International Journal of World Economic Research
ISSN: 3080-9886 (Print), ISSN: 3080-9894 (Online) | Vol. 1, No. 2, 2026

Research on the Spring Festival Effect and Market Efficiency of the Shanghai Composite Index

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Abstract: To examine the efficiency of Chinas stock market, this study employs the Efficient Market Hypothesis as its theoretical framework. Using daily closing price data of the Shanghai Composite Index from January 1.2008 to September 30.2024 we construct a GARCH (1,1)-M model to empirically test the return characteristics of the three days before and after the Spring Festival. The findings reveal a significant pre-Spring Festival effect in the SSE Composite Index, while the post-Spring Festival effect is insignificant. This result indicates that publicly available calendar information can predict short-term returns, challenging the weak-form efficient market hypothesis. It provides empirical evidence that Chinas stock market has not yet fully achieved weak-form efficiency, offering insights into market pricing efficiency.

Keywords: Spring Festival effect; Market efficiency; Shanghai Composite Index; GARCH model.

1. Introduction

1.1. Research Background

In 1970, renowned American economist Eugene Fama proposed and refined the Efficient Market Hypothesis (EMH) by building upon prior research. Subsequently, finance theory grounded in EMH evolved into classic frameworks such as portfolio theory and the Capital Asset Pricing Model (CAPM), collectively forming the standard theoretical framework of modern finance and serving as the theoretical foundation for contemporary finance and investment studies.

However, since the 1980s, researchers have observed numerous financial anomalies in markets: instances where actual asset returns deviate from predictions of the Capital Asset Pricing Model and the Efficient Market Hypothesis. The underlying principles behind these anomalies proved difficult to explain using traditional financial theories. This prompted skepticism about the efficient markets described by the EMH, as these phenomena suggested prices did not follow a random walk, investors were not entirely rational, and financial markets were often inefficient. The existence of these anomalies led academia to re-examine the degree of market efficiency and spurred continuous development in asset pricing theory and empirical methods.

The calendar effect, as a significant market anomaly, refers to the systematic patterns in asset returns observed during specific calendar periods (such as months, days of the week, or around holidays). Among Chinas numerous traditional festivals, the Spring Festival holds paramount importance for its citizens. Examining the development of Chinas stock market reveals that the equity market often exhibits distinct volatility characteristics around the Spring Festival. Consequently, research indicates the existence of a distinct "Spring Festival effect" in Chinas stock market, where stock returns tend to outperform after the holiday. This phenomenon represents a specialized subset of the broader holiday effect. From an investment perspective, if the Spring Festival effect persists and proves predictable, it implies the market falls short of weak-form efficiency. Historical time-series information could then be leveraged to forecast future returns, directly challenging traditional pricing models grounded in the Efficient Market Hypothesis while offering investors a basis for formulating investment strategies.

Given the Spring Festivals sign ificance as a traditional Chinese holiday and its importance in public perception, this paper selects the Spring Festival effect to represent the holiday effect in studying financial anomalies in Chinas stock market. It examines its specific manifestations in Chinas stock market, with the core objective of providing a basis for assessing market efficiency and formulating investment strategies.

1.2. Research Significance

1.2.1. Theoretical Significance

For financial theory research, the existence and manifestation of the Spring Festival effect hold significant implications for testing the Efficient Market Hypothesis. A pronounced Spring Festival effect would suggest that market prices may not follow a purely random walk, challenging traditional efficient market theory.

Studying the Spring Festival effect also allows for further exploration of market participants behavioral patterns. As a unique cultural festival in China, the Spring Festival period may induce changes in investor psychology and behavior. Researching this effect can deepen understanding of behavioral biases under specific cultural contexts—such as the impact of excessive optimism or pessimism on investment decisions—thereby enriching theoretical research in behavioral finance.

1.2.2. Practical Implications

For investors, clarifying the existence and characteristics of the Spring Festival effect can directly guide investment decisions. If a significant pre-holiday effect exists, investors can adjust their portfolios before the holiday to capture excess return opportunities. Institutional investors can optimize the risk-return structure of their portfolios by hedging against market volatility during the holiday period. If the Spring Festival effect manifests as heightened market volatility around the holiday, investors can preemptively adjust positions to reduce risk exposure.

For market regulators, the Spring Festival effect can be leveraged to anticipate market trends and maintain stability, enabling the implementation of corresponding measures.

Should excessive speculation cause abnormal price surges around the holiday, regulators can strengthen oversight to mitigate risks of irrational market volatility.

1.3. Research Methodology

This study employs a combined approach of literature review and empirical research to systematically and rigorously examine the Spring Festival effect on the Shanghai Composite Index and explore its implications for market efficiency in Chinas stock market.

