# Can a Myth Move Markets? Blue Monday and Investor Behavior in the UK Equity Market
# Or: Can Narratives Shape Investor Behavior? Evidence from Blue Monday in the UK Equity Market.

**EVANGELOS VASILEIOU**
*Hellenic Mediterranean University*

This paper examines whether the publicization of the "Blue Monday" concept—the claim that the third Monday of January represents the most depressing day of the year—is associated with differences in financial market behavior. Using daily price and trading volume data for the FTSE 100 index from January 1999 to January 2026, we examine whether this psychologically salient calendar event is related to stock returns and investor participation. Parametric and non-parametric tests are applied to compare outcomes across trading days, Mondays, and Blue Mondays, and to assess whether market behavior differed following the widespread diffusion of the Blue Monday narrative after 2005. We find no evidence of a Blue Monday effect on returns: returns on Mondays and Blue Mondays are statistically indistinguishable from those observed on other trading days. In contrast, we identify a statistically significant and consistent pattern in trading activity. Mondays are associated with significantly lower trading volume, with the largest declines occurring on Blue Mondays. This pattern becomes observable only after 2005 and is consistent with an association between the increased public visibility of the Blue Monday concept and changes in investor participation patterns. Given the absence of a formal causal identification strategy, these findings should be interpreted as associative rather than causal. Overall, the results suggest that psychologically salient narratives may become associated with changes in market participation without generating systematic differences in asset pricing.

**Keywords:** Blue Monday; Investor Sentiment; Trading Volume; Calendar Anomalies; Behavioral Finance; Media Effects; Market Participation

**JEL Codes:** G02; G14; G12; D91

## 1. Introduction

In 2005, Cliff Arnall, a psychologist and then a member of the British Psychological Society, proposed that the third Monday of January represents the most depressing day of the year, a notion that later became widely known as *Blue Monday*. To substantiate this claim, Arnall introduced a mathematical formula[1] intended to quantify seasonal and psychosocial factors, including winter weather conditions, post-holiday financial

[1] https://support.theguardian.com/eu/guardian-ad-lite?returnAddress=https%3A%2F%2Fwww.theguardian.com%2Fscience%2F2006%2Fdec%2F16%2Fbadscience.uknews

strain, failure to maintain New Year's resolutions, and the time remaining until the next vacation.

The proposed formula and its underlying assumptions were met with substantial criticism, and the concept of Blue Monday was widely characterized as pseudoscientific. In 2016, Arnall himself publicly withdrew the theory[2].

Despite these criticisms, the concept of Blue Monday has achieved considerable public visibility in recent years. According to Wikipedia pageview statistics and the Google Trends, the interest for the "Blue Monday" is still growing. Furthermore, search and pageview data available since 2015 reveal a recurring seasonal pattern, with heightened public interest during January each year, as illustrated in Figure 1.

This widespread dissemination implies that, regardless of the scientific validity of the theory, an increasing number of individuals are exposed to the claim that the third Monday of January is the most depressing day of the year. Such exposure raises the question of whether this information itself may exert a pessimistic influence on individual behavior. Moreover, if a "Blue Monday" effect does exist, an important related question concerns its potential impact on financial markets-specifically, whether investor sentiment on this date affects stock market behavior.

