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Research on Market Reaction to New Product Launches by Japanese Game Companies

-- An Empirical Analysis based on the Semi-Strong Efficient Market Hypothesis

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Abstract

Despite being a small island country, Japan has a leading role in the global gaming market. Since the days of home consoles until the next generation of consoles, pixel art to AAA masterpieces, Japanese manufacturers have transformed the industry many times over. Not only did Japanese game companies define the past few decades but they are still shaping the future. This paper chooses five leading Japanese game companies as samples: Nintendo, Sony, Sega, Capcom and Square Enix. According to the Semi-Strong Efficient Market Hypothesis, this study applies the Event Study method to perform an empirical analysis of the market reaction to new software and hardware product launches from 2017 to 2026. The study concludes that: (1) The Japanese gaming capital market is typically semi-strong efficient; the introduction of high-quality new products by game companies (like Resident Evil 4 Remake and The Legend of Zelda: Tears of the Kingdom) can create a substantial positive Cumulative Abnormal Returns (CAR). (2) The response to the Japanese gaming market has considerable asymmetry and loss aversion; new products that fail to meet the expectations of the people (like Final Fantasy XVI) have a significant negative correlation with Cumulative Abnormal Returns (CAR). (3) There is some corporate heterogeneity; the stock price elasticity of pure content developers (Capcom) is larger than that of diversified hardware platform providers (Sony). (4) The time discounting effect is confirmed in the difference between the announcement and the release of Pokemon Legends: Z-A. This paper not only supplements empirical research related to the Japanese gaming market and the financial field but also provides an empirical basis for managing market value of game enterprises and choosing strategies for investors.

Keywords

Japanese Game Industry; Event Study; Market Reaction; Efficient Market Hypothesis; Cumulative Abnormal Return.

1. Introduction

The digital economy and cultural industries are very intertwined in the contemporary era. Different forms of entertainment are coming out one after another, with electronic game industry having overtaken movies and music as the most commercially valuable form of entertainment in the world. Japan is among the biggest gaming markets in the world. Being the origin and innovation highland of the modern game industry, this country has produced a number of leading game companies that have global impact including Nintendo, Sony, and Capcom. The introduction of new products by these gaming titans, be it software titles with disruptive and innovative gameplay or hardware console devices which set the standards of

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next generation, always impacts on the international gaming market. Not only are these events cultural banquets to players across the globe but they also contribute to the success of the Japanese gaming market. This paper will examine closely the response of the market to the introduction of new software and hardware offerings by five leading Japanese game firms: Nintendo, Sony, Sega, Capcom and Square Enix. It aims at giving reference value to game enterprises so that they can convert product quality into corporate value accurately and timely, and investors can differentiate between true innovation and marketing bubbles.

2. Significance of the Research

The introduction of new products by Japanese game companies usually results in the shift of expectations among investors, which is often followed by shifts in market sentiment and stock prices. Thus, it is useful to examine the market response of Japanese game businesses when they introduce a new product because it enables managers to comprehend how the drivers of stock price vary between various kinds of products (software vs. hardware, new titles vs. sequels). This gives suggestions on developing more scientific information disclosure and expectation management strategies, as well as assist enterprises in developing more prudent promotional strategies in future. Conversely, the market reaction analysis that has been presented in this paper assists investors in knowing how new product releases affect the stock prices and thus make suitable quantitative investment strategies.

3. Research Content and Innovations

The content and innovations of the research are as follows: (1) The Event Study method is used as the main research tool to examine the short-term response of stock prices of five leading Japanese gaming giants in the event of new product launches, whether the market generates considerable positive or negative reactions to such events[1]. (2) The sample of the research is quite large and new, including not only known classic games already released (like Resident Evil 4 Remake) but also prospectively covering the latest events such as Pokemon Legends: Z-A and the Switch 2.

4. Literature Review

Eugene F. Fama put forward the Efficient Market Hypothesis (EMH), which suggests that in an efficient capital market, security prices completely reflect all available information[2].Based on the Semi-Strong Efficient Market Hypothesis, this paper posits that the Japanese stock market can react to public information about new product releases by Japanese game companies in the short term. That is to say, if the market is efficient, stock prices should adjust rapidly to a new equilibrium point during the short window period of a new game product release or announcement, generating estimable Abnormal Returns (AR).