Literature Review Method: By systematically reviewing academic literature and research reports on market efficiency, calendar effects, and the Spring Festival effect in Chinas stock market, both domestically and internationally, this study clarifies the theoretical connection between market efficiency and market anomalies, establishing the theoretical foundation for this research. It also summarizes existing research methods, model settings, and key conclusions regarding the Spring Festival effect, identifying areas of consensus and divergence.

Empirical Analysis Method: Empirical analysis forms the core of this study, aiming to rigorously test the existence, characteristics, and statistical significance of the Spring Festival effect through econometric models. Using daily closing price data of the SSE Composite Index from January 1.2008 to September 30.2024 this analysis examines volatility patterns and regularities in the stock market before and after the Spring Festival. Furthermore, by comparing stock market performance during and outside the Spring Festival period, the study evaluates the impact of the Spring Festival effect on the market.

2. Theoretical Foundations of the

2.1. Efficient Market Hypothesis

Economist Eugene Fama posits that relevant information capable of causing securities price fluctuations is reflected to varying degrees in security prices. The more sensitive and comprehensive the price reaction to information, the closer the price approaches its true intrinsic value. This makes it difficult for investors to achieve risk-free returns, leading prices to stabilize [1].Its core argument is that asset prices fully reflect all available information, and investors cannot achieve excess returns by analyzing historical data.

The Efficient Market Hypothesis is typically categorized into three forms: 1.Weak-Form Efficient Market Hypothesis: Market prices fully reflect all historical price information, rendering technical analysis ineffective; 2. Semi-Strong-Form Efficient Market Hypothesis: Market prices fully reflect all publicly available information, including financial reports and news, making fundamental analysis ineffective as well; 3.Strong-Form Efficient Market Hypothesis: Market prices reflect all information, including insider information, meaning even insiders cannot achieve excess returns.

Despite its significant status in financial theory, the EMH remains highly contested. Research indicates markets are not always efficient, and investors are not uniformly rational—their behavior is often influenced by psychological factors, causing prices to deviate from fundamentals. The EMHs introduction spurred deeper exploration of financial markets, establishing it as a cornerstone of modern financial economics. Though debated, it remains a crucial theoretical framework for understanding price formation and investment decisions.

The core theoretical foundation of this study lies in directly testing whether the Chinese stock market satisfies weak-form efficiency. The Spring Festival effect, as a specific calendar effect, investigates whether systematic, predictable return patterns exist during fixed, foreseeable calendar periods. If empirical results show that stock returns around the Spring Festival significantly differ from other periods and this pattern is statistically robust, such findings would challenge the weak-form efficient market hypothesis.

2.2. Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) was developed in 1964 by American scholars William Sharpe [2] John Lintner [3]and others in 1964, building upon portfolio theory and capital market theory. It primarily examines the relationship between the expected return on assets in securities markets and the risk associated with those assets, as well as how equilibrium prices are formed. As a foundational theory in modern finance that characterizes the equilibrium relationship between risk and expected return, it is widely applied in fields such as investment decision-making.

Its core formula is: $E(Ri) = Rf + \beta i(E(Rm) - Rf)$, where $E(Ri)$ represents the expected return of an asset, Rfis the risk-free rate, βiis the assets systematic risk coefficient, and E(R m) is the expected return of the market portfolio.

The CAPM provides an analytical framework for risk-return matching in this study: the yield divergence around the Spring Festival may represent either an unpriced market anomaly or a rational compensation for changes in systemic risk during the holiday period. The risk premium term ($\gamma\sigma t$) introduced in the GARCH (1,1)-M model extends the application of CAPM. By empirically testing whether the Spring Festival effect correlates with risk changes, this study enriches the investment theory foundation of the model.

2.3. Behavioral Finance

Anomalies inconsistent with the Efficient Market Hypothesis are prevalent across major global securities markets. Stock prices often exhibit persistent, systematic deviations from intrinsic value, manifesting characteristic features such as leptokurtic return distributions, volatility clustering, long-memory effects, and leverage effects [4].These recurring phenomena in real markets starkly contrast with the classical financial models assumptions of "independent and identically distributed (i.i.d.)" and "normally distributed" conditions, thereby undermining the explanatory power and practical applicability of the Efficient Market Hypothesis.

Confronted with the limitations of classical finance in explaining numerous market anomalies, behavioral finance incorporates heterogeneous investments—including investor behavior patterns, decision-making approaches, and psychological traits—into its analytical framework [5]. By examining asset price formation mechanisms through the lens of investors bounded rationality and psychological factors, it seeks to provide more realistic explanations for market anomalies.

