



The Impact of High-Box-Office Film Events on Stock Returns of A-Share Film Industry Companies

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Abstract. This paper takes *Nezha: The Demon Child's Sea Chaos*, China's first animated film to break the 10 billion box office, as the research object, aiming to further reveal the impact of market events of leading film and television IPs on the stock price fluctuations of related listed companies. By constructing an event analysis model, this paper systematically analyzes the market reaction characteristics during the event window of box office breakthroughs. The empirical results show that high-grossing movie events can significantly increase the market attention of related listed companies in the short term and trigger positive abnormal fluctuations in stock prices, but this impact effect will gradually decay as market sentiment cools down. This study provides a quantitative basis for the investment evaluation of major film and television events in the Chinese environment, helping investors to view the investment value of hot film and television events more rationally, and at the same time provides a realistic reference for film and television companies to evaluate the market expectations of key projects.

Keywords: Abnormal Stock Returns, Stock Price Fluctuations, Movie Box Office.

1 Introduction

The film and television cultural industry, as an important growth pole of the national economy, not only creates value through direct outputs such as box office and copyright revenues but also generates economic multiplier effects by extending the industrial chain through merchandise development and cultural tourism integration. This characteristic means that the commercial success of top-tier film and television works often holds strategic significance beyond mere box office figures. The explosive success of the domestically produced animated film *Nezha: The Demon Child's Sea Chaos* (Ne Zha 2) during the 2025 Spring Festival season vividly illustrates this industrial pattern. The film not only broke the Asian film history record with a box office of tens of billions, but also formed sustained economic benefits through cross-industry linkages such as hot sales of peripheral products and theme park development. According to industry statistics, its derivative product revenue has reached 30% of the movie box office, highlighting the radiation effect of film and television IP on related industries. Given the long production cycle of films, most film companies release around 20 films in a year, with only a few turning a profit. Therefore, the box office success of a single film can

lead to an increase in the market value of the relevant distribution companies, thereby affecting their stock prices [1]. In this industrial ecology, the breakthrough performance of *Nezha 2* not only directly pushed up the stock price of the producer but also triggered the capital market to re-evaluate the growth space of the industry by verifying the feasibility of the domestic animation industrialization path. Therefore, exploring the transmission mechanism of such phenomenal works on the stock prices of listed film and television companies has important practical significance for understanding the capitalization laws of the cultural industry.

According to existing research, financial performance has a significant impact on the stock returns of listed companies [2], and the performance of film and television companies is closely related to the diversified profit model. From the perspective of industry characteristics, box office revenue is the core variable of film and television company performance [3]. As a direct reflection of box office revenue sharing, it is usually confirmed in a centralized manner during the film release cycle and has a strong timeliness. Its performance that exceeds expectations will directly increase the market's optimistic expectations for the company's short-term revenue and drive short-term stock price fluctuations. Copyright sales are more reflected in medium- and long-term returns, including the phased release of copyrights through multiple channels such as theaters, television, and online platforms. This type of revenue can continue to generate cash flow within 3-5 years after the film is released. Its stability helps smooth performance fluctuations and enhances investors' confidence in the sustainability of corporate profits.

The article attempts to study the impact of high box office movie events on the stock prices of listed companies in the film and television industry, as well as the duration of this impact, based on the ultra-high box office movie *Ne Zha 2* and using the event analysis method. Firstly, the event day, event window, and estimation window are defined, and data is collected to select relevant variables. Secondly, the market model is employed to estimate the normal returns during the event window. Thirdly, the abnormal returns and cumulative abnormal returns are calculated. Finally, a significance test is conducted on the cumulative abnormal returns to determine the extent of the impact of high box office movie events on company stock prices, and line charts of abnormal returns and cumulative abnormal returns over time are plotted to judge the duration of the impact of high box office movie events on company stock prices.