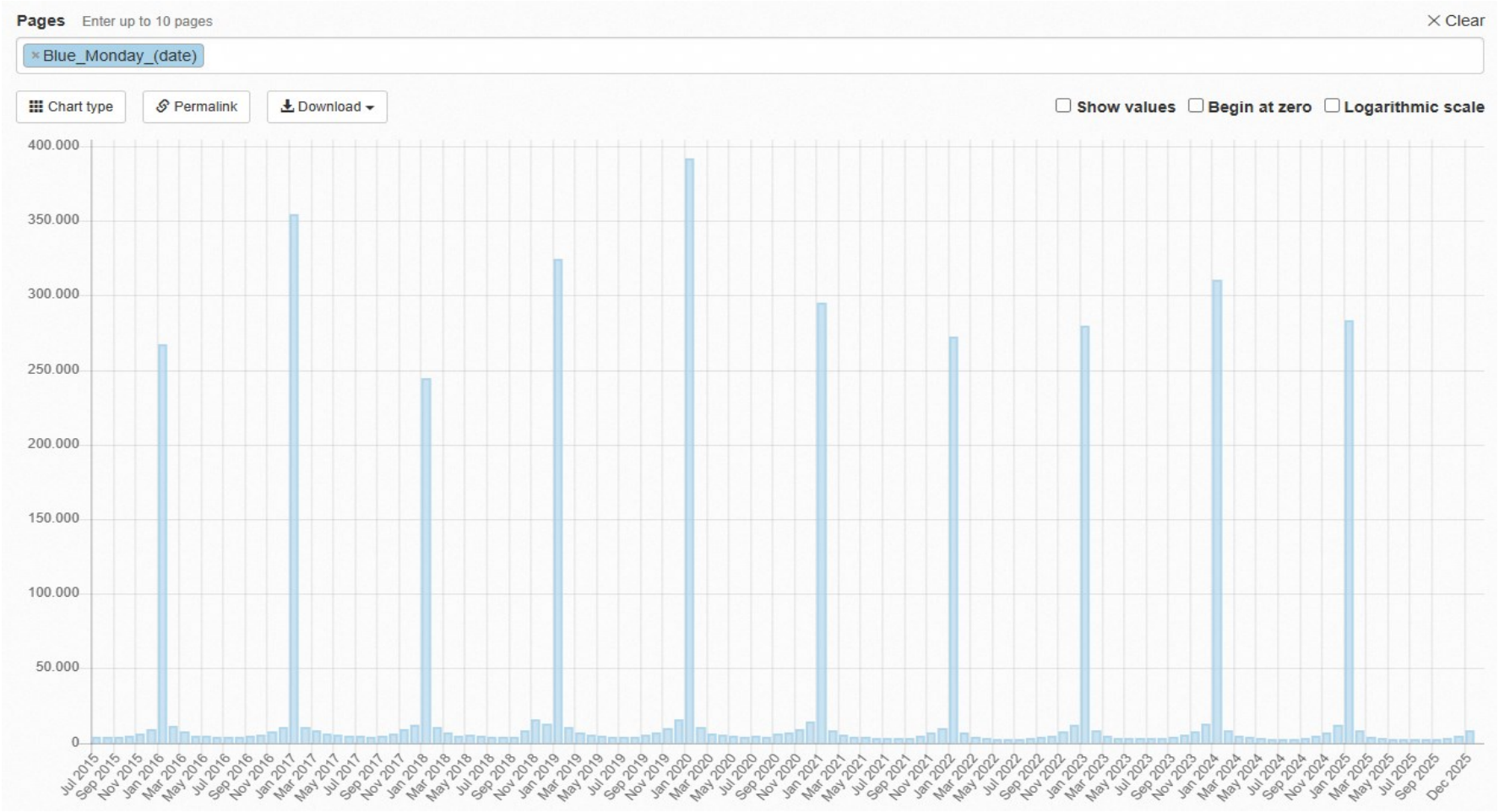
Accordingly, this paper addresses the following research questions: Is the publicization of the Blue Monday concept associated with changes in behavior through sentiment-related or expectation-based mechanisms? If such patterns exist, are they reflected in stock market activity? What does the available empirical evidence reveal regarding these potential associations?

The remainder of the paper is organized as follows. Section 2 presents the theoretical framework and the methodology. Section 3 describes the data and empirical methodology. Section 4 examines the impact of the Blue Monday declaration on investor behavior. Section 5 concludes.

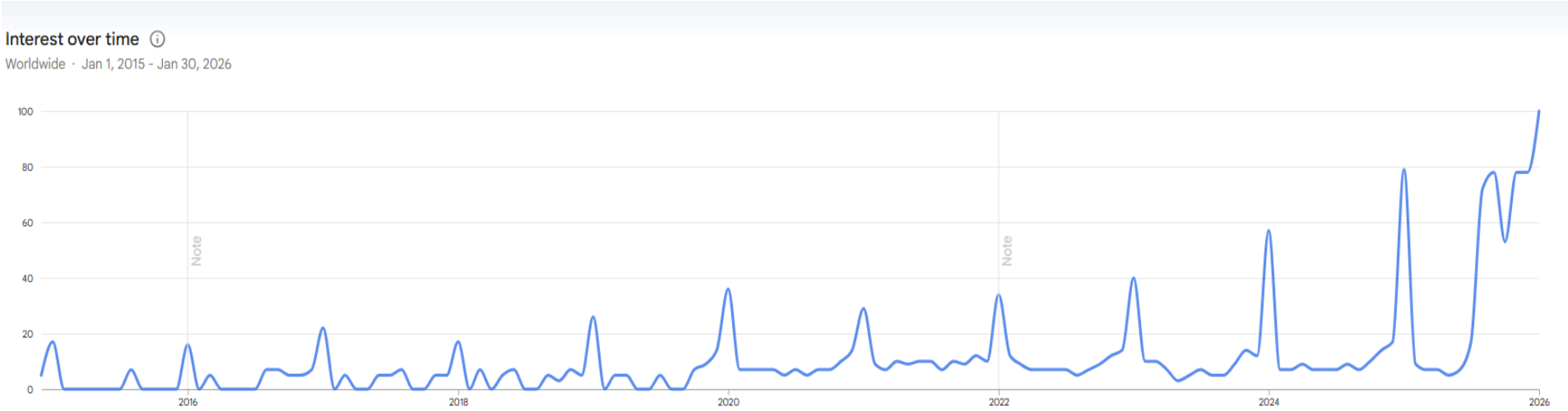
[2] https://www.prnewswire.co.uk/news-releases/cliff-arnall-beats-the-blue-monday-blues-in-the-canary-islands-565578851.html