As a significant supplement to traditional efficient market hypotheses and rational pricing models, behavioral finance systematically examines how psychological factors and cognitive biases influence investor decision-making, leading to various predictable anomalies in financial markets. It does not entirely reject traditional theories but broadens the theoretical foundation for exploring market mechanisms by incorporating assumptions about human behavior that better

align with reality.

3. Literature Review

3.1. Research on the Festival Effect

Domestic scholars have conducted extensive empirical explorations of Chinas unique Spring Festival effect, yet conclusions regarding its existence, direction, and causes remain inconsistent. This inconsistency precisely highlights the research value and necessity for in-depth exploration in this field.

Guo Danyang (2024) used the daily closing prices of the SSE Composite Index, SZSE Composite Index, CSI 300, Small and Medium Enterprise Board, and ChiNext Index as research data, employing a stochastic volatility model [6]; Wang Jingjing (2024) selected the return of the CSI 300 Index as research data, using a GARCH(1,1)-M model with dummy variables [7]; Wang Xinyue (2020) used the return of the SZSE Component Index as research data and also employed a GARCH(1,1)-M model [8]. They all reached the same research conclusion: there is indeed a significant holiday effect on returns in the Chinese stock market around holidays, and the holiday effects vary significantly across different holidays.

Zhang Guangzhong (2024) established a GARCH (1,1) model using Shanghai Composite Index return data, concluding that the index exhibits a Spring Festival effect. Additionally, analyzing ten primary sector indices revealed that Spring Festival effects vary across sectors and that the post-holiday effect is stronger than the pre-holiday effect [9].

Yu Fu (2022) employed Shanghai Composite Index return data as samples. Using a GARCH model incorporating dummy variables, the study tested the Spring Festival effect on traditional Chinese holidays. Results revealed that the A-share market exhibits not only a pre-Spring Festival effect but also a post-Spring Festival effect. Furthermore, the Spring Festival effect is pronounced in both bull and bear markets [10]. Xiang Mingfang (2022) employed closing prices of the SSE Composite Index and CSI 300 Index as sample data. Using ARMA (3,5) and ARMA (5,3) models incorporating dummy variables, the study concluded that both the CSI 300 Index and SSE Composite Index exhibit a pronounced pre-holiday effect, while the post-holiday effect is insignificant [11].

Over the past century, numerous scholars both domestically and internationally have conducted in-depth research on the holiday effect. In this field, Western countries pioneered investigations into the stock market holiday effect. To date, extensive literature has focused on the causes and effects of the holiday effect within stock markets.In 1934, Field first introduced the concept of the "holiday effect." Through analysis of extensive sample data, he discovered that stock returns in the U.S. market were significantly higher during holidays preceding market closures compared to other periods, indicating a pronounced pre-holiday effect in the U.S. stock market[12] .

Pengcheng Z, Kunpeng X, Jian H (2024) and other scholars investigated the holiday effect in the cryptocurrency market using fixed-effects models based on trading data from the top 100 cryptocurrencies by market capitalization on Coinmarketcap.com. Results indicate that cryptocurrency returns significantly increase during Chinese holidays [13] .

Fasubaie M (2023) examined the holiday effect in foreign exchange markets, specifically for the US dollar and British pound. Empirical results indicate that pre-holiday returns are negative and significant, contradicting other scholars findings of positive pre-holiday effects [14].

Khanh D P and Nhuong H D T (2020) examined the holiday effect in stock reurns using the Vietnamese stock market as a case study. Findings revealed that during the 2002-2018 period, high stock returns were observed in the lunar month preceding the Lunar New Year, with pre-holiday stock returns typically exceeding those following the Lunar New Year [15].

3.2. Research on the Relationship Between the Festival Effect and Market Efficiency

Deng Cheng (2016) employed the ARMA-GARCH model to test for the existence of the holiday effect in Chinas stock market. The study found that Chinas stock market exhibits not only the pre-holiday effect already confirmed in foreign markets [16], but also a post-holiday effect absent in foreign markets. Significant variations in the holiday effect were observed across different holidays, suggesting that market inefficiency is the fundamental cause of various market anomalies.Scholars Qiao Guorong, Mao Jingning et al. (2020) observed that the Shanghai Composite Index exhibits a more pronounced calendar effect compared to internationally representative indices. They attribute this phenomenon not only to factors like pre-holiday investor optimism and year-end bonus inflows into the market but also to the markets failure to achieve weak-form efficiency [17].

Zhong Mingwei (2023) examined holiday effects using the Spring Festival and National Day holidays as subjects. Employing daily returns from the CSI 300 stock and index futures markets as empirical data, the study utilized an EGARCH model capable of simulating volatility clustering and asymmetry effects. A dummy variable representing holidays was incorporated to investigate the existence and persistence of holiday effects [18].The findings confirm the existence of the holiday effect, with abnormal returns indicating that investors do not rationally evaluate asset prices as depicted by the Efficient Market Hypothesis, thus revealing low market efficiency.