2 Literature Review

In the study of the relationship between movie box office and stock price volatility, academia has formed multi-dimensional research achievements. Early foundational research comes from Joshi & Hanssens' pioneering work linking movie marketing behaviors to capital market reactions, demonstrating that high-box-office films can drive up stock prices by boosting investor expectations [1]. Zhan Zehao further validated the short-term impact of box office and word-of-mouth on the stock prices of media companies based on Chinese data, but did not distinguish differences in box office magnitude [4]. Maël Diez found that box office failures have limited impact on stock prices,

inversely highlighting the necessity of studying box office success events [5]. In the research field of the impact of different types of events on stock prices, methodological innovations and empirical findings have continued to evolve. Einav & Ravid pioneered the use of event study methodology, verifying its effectiveness in capturing the capital market effects of film events by analyzing abnormal returns caused by changes in release dates [6]. Mendoza-Urdiales et al. established regression models combined with social media sentiment data and found that negative news has a greater impact on stock prices than positive news [7]. Shahzad et al.'s application in a non-film industry (Pakistan's banking sector) demonstrated that event study methodology is also applicable to evaluating the financial impacts of macro-level shocks such as public health crises, expanding the methodological scope of application [8]. Studies on market particularities have revealed the moderating role of regional differences in the stock price response mechanism: De Vany and McMillan found that U.S. government policies also significantly influence the stock prices of film industry companies [9]; addressing the particularity of the Chinese market, Xu Fengqi pointed out that speculative culture may lead to overreactions in film concept stocks, with her research showing that irrational premiums caused by hot events trigger abnormal stock price fluctuations [10]. Complementing this, Luo Yu's findings revealed that favorable cultural industry policies can increase stock returns of related listed companies, confirming the critical role of institutional environments in the valuation of China's film sector [11].

The article's potential contributions mainly include three aspects: Firstly, it further provides a theoretical foundation for the proposition that "high-box-office film events can intervene in stock market returns to a certain extent"; secondly, unlike existing literature that mostly focuses on the impacts of box office failures, release date changes, or general word-of-mouth effects—and lacks special analysis of single ultra-high-box-office film events—this paper takes *Ne Zha 2*, the highest-grossing film in Asian film history, as a sample to fill the research gap on "the impact of ultra-high box office magnitude on stock prices"; thirdly, combining the characteristics of China's A-share market, such as a high proportion of retail investors and the tendency of film concept stocks to be emotion-driven, this paper focuses on analyzing the localized manifestations of investor sentiment transmission mechanisms.

3 Research Design and Data Description

3.1 Empirical Hypothesis

Based on the existing literature, the following hypothesis is proposed:

Hypothesis 1: High-grossing movie events will affect the stock returns of related film and television industry companies.

Hypothesis 2: The impact of high-grossing movie events on the stock returns of related film and television industry companies is short-term.

As the main producer and sole distributor of the *Nezha* film series, this article selects the stock returns of Beijing Enlight Media Co., Ltd. to study the impact of high-grossing movie events on the stock returns of listed companies in the film and television industry.

3.2 Definition of Events and Event Research Window

Ne Zha 2 was released in mainland China on January 29, 2025. To quantitatively investigate its impact on the stock returns of Beijing Enlight Media Co., Ltd., this study designates January 29, 2025 as the event date (denoted as $T=0$). The event window is defined as the 10 trading days before and after the event, labeled as $T=-10, -9, \dots, -2, -1$ and $T=1, 2, \dots, 9, 10$. For estimating the normal return, that is, the rate of return that would be generated if it were not affected by the "Nezha" movie event, the estimation window is set to 200 days, recorded as $T=-210, -209, \dots, -12, -11$.

3.3 Research Sample Selection

Daily returns of the CSI 300 Index and Enlight Media's stock were collected from March 20, 2024, to February 19, 2025. Excluding market holidays, this yielded a total of 221 observations. The event window is defined as January 14, 2025, to February 19, 2025 (excluding the event date), while the estimation window covers March 20, 2024, to January 13, 2025. All data in this study are sourced from the China Stock Market Accounting Research Database (CSMAR).