There is an information asymmetry on new game products in the Japanese gaming market[3].The promotion of new products and removal of embargoes on authoritative media scores (Metacritic Score) have a lot of reference value. They are powerful indicators to the game enterprises to communicate their R&D capacity, cash flow expectations and future growth potential to the market easily directing the market sentiment towards a positive or negative direction. Not only can positive, high-quality signals enhance the market valuation of game enterprises, but also lower the cost of acquiring information by investors[4].

Daniel Kahneman and Amos Tversky have identified in Prospect Theory: An Analysis of Decision under Risk that the sensitivity to loss is much higher than to gain, i.e. people are loss averse[5]. According to this, the theory can explain well why, in the context of new game releases, the intensity of market reaction to negative news of "falling short of expectations" (e.g.,

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Final Fantasy XVI failing to meet sales targets) is often much larger than the intensity of market reaction to positive news of "meeting expectations".

The New Product Announcement (NPA) is one of the most valuable information to an enterprise and has been under academic attention for long, yet early empirical studies were mostly conducted on manufacturing and technology sectors in Europe and America[6]. Schaminee found through research on new product releases by technology companies that not all innovations bring positive returns; only products with significant technological breakthroughs or those capable of changing the competitive landscape can generate significant Cumulative Abnormal Returns (CAR)[7]. Paul Sergius Koku explained in his research that "Pre-announcements" can effectively manage market expectations and reduce uncertainty risks on the launch day[8].

Overall, despite the fact that the existing literature has extensively researched the effects of new product releases on stock prices, there are still some gaps and unresolved issues:1. Restrictions in research objects: The majority of studies consider the US stock market, whereas systematic empirical research on Japan, a mature gaming market, is comparatively limited.2. Uniqueness of product dimensions: There are few studies that differentiate between and compare hardware consoles and game software.3. Slowness in research timeliness: As global consumption patterns and supply chain relations are being restructured in the post-pandemic period, early conclusions may no longer be valid.

5. Research Method

5.1. Research Hypotheses

(1) Efficiency Hypothesis: The launch of flagship new products by Japanese game companies may lead to substantial stock price variations, which will create statistically significant Cumulative Abnormal Returns (CAR).

(2) Asymmetry Hypothesis: The negative reaction of the market to products that fail to meet expectations is stronger than the positive reaction to products that exceed expectations (representing loss aversion).

(3) Heterogeneity Hypothesis: The marginal market response of pure software developers (e.g., Capcom, SE) is more than that of diversified hardware platform providers (e.g., Nintendo, Sony).

5.2. Sample Selection and Data Sources

This paper chooses the five most representative game enterprises listed on the Tokyo Stock Exchange (TSE): Nintendo (7974.T), Sony Group (6758.T), Capcom (9697.T), Square Enix (9684.T) and Sega Sammy (6460.T). For hardware, I will choose consoles from Nintendo and Sony for study; for software, I will select specific new game products from the five game enterprises. The research data for this paper is sourced from Yahoo Finance Japan and the JPX official website. The Nikkei 225 Index (^N225) is chosen as the market benchmark portfolio. The time span of the empirical research extends from January 2017 to December 2025.

5.3. Model Construction

Step 1: Calculate Normal Returns

For each company i, choose the event window ([-10, +10] days) and the estimation window (120 days before the event).

$$R_{it}=\alpha_i+\beta_i R_{mt}+\epsilon_{it} \quad (1)$$

Step 2: Calculate Abnormal Returns (AR)

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Within the event window period [-5, +5], the return is:

$$AR_{it}=R_{it}-(\hat{\alpha}_i+\hat{\beta}_i R_{mt}) \quad (2)$$

Step 3: Calculate Cumulative Abnormal Returns (CAR)

$$CAR_{i(t_1,t_2)}=\sum_{t=t_1}^{t_2} A\,R_{it} \quad (3)$$

Step 4: Statistical Test
Use a t-test to determine if CAR is significantly different from 0:

$$t_{CAR}=\frac{CAR}{\sigma(CAR)} \quad (4)$$

6. Empirical Results and Analysis

This paper chose 7 game software titles (Resident Evil 4 Remake, Splatoon 3, Final Fantasy XVI, Pokemon Legends: Z-A, Street Fighter 6, Like a Dragon: Infinite Wealth, The Legend of Zelda: Tears of the Kingdom) and 3 hardware consoles (PS5, Switch, Switch 2) to conduct empirical research in detail. According to this empirical study, we can feel the great influence of new product releases by Japanese gaming giants on the stock market. The empirical data shows that most sample events generated significant cumulative abnormal returns during the release window. It proves the semi-strong market hypothesis for the Japanese gaming capital market, which means the market can capture signals released by product launches quickly and respond to them.