Zhang Bing (2024) separately examined Chinas two major stock markets—the Shanghai Composite Index and Shenzhen Composite Index—based on different holidays. Findings reveal significant holiday effects in both markets, with the Shenzhen Composite exhibiting stronger effects than the Shanghai Composite [19] . The holiday effect in the SSE Composite Index manifests more as a post-holiday effect. The existence of the holiday effect and other market anomalies constitutes a strong challenge to the Efficient Market Hypothesis.

4. Data and Model Design

4.1. Data and Holiday Selection

In December 2007, the State Councils revised "Measures for National Holidays and Memorial Days" formally designated traditional festivals such as Spring Festival, Qingming Festival, Dragon Boat Festival, and Mid-Autumn Festival as statutory holidays, marking the standardization of Chinas holiday system. Therefore, this study utilizes the RuiSi database to select closing price data for the SSE Composite Index from January 1, 2008, to September 30, 2024, spanning 17 years as the research sample. With 2008 serving as the starting point to avoid structural interference from institutional changes in identifying holiday effects. The

extended time span enhances the credibility of verifying whether a Spring Festival effect exists in Chinas stock market, encompassing multiple complete economic cycles and market phases. This approach improves the robustness and universality of research conclusions, mitigating the influence of abnormal market fluctuations during specific periods.

As society evolves, the significance of many holidays has gradually diminished. Yet the Spring Festival, a traditional Chinese festival, remains the most important and influential. Selecting it for verification ensures representativeness.

4.2. Construction of Return Indicators

Before conducting model tests to determine the existence of the Spring Festival effect in stock market data, preliminary processing of the sample data is required. In investment studies, log returns exhibit time additivity, aligning more closely with the assumptions about returns in financial theory. Therefore, this paper applies log-differencing to the daily closing price series to calculate daily log returns, using the following formula:

$$Rt = (\ln(P) - \ln(Pt\text{-}1)) * 100 \quad (1)$$

Where Ptdenotes the closing price on day t; Pt-1denotes the closing price on day t-1. This paper uses data from the three days before and after the Spring Festival to verify the pre- and post-Spring Festival effects, respectively.

4.3. Stationarity Test

For non-stationary time series, direct regression analysis may lead to spurious regression. To avoid this, time series data must be tested for stationarity in terms of returns. If no unit root is detected, the sample data is considered a stationary series and can be further analyzed.

This paper employs the ADF method to test the stationarity of the data, with results shown in Table 1:

Table 1. ADF Test Results

Test Item	Statistic/Critical Value	P-value
ADF Test Statistic	-62.3396	0.0001
Critical Value		
1% Level	-3.4318	
5% Level	-2.8621	
10% Level	-2.5671	
Conclusion	Reject the null hypothesis; the series is stationary	

As shown in Table 1, the test P-value is 0.0001, which is less than the critical values for unit root tests at all significance levels. Therefore, the null hypothesis is rejected, indicating that the sample data does not contain a unit root. The collected data constitutes a stationary sequence suitable for further analysis and research.

4.4. ARCH Effect Test

Previous studies have predominantly employed least squares or linear regression models to examine holiday effects, but these methods generally yield suboptimal simulation results and fail to adequately capture the characteristics of time series data. To achieve better fitting performance, this study employs GARCH family models for testing. The prerequisite for using GARCH family models is that the data must be non-normally distributed and represent a stationary time series to obtain reliable results. Additionally, all GARCH family models require the presence of an ARCH effect in the data to be applied, necessitating a separate ARCH effect test on the sample sequence.