**Figure 1: Pageviews of the Blue Monday term in Wikipedia and Google trends**

*(a) Wikipedia pageviews per month*



*(b) Google Trends popularity*



## 2. Theoretical Framework and Methodology

The Monday effect, often referred to as the weekend effect, is one of the most extensively studied calendar anomalies in financial markets. Early empirical research documents that average stock returns on Mondays are significantly lower (and frequently negative) relative to other trading days. Seminal contributions by French (1980) and Gibbons and Hess (1981) first identified this pattern in U.S. equity markets, proposing explanations linked to the accumulation of information over non-trading days and shifts in investor sentiment following the weekend. Subsequent studies extended these findings to international markets, confirming the presence of the Monday effect across a wide range of countries, although its magnitude and persistence vary across time and institutional settings.

A comprehensive survey by Pettengill (2003) emphasizes the diversity of explanations proposed in the literature. Behavioral theories attribute the Monday effect to heightened pessimism, lower risk tolerance, or mood-related factors at the start of the week, whereas institutional explanations focus on settlement procedures, short-selling constraints, and the timing of corporate announcements. Importantly, more recent evidence suggests that the traditional Monday effect in returns has weakened or disappeared in many developed markets, particularly since the 1990s. This attenuation has been attributed to increased market efficiency (Schwert, 2003), differences related to firm size and market capitalization (Mehdian and Perry, 2001), and broader financial market trends and structural changes (Vasileiou, 2015), among other factors.

Despite the weakening of return-based anomalies, a substantial body of research documents persistent Monday effects in non-price dimensions of market activity. Numerous studies report significantly lower trading volume on Mondays relative to other weekdays (Fishe, Gosnell, and Lasser, 1993; Foster and Viswanathan,

1993; Chang, Pinegar, and Schachter, 1997; Kiymaz and Berument, 2003; Khan et al., 2023). From a behavioral perspective, trading activity is frequently associated with investor sentiment, as more optimistic market conditions tend to coincide with greater liquidity and higher trading intensity, whereas pessimistic sentiment is often accompanied by lower market participation (Liu, 2015). Accordingly, prior studies have employed trading volume as an indirect proxy for investor sentiment and risk expectations (Yang and Zhou, 2015; John and Li, 2025).

However, the interpretation of trading volume as a direct measure of sentiment requires caution. Trading activity is influenced not only by psychological factors, but also by liquidity needs, institutional trading behavior, and broader market microstructure characteristics. Consequently, changes in trading volume should not be interpreted as a direct measure of investor sentiment itself, but rather as reflecting broader patterns of market participation through which sentiment-related mechanisms may operate.

Direct tests of the behavioral foundations of the Monday effect provide further insight. Pettengill (1993) examines the "Blue Monday" hypothesis by comparing investor portfolio allocations on Mondays and Fridays under identical return conditions and finds that investors exhibit greater risk aversion on Mondays, allocating less wealth to risky assets and more to Treasury bills. Gondhalekar and Mehdian (2003) analyze industry-level stock returns and document a widespread and highly correlated Monday effect across industries, consistent with broad-based investor pessimism rather than sector-specific information. In contrast, Jaffe, Westerfield, and Ma (1989) show that negative Monday returns are largely conditional on prior market declines, suggesting that investor sentiment interacts with recent market performance rather than operating uniformly across weeks.

Beyond financial markets, evidence from psychology, labor economics, and public health reveals systematic day-of-the-week patterns in mood, behavior, and well-

being that closely parallel findings in finance. Using large-scale survey data, Stone, Schneider, and Harter (2012) document higher levels of well-being on Fridays and weekends, alongside a deterioration in mood at the beginning of the workweek that is consistent with a Blue Monday–type effect. Notably, these day-of-week patterns are substantially weaker among older and retired individuals, underscoring the importance of work-related structures in shaping weekly emotional cycles. Hülsheger et al. (2022) further show that negative affect and anticipatory stress peak at the start of the workweek and decline thereafter, with workload and workweek organization moderating these effects. Real-world outcomes reinforce these patterns: Fontaneda et al. (2024) find that workplace accidents in Spain peak on Mondays, while Park and Cho (2023) document higher overall mortality on Mondays in South Korea.

