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Research Paper

Factor Models and Long-tern Underperformance of the IPOs[1]

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INTRODUCTION

Based on the existing research literature on initial public offerings (IPOs), it is evident that while IPOs often exhibit strong short-term performance, their long-term performance tends to lag behind that of the broader market or relevant industry. This long-term underperformance is a critical concern for participants in the capital market. The current study employs factor models to delve into the long-term performance of IPOs, specifically focusing on the phenomenon of their underperformance over extended periods. To provide a comprehensive and reliable understanding of this phenomenon, analyses have been conducted at multiple levels, encompassing both market-wide and industry-specific perspectives.

MATERIALS AND METHODS

The research encompassed an analysis of 235 initial public offerings (IPOs) spanning from February 2015 to December 2020, totaling 57 months of observation. Utilizing a factor model approach, monthly time series data for portfolios comprising IPOs were employed to investigate the performance of these offerings. To explore the variability in IPO performance, the intercept level of the models was utilized. Given the lack of consensus among researchers regarding the appropriate duration for assessing the long-term performance of IPOs, this study examined three distinct periods: 12, 24, and 36 months.

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Moreover, considering the diverse models available to explain IPO performance and their potential impact on outcomes, three conventional models were employed: those proposed by Fama and French (2003 and 2015) and Hou et al. (2015). Additionally, analyses were conducted separately for the stock and over-the-counter markets. Due to data constraints, the study focused solely on portfolios comprising companies from the chemical, pharmaceutical, agricultural, and basic metal industries. Consequently, industry-level analyses were restricted to these four sectors.

RESULTS AND DISCUSSION

The validation tests conducted on the models affirmed their validity, with results indicating that all investigated models possess sufficient explanatory power. The adjusted explanatory power (adj R2) ranged from 69% to 85%, with a decrease observed as the definition of the long-term period extended. Notably, IPOs exhibited a strong correlation with the market, with market risk and profitability emerging as the primary factors influencing their returns. Other variables had minimal impact on explaining the long-term performance of IPOs.

In terms of investigating the underperformance phenomenon, the study did not yield substantial evidence supporting either low or high performance among initial public offerings. Across all periods and models, the intercepts lacked statistical significance. Moreover, disaggregating the data into market and industry levels did not yield notable differences in results. Analysis of the four specified industries indicated a lack of statistically significant phenomena, although borderline significance with a positive coefficient was observed in certain periods for the chemical industry. Additionally, the distinction between IPOs listed in the stock market versus those in the over-the-counter market did not affect their long-term performance.

CONCLUSION

The evidence from the current research does not support the existence of the phenomenon of "IPOs long-term underperformance" or its reverse form of overperformance in any of the tested cases. This conclusion holds true across different time periods (12-24 and 36 months), market types (stock and over-the-counter), and industries (chemical, pharmaceutical, agriculture, and basic metals). Furthermore, the choice of model used in the analysis did not have a significant impact on the results. In more technical terms, it can be concluded that over periods exceeding one year, the market does not differentiate between IPOs and other companies based on factors beyond known fundamental factors. This finding challenges the necessity of adjusting individual decision-making models in response to initial public offerings. Additionally, it provides valuable insights for legislators when crafting regulations related to the capital market, especially those pertaining to initial offerings.

Keywords: Long Term Performance, Factor Models, Initial Public Offering (IPO), Under Performance Phenomenon.
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