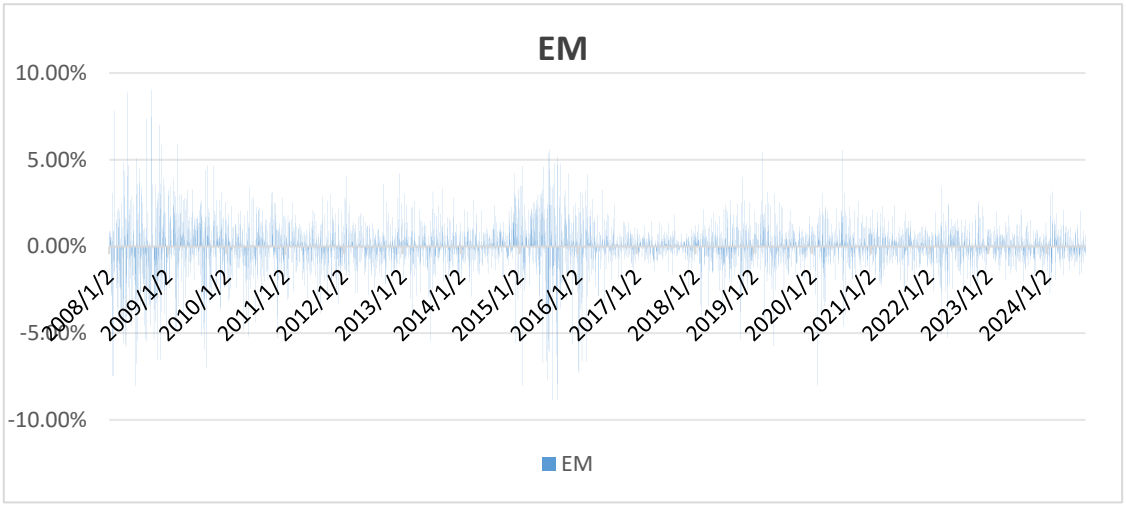

Figure 1. Residual Series Plot of Sample Data

Table 2. ARCH Heteroskedasticity Test Results

Test Statistic	Statistic	P-value	Conclusion
F Statistic	171.2838	0.0000	Reject null hypothesis
LM Statistic (Obs*R-squared)	164.4035	0.0000	Reject null hypothesis

Figure 1 reveals that the residual sequence exhibits persistent fluctuations with pronounced clustering, indicating significant heteroskedasticity in the treated return data. To obtain more precise results, further ARCH-LM testing is necessary.

The ARCH-LM test is a Lagrange multiplier test that examines whether an ARCH effect exists in the residual series of a model. The null hypothesis of this test states that no ARCH effect exists in the residual series up to order p.

Further results from the ARCH-LM tests (Tables 2 and 3) indicate that the null hypothesis of no ARCH effect is rejected at the 1% significance level, confirming the presence of conditional heteroskedasticity in the series. This implies that market risk is time-varying. This study aims to examine whether abnormal returns exist around the Spring Festival. Ignoring the ARCH effect may lead to non-efficient

parameter estimation or biased standard errors, thereby affecting the correct judgment of the significance of the Spring Festival effect. Therefore, adopting a GARCH-type model is a necessary choice to ensure rigorous empirical results and reliable conclusions.

Table 3. ARCH Test Equation Regression Results

Variable	Coefficient	Standard Error	t-Statistic	P-value
Constant term (C)	0.000170	9.64E-06	17.58468	0.0000
RESID^2(-1)	0.201602	0.015404	13.08754	0.0000
R2	0.040644			
F-statistic	171.2838			
Probability of F-statistic	0.0000			

4.5. Model Design

The selected data exhibit volatility clustering and fat-tailed spikes. Literature review indicates that the GARCH (1,1)-M model effectively addresses these characteristics. Thus, this study employs a GARCH (1,1)-M model incorporating dummy variables to explore the holiday effect in Chinas stock market. The model is specified as follows:

$$R_t=\varpi+\gamma\sigma_t+\mu_t+\varphi D_k \text{(Mean Equation)} \quad (2)$$

$$\sigma_t^2=\alpha_0+\alpha_1\mu_{t-1}^2+\beta_1\sigma_{t-1}^2 \text{(Variance Equation)} \quad (3)$$

Where Rtrepresents the return of the Shanghai Composite Index on day t; σ²tdenotes the conditional variance at time t; γσtis the risk premium. According to relevant theory, expected returns should be positively correlated with expected risk. If the dummy variable for the Spring Festival remains significant after controlling for the risk premium, it indicates that abnormal returns are more likely attributable to market inefficiency rather than rational risk compensation.

μtis the residual term. ω, γ, α0, α1, β1 are model parameters. k=1,2: k=1 for the three days before the Spring Festival, Dk=1, otherwise Dk=0; k=2 for the three days after the Spring Festival, Dk=1, otherwise Dk=0.The core innovation of this study is the introduction of dummy variables D1(pre-holiday) and D2(post-holiday) into the mean equation. The coefficient φ directly measures whether statistically significant abnormal returns exist during the specific Spring Festival window period after controlling for market-specific time-varying risks and risk premiums. If φ is significantly non-zero, it implies that returns can be forecasted based on the publicly available historical information of the Spring Festival timing, challenging the weak-form efficient market hypothesis.

5. Empirical Analysis

5.1. Descriptive Statistics of Sample Data

This paper conducted descriptive statistics on the daily returns of the Shanghai Composite Index during the market sample period and the three trading days before and after the Spring Festival. The results are as follows:

Table 4. Descriptive Statistics of the SSE Composite Index

Time Period	Sample Size	Mean	Standard Deviation	Return Multiplier	Volatility Multiplier
All Trading Days	4052	-0.015	1.459	1	1
Three trading days before the Spring Festival	51	0.427	1.510	-28.467	1.035
Three trading days after the Spring Festival	51	0.369	1.684	-24.6	1.154

Table 4 presents the descriptive statistics for the sample data in this paper. As shown in Table 4: the average daily return for all trading days is negative at -0.015, with a standard deviation of 1.459. Both the return multiplier and volatility multiplier are 1, serving as benchmark data for comparison with other time periods.