Taken together, the literature suggests that although the classic Monday effect in asset returns may have diminished over time, systematic behavioral and psychological patterns associated with the beginning of the week remain robust across financial and non-financial domains. These findings point to common underlying mechanisms, such as mood fluctuations, risk perception, anticipation of work, and cognitive fatigue, that influence both individual decision-making and aggregate outcomes. Consequently, the Monday effect may be better understood not merely as a market anomaly, but as a manifestation of broader human behavioral cycles that continue to shape economic and social activity even as financial markets evolve.

The present study is grounded in behavioral finance and habit formation theory, which posit that financial decision-making is shaped not only by fundamentals and information, but also by cognitive schemas, emotional states, and socially constructed narratives. The public dissemination of the *Blue Monday* concept in 2005 represents such a narrative: despite its lack of scientific foundation, repeated

media exposure may foster a shared belief that the third Monday of January is associated with heightened pessimism. Once internalized, this belief can influence investor behavior through expectation-driven and nonconscious mechanisms, even in the absence of new market-relevant information.

Insights from neuroscience and social psychology suggest that repeated behaviors performed in stable contexts gradually shift from goal-directed, deliberative processes to automatic, habitual responses (Yin and Knowlton, 2006; Verplanken and Wood, 2006). Habits are activated by cues, temporal, emotional, or symbolic, that become cognitively associated with particular actions. In this framework, *Blue Monday* functions as a salient, recurring temporal cue capable of activating automatic behavioral responses, such as increased risk aversion or reduced willingness to engage in trading. Habitual responses coexist with conscious intentions and may influence behavior even when individuals do not actively endorse the underlying belief.

Consistent with dual-process models of behavior, the impact of such cues is expected to manifest more strongly in measures of market participation than in asset prices. While returns reflect the aggregation of information across market participants and are constrained by arbitrage and market efficiency, trading volume is more sensitive to shifts in attention, sentiment, and participation. As a result, psychologically salient dates may affect *whether* investors trade rather than *how prices are formed*. This distinction motivates our empirical focus on both returns and trading activity.

Within this framework, the empirical strategy proceeds on three levels: (i) comparing average returns and trading volume on Mondays relative to other trading days, (ii) examining whether Blue Mondays differ from other Mondays, and (iii) assessing whether the behavioral response to Blue Monday changes following its publicization in 2005. Evidence of reduced trading activity on Blue Mondays,

particularly emerging only after 2005, would be consistent with the hypothesis that media-driven narratives can become embedded as behavioral cues, shaping investor participation through habitual and expectation-based mechanisms rather than through fundamental information channels.

To assess whether calendar-based effects influence stock market performance and investor behavior, we employ a combination of parametric and non-parametric statistical tests. This multi-test approach is motivated by the well-documented non-normality, skewness, and excess kurtosis of both stock returns and trading volume changes. Relying on a single statistical framework could therefore lead to misleading inferences. By jointly examining differences in central tendency and entire distributional properties, we obtain a more robust evaluation of potential Monday and Blue Monday effects.

Differences in mean outcomes across samples are first examined using the Welch t-test (Welch, 1938), which relaxes the assumption of equal variances between groups. The test statistic is defined as

$$\boldsymbol{t} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}, \quad (1)$$

, where $\bar{X}_i$, $s_i^2$, and $n_i$ denote the sample mean, variance, and number of observations in group $i$, respectively. The Welch test is particularly suitable for financial data, where heteroskedasticity across subsamples is common. To complement this parametric test, we apply the Mann–Whitney U test (Mann-Whitney, 1947), a rank-based non-parametric alternative that evaluates whether two samples differ in their central tendency without imposing distributional assumptions.

Beyond differences in location, we assess whether the full distributions of returns and volume changes differ across samples. The Kolmogorov–Smirnov (KS) test

(Kolmogorov, 1933; Smirnov, 1939) compares the empirical cumulative distribution functions $F_1(x)$and $F_2(x)$of two samples and is defined as

$$\boldsymbol{D = \sup_{x} \mid F_1(x) - F_2(x) \mid.} \quad (2)$$

This test is sensitive to differences in both central regions and tails of the distributions. Given the importance of tail behavior in financial markets, we further employ the Anderson–Darling (AD) k-sample test (Anderson and Darling, 1952), which places greater weight on deviations in the tails. Unlike the KS test, the AD statistic explicitly emphasizes extreme observations, making it well suited for return and volume series characterized by fat tails and asymmetry.