3.4 Estimation of The Normal Rate of Return

The article uses a market model to calculate the normal rate of return:

$$R_t = \alpha + \beta R_{mt} + \varepsilon_t \quad (1)$$

Among them, α , β are regression coefficients, and ε_t is a random error term. The daily return rate of the Shanghai and Shenzhen 300 Index in the estimation window is regressed on the daily return rate of Guangguang Media stocks to obtain the normal return rate of the event window: $E(R_t) = -0.0003958 + 0.0135628 R_{mt}$.

3.5 Calculation of Excess Return

In the event analysis method, excess return is defined as the difference between the actual return and the normal return, that is:

$$AR_t = R_t + E(R_t) \quad (2)$$

The corresponding excess return is calculated through the daily return of the event window and the event day, and then the cumulative excess return of the event window (including the event day) is calculated, that is:

$$CAR_t = \sum_{T=-10}^n AR_t \quad (3)$$

3.6 Significance Test

The significance test of the cumulative excess return is carried out, and the following assumptions are made:

H_0 : $CAR_t = 0$, The high-grossing movie event of Nezha 2 will not affect the stock returns of Enlight Media.

H_1 : $CAR_t = 1$, The high-grossing movie event of Nezha 2 will affect the stock returns of Enlight Media.

4 Empirical Analysis

Based on the research design above, this section will substitute data for specific processing and analysis. First, the necessary data of the event window period is obtained, then the significance analysis of the cumulative excess return is conducted, and finally, empirical conclusions are further drawn based on the AR_t and CAR_t change curves.

4.1 Preliminary Data Processing

The article first estimates the normal rate of return through the market model and then obtains the excess rate of return and the cumulative excess rate of return. The event window period $E(R_t)$, AR_t , and CAR_t are shown in Table 1.

Table 1. Event window period $E(R_t)$, AR_t , CAR_t

Date	$E(R_t)$	AR_t	CAR_t
-10	0.0353206	0.0027854	0.0027854
-9	-0.0090977	-0.0009133	0.0018722
-8	0.0011612	0.0033328	0.0052049
-7	0.0038724	0.0363956	0.0416005
-6	0.0057712	0.0028308	0.0444313
-5	0.0006445	-0.0027765	0.0416548
-4	-0.0129929	0.0215399	0.0631948
-3	0.0020075	0.0064675	0.0696622
-2	0.0099879	-0.0120889	0.0575733
-1	-0.005981	0.009139	0.0667123
0	-0.0082107	0.2086307	0.275343
1	0.0166676	0.1634024	0.4387454
2	0.017206	0.016868	0.4556133
3	0.0025161	0.1973409	0.6529542
4	-0.0066279	0.2066279	0.8595821
5	0.0124319	0.1875681	1.04715
6	-0.00549	0.205324	1.252474
7	0.0113672	0.1887017	1.441176
8	0.0024931	-0.1484761	1.2927
9	-0.012289	-0.050422	1.242278
10	0.0090941	0.0376689	1.279947

4.2 Significance Analysis

This study uses the parametric test method to conduct statistical inference on the cumulative abnormal return (CAR_t). By calculating the p-value (probability value) of

CAR within the event window $[-10, +10]$, the significance level of the high-box-office event's impact on stock prices is verified. Under the premise that the null hypothesis (H_0 : $CAR=0$) holds, the p-value represents the probability of observing the current CAR value or a more extreme result. As shown in Table 2, within the event window, the final cumulative abnormal return CAR is 127.99%, with a standard deviation (sd) of 0.1037. The calculated p-value of 0.0071 is less than $\alpha=0.01$, indicating that the null hypothesis is rejected at the 99% confidence level, and the alternative hypothesis (H_1 : $CAR \neq 0$) is accepted. This leads to the conclusion that the high-box-office event of Ne Zha 2 has a significantly positive impact on the stock returns of Beijing Enlight Media Co., Ltd.