In contrast, the average daily returns for the three days before and after the Spring Festival were not only positive but also significantly higher than the negative average of the entire sample period. This phenomenon challenges the weak-form efficient market hypothesis. According to the weak-form efficient market hypothesis, asset prices should follow a random walk, and no systematic excess returns can be obtained from predictions based on historical time series, including date information. However, the data clearly shows that during the fixed and predictable calendar period of the Spring Festival, the market exhibits a persistent positive return pattern. This suggests that historical date information may contain predictive value that has not been fully absorbed by prices.

The Spring Festival effect typically refers to specific patterns observed in stock markets around the Spring Festival period, such as higher returns and distinct changes in volatility. Data analysis suggests a preliminary indication of the Spring Festival effect in Chinas stock market: average returns around the Spring Festival are significantly higher than the average returns across all trading days. This data pattern aligns with the Spring Festival effect, implying that stock markets may exhibit positive performance around the holiday. Investors may be more inclined to buy stocks during this period, driving up share prices and thereby increasing returns. Market volatility increases to some extent both before and after the Spring Festival. This may be due to changes in trading behavior among market participants during this period, such as some investors repositioning their portfolios after the holiday, leading to shifts in market volatility. This also aligns with the market volatility characteristics potentially associated with the Spring Festival effect.

5.2. Testing the Spring Festival Effect

The regression results of the GARCH (1,1)-M model in Table 5, after strictly controlling for volatility clustering and time-varying risk premiums in financial time series, reveal that the coefficient of the dummy variable D1 (three days before the Spring Festival) is significantly positive at the 1% significance level. This indicates the existence of a pre-holiday effect in the stock market. Within the investment framework, the weak form of the Efficient Market Hypothesis (EMH) posits that current prices fully reflect all historical information (including past prices and trading volumes), precluding investors from achieving systematic excess returns through historical analysis. The constructed GARCH (1,1)-M model controls for time-varying market risk via the risk premium term γσt. Under these conditions, the significance of D1 indicates that this publicly available calendar information—the period preceding the Spring Festival—still possesses significant predictive power for stock index returns. Investors constructing strategies based on this known historical temporal information can statistically achieve excess returns that cannot be explained by concurrent

market risk. This contradicts the conclusion of the weak-form EMH that security prices fully reflect all historical information, providing empirical evidence that the Shanghai Composite Index market has not yet reached weak-form efficiency.

Table 5. Model Parameter Regression Results

Parameter	Coefficient	z-Statistic	Prob.
D1	0.0061	5.9335	0.0000
D2	0.0021	1.4466	0.1480

In contrast to the pre-holiday effect, the coefficient for D2—the dummy variable representing the three days following the Spring Festival—is not statistically significant (p=0.1480). This may stem from heightened uncertainty following the extended holiday, as markets confront fresh macroeconomic data, policy developments, and a surge of domestic and international information. As shown in Table 4, post-holiday volatility rises significantly. Higher risk premium demands may offset any potential gains from lingering holiday sentiment, rendering net abnormal returns statistically insignificant.

The pronounced pre-holiday effect itself may attract some rational investors or arbitrageurs to engage in anticipatory trading. By positioning before the holiday and realizing profits afterward, such arbitrage activities help correct potential temporary pricing distortions post-holiday, thereby compressing the observable window for abnormal returns.

In summary, this empirical study concludes that the Shanghai Composite Index exhibits a pronounced Spring Festival effect, with the pre-holiday effect being significantly stronger than the post-holiday effect.

6. Research Conclusions and Outlook

6.1. Research Findings

Building upon the Efficient Market Hypothesis as its theoretical foundation, this paper constructs a GARCH (1,1)-M model. By controlling for market-specific time-varying risk and risk premiums, it conducts a systematic empirical examination of the existence, characteristics, and relationship with market efficiency of the Spring Festival effect using daily return data from the Shanghai Composite Index spanning 2008 to 2024.Key findings are as follows: The SSE Composite Index exhibits a pronounced Spring Festival effect, with the pre-holiday effect being significantly stronger than the post-holiday effect.