The market in the area of software products that are closely related to the games themselves showed a fanatical search for high quality game content. Using Capcom as an example, its Resident Evil 4 Remake, which came out in 2023, completely dispelled doubts about "rehashing old content" (stirring cold rice) because of its critically - acclaimed remake quality. During the event window, it directly caused the stock price to generate a cumulative abnormal return of up to 8. 42%, with very high statistical significance, making Capcom's stock price reach a historical high at that time. The fighting masterpiece Street Fighter 6, released by Capcom in the same year, also achieved a positive return of 6. 15%. The consecutive success of these two products proved to the market the stability of Capcom's returns on new games. In the same way, Nintendo's national - level shooter Splatoon 3 generated an abnormal return of 5. 80% during its release window. This success is largely due to its record - breaking first - week sales. When we look at The Legend of Zelda: Tears of the Kingdom, even though it faced the great pressure of its predecessor's historic success and carried the expectations of countless players, it had a steady growth of 4. 50% relying on its whimsical innovation and impeccable reputation. These data strongly show that in the relatively mature Japanese gaming capital market, the impact of new game product releases on the stock market is usually connected to the quality of the software itself. The market is certainly ready to pay for "guaranteed hits"; thus, the continuous output of high - quality new games is the main path for listed game companies to get excess returns.

The cruelty of the capital market is, however, that its response tends to be asymmetrical; i.e., punishment of failure is much more severe than reward of success. A negative example can be

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thought-provoking such as Final Fantasy XVI which was released by Square Enix in 2024. Even though the title based on a Japanese national IP had reasonable absolute sales during the initial phases of release, the capital market had already overestimated it as the PS5 Savior. As soon as the product demonstrated lack of stamina and serious optimization problems, the mood in the market changed quickly. The incident led to an extreme draw down of -12.30% within the window period. This fall has an absolute value of nearly twice the increase of successful products at the same level, which is attributed to the loss aversion trait in behavioral finance when a well-established manufacturer does not deliver on the big pie (grand promises) it painted, the market vents its disappointment through valuation crushing. The problem of expectation discrepancy along the time dimension was introduced in the promotion and distribution of Pokemon Legends: Z-A. In early 2024, the title came out with an unsatisfactory concept CG and declared a release date way back in 2025. Then, in the short term, its stock price dropped by 2.80 percent and the sentiment of the market turned gloomy. It did not happen until the official release of Pokemon Legends: Z-A in October 2025 that the stock price experienced a certain recovery, increasing by 5.45%. Such a V-shaped pattern of decline first and rise later shows that the value of long-term promises without high-quality physical support is easily discounted to a great extent because of time discounting problems.

In the hardware sector, when we look back at the release of the Sony PS5 in 2020, the product itself had technological innovations and was even called a "next - generation console". But it coincided with a global semiconductor supply chain crisis. Market expectations for shortages were severe, so there was a cumulative abnormal return of -2.10% during the event window. When considering the highly anticipated Nintendo Switch 2, it got only a 3.50% positive feedback during the launch event window, much less than the original Switch's explosive power. In comparison to the "decisive" market reaction to game software products, the market response generated by hardware console launches is more complex and affected by uncertain factors such as the global supply chain. Without disruptive interactive innovation, new hardware releases are an essential way to keep the game ecosystem going, rather than a new engine for a surge in corporate market value.

7. Conclusion

This paper has done an empirical study of the common happenings in the Japanese game industry and established that the processing of information about game products in the Japanese capital market is usually consistent with the Semi-Strong Efficient Market Hypothesis. Nonetheless, it has emotional prejudices and structural disparities in its internal operational logic. The essence of short-term stock price movements is the hard quality of flagship software products, but a severe punishment mechanism is applied to those products that do not live up to expectations, which constitutes an asymmetrical reaction pattern. Also, corporate heterogeneity was completely represented in the research; pure game manufacturers concentrating on content development have more elastic stock prices than comprehensive giants with diversified businesses affected by hardware cycles when facing single hit product events.

Only by reinforcing expectation management prior to release, making sure that product quality is highly congruent with promotional claims and reasonably regulating the release rhythm so as not to put pressure on stock prices during long waiting periods because of early consumption of expectations can managers of game companies stand firm in the capital market. For investors, it is important to know the risk-return characteristics of various kinds of game enterprises. Paying attention to the early lifting of media scores and the supply chain situation of hardware releases will, in most cases, better allow them to get a hold of opportunities for excess returns.

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