Table 2. Results of the significance test of cumulative excess returns

CAR	sd	n	t value	p value	star
1.279947	0.1037274	21	2.692704	0.007088	***

4.3 Graphical Analysis

The article finally analyzes the changes of AR and CAR over time. According to the calculated event window excess return and cumulative excess return, they are plotted as shown in Figure 1. The excess return is generally stable. When $T < 0$, the excess return is equivalent to the normal return and is always near 0. When $T > 0$, the frequency of positive values is significantly higher, until after $T=8$, it begins to decline significantly to negative values. The cumulative excess return curve changes significantly. When $T < 0$, there is no obvious fluctuation but it rises slowly with a very small trend. It starts to rise rapidly from $T=0$, with a huge growth rate and continues. At $T=7$, the cumulative excess return reaches the maximum value. After that, the cumulative excess return curve shows an overall downward trend and tends to be flat, without falling below the previous level. Overall, in the event window of $[-10, 10]$, the maximum cumulative excess return of Guangguang Media is 144.12%, all of which are positive values and significant at the 1% level. It can be seen that on January 29, 2025, the emergence of the hit movie "Nezha: The Devil Boy Conquers the Dragon King" had a significant positive impact on the stock returns of Beijing Enlight Media Co., Ltd., a listed company in the film and television industry behind it, but the duration was limited.

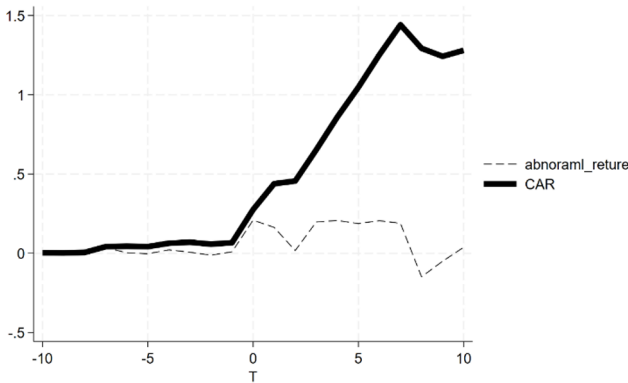


Fig. 1. AR_t and CAR_t change curves

5 Conclusion

This study uses *Nezha: The Demon Child's Sea Chaos* as a case to reveal the impact mechanism of high-box-office film events on the stock returns of listed companies in the film industry. The research confirms that this event significantly enhanced the stock returns of the producer, Enlight Media, with the cumulative abnormal return reaching a maximum of 144.12% within the event window and passing the significance test at the 1% confidence level. This corroborates that the success of leading film IPs can trigger short-term stock price fluctuations through investor sentiment transmission. Meanwhile, the event's impact exhibits timeliness: returns began to decline seven days after the film's release as market sentiment cooled, highlighting the "blockbuster dependency" characteristic of the film industry and indicating that the excess returns from a single work cannot sustain corporate valuation in the long term.

Based on the findings, film enterprises should strengthen the full industrial chain development of leading IPs, leverage the film's release period to advance merchandising licensing and cultural tourism integration, and optimize market value management to stabilize stock prices. Investors need to construct an event-driven investment framework, monitor indicators such as pre-sale data and word-of-mouth, avoid valuation correction risks, and balance the long-term development potential of enterprises. At the policy level, it is necessary to improve information disclosure standards, regulate announcements about hot events, and introduce incentive policies to promote industry innovation. Future research could adopt multi-case comparative analysis to explore differences in stock price impacts across box office magnitudes and film genres, quantify investor attention through social media data, track the financial contribution cycle of IP derivative businesses, and facilitate the film industry's transformation from "box office-driven" to "ecology-driven" while deepening theoretical and practical explorations of industry-finance integration in cultural industries.

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