The empirical results confirm a significant pre-holiday effect, challenging the weak-form efficient market hypothesis. Tests using the GARCH (1,1)-M model indicate that, even after controlling for return volatility clustering and risk-adjusted premiums, statistically significant positive abnormal returns persist during the three trading days preceding the holiday. This suggests that the public, predictable calendar information of the approaching holiday retains predictive power for near-term stock price movements. According to the weak-form efficient market theory, all historical information should be fully incorporated into current pricing, leaving investors unable to generate excess returns. In contrast, the abnormal returns during the three trading days after the Spring Festival failed to pass the significance test, indicating that the post-Spring Festival effect lacks statistical robustness within the sample period.

The findings of this study suggest that Chinas A -share market, represented by the SSE Composite Index, has not yet achieved full weak-form efficiency, indicating deficiencies in information absorption and pricing efficiency.

Around the Spring Festival, the market faces cyclical shifts in macroeconomic policy uncertainty, liquidity conditions, and investor risk appetite. The observed pre-holiday abnormal returns may partially reflect a temporary increase in risk premiums demanded by the market to account for potential systemic risks during this period. However, since the GARCH-M model partially controls for time-varying risk, these abnormal returns more likely point to underpriced risk factors or market inefficiencies.

The existence of the pre-Spring Festival effect fundamentally stems from the markets inefficient pricing of information regarding changes in capital supply and demand, trading behavior, and other factors around the holiday. Before the holiday, factors like year-end bonuses entering the market and institutional positioning for the coming year inject incremental capital. The markets delayed pricing of such seasonal capital flows prevents stock prices from immediately reflecting intrinsic value, thereby generating excess returns. After the holiday, new information—such as macroeconomic data and policy developments—disrupts the pre-holiday equilibrium of capital and sentiment. The original seasonal patterns are overridden by this influx of information, making the post-holiday effect difficult to sustain.

Behavioral finance offers an explanation for the Spring Festival effect: As one of Chinas most significant traditional festivals, the Spring Festival carries profound cultural significance and social influence. During this period, activities like family reunions and gatherings among friends and relatives create a pervasive festive atmosphere throughout society. This collective sentiment significantly impacts investors psych ological state, manifesting as heightened optimism and stronger purchasing intent. The pre-holiday effect stems from the joyful anticipation as the festival approaches, elevating investor sentiment and influencing investment behavior. The post-holiday market trend is an extension of the pre-holiday trend; whether the market rises or falls after the holiday is typically reflected in the last few days of trading before the holiday. In other words, the post-holiday effect is determined by the pre-holiday effect and cannot exist independently.20] .

The distinctiveness of the Spring Festival effect lies in its deep cultural roots, broad societal influence, and the complex psychological and behavioral shifts it triggers. Compared to Western holidays like Christmas or Thanksgiving, the Spring Festival possesses unique cultural connotations and social significance. These factors collectively shape the Spring Festival effect, a phenomenon specific to Chinas stock market.

6.2. Research Limitations This study

Although this study strives to validate the existence and investment significance of the Spring Festival effect through rigorous model design and long-term sample verification, it inevitably has research limitations that provide directions for future improvements:

This study focuses solely on the Shanghai Composite Index, excluding other market indices such as the Shenzhen Component Index, ChiNext Index, and STAR Market Index. It also does not extend to the individual stock level. Consequently, the conclusions may not fully represent the characteristics of the Spring Festival effect across the entire market. Differences in investor structure and capital liquidity

across various market tiers may lead to heterogeneity in the strength and manifestation of the Spring Festival effect, potentially affecting the universality of the findings.

While the GARCH (1,1)-M model employed in this study effectively captures volatility clustering and risk premiums, it excludes additional control variables such as macroeconomic indicators and market liquidity metrics. This omission may overlook other factors influencing returns. Furthermore, varying window lengths may influence the test results. The setting of the holiday window (three days before and after) carries some subjectivity. While consistent with some literature, this window length may not fully capture the entire dynamics of the Spring Festival effect. Whether the effect exhibits longer lead or lag periods, and its specific distribution pattern within the window, requires more detailed segmented testing.

This study focuses on testing the existence of the effect and market efficiency, without delving into the causal mechanisms behind the Spring Festival effect. It lacks an empirical decomposition of specific causes, such as capital flows or institutional behavior. Future research could utilize more granular data to further identify the drivers of this effect.

6.3. Future Prospects

Future research could expand the sample scope to include different market indices such as the CSI 300, CSI 500, and ChiNext Index, as well as primary industry indices. This would analyze variations in the Spring Festival effect across different market tiers and industries. Through segmented studies, researchers could identify whether the effect exhibits sector rotation patterns, providing investors with more precise sector allocation strategies. Such research would also validate whether the Spring Festival effect represents a systemic pricing bias across the entire market or structural opportunities specific to certain industries.

High-frequency data such as intraday trading activity or capital flow data, combined with investor structure analysis, could also be utilized to more precisely identify changes in market participants trading behavior around the Spring Festival period. Particular attention should be paid to behavioral differences between institutional and retail investors, providing micro-level evidence for the causes of the Spring Festival effect.

