subject to third-party verification and apply a numeric score on an Event Risk Index (ERI). Second, third-party market-sensitive announcements should be required based on unusually high PB ratios and persisting low or negative ROE to issue valuation justification reports. Regulatory bodies could utilize models that track speculative tendencies and price inefficiencies.

To investors, it is not enough to have a sole dependence on PB. Combining the indicators of profitability, able to examine, to create and analyze events, and execution of the assessment of the credibility to evade the pitfalls of the value is the necessary one. Policymakers, on the one hand, could improve the efficiency of a market by increasing the openness of the information and educating investors.

References

- [1] Jones, C. M., Shi, D., Zhang, X., & Zhang, X. (2021). Understanding retail investors: Evidence from China.
- [2] Ye, L., & Tan, Y. M. (2021). Noise trader risk—Evidence from China's stock market. *Capital Markets Review*, 29(1), 59-72.
- [3] Chen, C., Hu, C., & Yao, H. (2022). Noise trader risk and wealth effect: A theoretical framework. *Mathematics*, 10(20), 3873.
- [4] Liu, Y., Pan, L., Tang, Y., & Xu, J. (2016). Speculative trading and stock returns. *Review of Finance*, 20(5), 1835-1865.
- [5] Jones, C. M., Shi, D., Zhang, X., & Zhang, X. (2025). Retail trading and return predictability in China. *Journal of Financial and Quantitative Analysis*, 60(1), 68-104.

- [6] Coultas, A. (2011). Is the price-to book/return on equity ratio constant across sectors?
- [7] MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13–39.
- [8] Borusyak, K., Jaravel, X., & Spiess, J. (2024). Revisiting Event-Study Designs: Robust and Efficient Estimation. *The Review of Economic Studies*, 91(6), 3253–3285. <https://doi.org/10.1093/restud/rdae007>