Furthermore, as Chinas capital markets deepen their opening to the world, future research could compare the holiday effect characteristics of major international indices. This would analyze whether the Spring Festival effect represents a uniquely Chinese investment opportunity, providing cross-market arbitrage references for global investors while expanding the studys international perspective and application scenarios.

Future research could integrate macroeconomic variables, liquidity indicators, and policy factors to construct a multifactor model. This would isolate the independent and interactive effects of various factors on pre- and post-Spring Festival returns, clarifying the core transmission mechanism of the Spring Festival effect.The "Spring Festival effect" dummy variable could be incorporated into Fama-Frenchs three-factor or five-factor models to test whether this abnormal return can be explained by known risk factors. This would help rigorously distinguish whether the effect represents an unpriced anomaly or a rational compensation for some unidentified systemic risk exposure.

In summary, as a prominent calendar anomaly in Chinas stock market, the Spring Festival effect provides crucial empirical insights into market efficiency. Future research should further elucidate its implications for asset pricing and market practice through more refined model specifications, broader sample coverage, and deeper mechanism analysis.

References

[1] EUGENE F FAMA. Efficient capital markets: a review of theory and empirical work [J]. The Journal of Finance, 1970, 25(2).

[2] SHARP W F. Capital asset prices: a theory of market equilibrium under conditions of risk [J]. Journal of Finance, 1964, 19(3): 425-442.

[3] LINTNER J. The valuation of risky assets and the selection of risky investments in stock portfolios and capital budgets[J]. The Review of Economics and Statistics, 1965, 47(1):13-37.

[4] Sanford Grossman , Robert J. Shiller . The Determinants of the Variability of Stock Market Prices[J]. American Economic Review , 1981, 71(2):222-27.

[5] Hu Zhihao, Liu Qian. Behavioral Finance Explanation of Market Volatility Anomalies Under Heterogeneous Agents: A Computational Finance Approach [J]. Economic Dynamics, 2022, (07):90-108.

[6] Guo, Danyang. The Holiday Effect on China's Stock Market: An Analysis from the Perspectives of Returns and Volatility [J]. Shanghai Business, 2024, (05):45-47.

[7] Wang Jingjing. The Impact of Holiday Effects on Stock Returns: Evidence from the CSI 300 Index [J]. Business Exhibition Economy, 2024, (17):126-130.

[8] Wang Xinyue. Empirical Analysis of the Holiday Effect in China's Stock Market Based on the Shenzhen Component Index [J]. National Circulation Economy, 2020, (24):144-146.

[9] Zhang Guangzhong. Testing the Spring Festival Effect in the Shanghai Stock Market After the Financial Crisis [J]. E-Commerce Review, 2024, 13(3):5128-5135.

[10] Yu Fu. Testing the Spring Festival Effect in China's A-Share Market [J]. Journal of Economic Research, 2022, (14):122-125.

[11] Xiang Mingfang. Empirical Study on Pre- and Post-Spring Festival Effects in the Stock Market [J]. Journal of Economic Research, 2022(20):66-68.

[12] Zhuang Shenyun. Research on the Holiday Effect in China's Stock Market Based on the Shanghai Composite Index [J]. Gansu Science and Technology, 2019, 35(16):116-120.

[13] Pengcheng Z, Kunpeng X, Jian H, et al. Investor sentiment and the holiday effect in the cryptocurrency market: evidence from China [J]. Financial Innovation, 2024, 10(1):1-36.

[14] Fasubaie M. The Calendar Effect of Currency: An Empirical Study on the Foreign Exchange Market[J]. Journal of Global Economy, Business and Finance, 2023, 5(11): 41-46.

[15] Khanh D P, Nhuong H D T. A Re-examination of the Holiday Effect in Stock Returns: The Case of Vietnam[J]. Edelweiss Applied Science and Technology, 2020, 4(1): 51-55.

[16] Deng Cheng. An Empirical Study on the Holiday Effect in China's Stock Market[J]. Times Finance, 2016, (03):115-116.

[17] Qiao Guorong, Mao Jingning, Ma Yao. A Brief Analysis of the Calendar Effect in the Shanghai Composite Index [J]. Finance and Economics, 2020, (09): 56-64.

[18] Zhong Mingwei. Empirical Study on Market Efficiency Based on the Holiday Effect of CSI 300 Index [D]. Tianjin University of Technology, 2023.

[19] Zhang Bing. Research on the Holiday Effect in China's Stock Market [D]. Shanghai University of Finance and Economics, 2022.

[20] Liang Zixian, Liang Qing. Empirical Exploration of the Holiday Effect in China's Stock Market [J]. Financial World, 2019, (14): 18-19.