Together, these measures allow us to distinguish between effects operating through average outcomes and those reflected in broader distributional changes. This framework is particularly relevant for testing behavioral hypotheses, as psychologically driven calendar effects may manifest more strongly in participation and dispersion rather than in mean returns alone. Given the limited number of Blue Monday observations, results from the distributional tests should be interpreted as supplementary rather than primary evidence. In particular, tests such as the Kolmogorov–Smirnov and Anderson–Darling procedures may have limited power and reduced reliability in very small samples. Accordingly, the conclusions of the study are based on the consistency of findings across multiple statistical approaches rather than on any single test outcome.

**3. Empirical Analysis**

We apply our empirical framework to the FTSE 100 index over the period from 1 January 1999 to 30 January 2026. The FTSE 100 represents the performance of the largest publicly listed companies on the London Stock Exchange and serves as a benchmark for the UK equity market. This index is particularly suitable for the

present study, as the Blue Monday hypothesis was originally proposed by a British psychologist and initially gained prominence in the United Kingdom.

The chosen sample period is dictated by data availability, as it provides consistent information on both index prices and trading volume. This allows us to examine not only price-based performance measures but also investor participation and market activity.

The analysis is divided into two parts. The first part examines the impact of Blue Monday (BM) on stock market performance, while the second part focuses on trading volume. This distinction enables us to test whether a potential pessimistic effect associated with Blue Monday manifests itself through abnormal returns, reduced market participation, or both. Even in the absence of statistically significant return effects, negative sentiment may still be reflected in lower investor willingness to trade on that day.

*3.1 Daily Performance, Mondays, and Blue Mondays*

Daily index returns are computed using arithmetic returns. To examine the potential existence of a Blue Monday effect, the sample is partitioned into three subsamples:

- all Mondays,
- Blue Mondays, defined as the third Monday of January, and
- the remaining Mondays of the year, excluding Blue Mondays.

This classification is motivated by the finance literature on the Monday effect, which documents systematically lower returns at the beginning of the trading week, and allows us to assess whether Blue Mondays exhibit behavior distinct from other Mondays. Descriptive statistics for the full sample and the three subsamples are reported in Table 1. Table 1 presents summary statistics for daily returns across the full sample and the Monday-based subsamples. Over the full sample period, average daily returns are positive, amounting to 0.0145%, while Mondays exhibit

slightly lower mean returns of 0.0115%. In contrast, Blue Mondays display a negative average return of −0.0224%, suggesting a potential underperformance relative to both all Mondays and the remaining Mondays. The analysis necessarily relies on a small number of Blue Monday observations (28 over the sample period). Consequently, statistical power is limited, and inference regarding distributional differences should be interpreted cautiously. The results are therefore best viewed as exploratory evidence rather than definitive proof of a distinct Blue Monday effect.

Return volatility, measured by the standard deviation, is higher on Mondays than in the full sample and is highest on Blue Mondays. This indicates increased uncertainty and variability in returns on these specific trading days. The distribution of returns is characterized by pronounced non-normality across all subsamples, as evidenced by high kurtosis values and significant Jarque–Bera and Shapiro–Wilk test statistics.

Blue Monday returns exhibit substantial negative skewness, indicating a higher probability of extreme negative outcomes compared to other Mondays. This asymmetry is not observed in the broader Monday or full-sample distributions, which are approximately symmetric.

Finally, the Augmented Dickey–Fuller (ADF) test statistics reject the null hypothesis of a unit root for all series, confirming the stationarity of daily returns. Overall, the descriptive evidence provides preliminary support for the notion that Blue Mondays may differ from other trading days in terms of both average returns and distributional characteristics, motivating the more formal econometric analysis that follows.

**Table 1: Descriptive Statistics of performance**

| Statistic | Daily Returns | All Mondays | Blue Mondays | Rest Mondays |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Mean | 0.01450% | 0.01150% | -0.02237% | 0.01226% |
| Std | 1.13088% | 1.24736% | 1.29941% | 1.24670% |
| Min | -10.87382% | -7.85293% | -5.48147% | -7.85293% |
| 25% | -0.50152% | -0.46002% | -0.28050% | -0.46865% |
| 50% | 0.05084% | 0.03363% | 0.13904% | 0.02880% |
| 75% | 0.56652% | 0.52999% | 0.45198% | 0.53148% |
| Max | 9.83867% | 9.83867% | 3.07860% | 9.83867% |
| Kurtosis | 10.91 | 12.64 | 15.61 | 12.61 |
| Skewness | -0.19 | 0.02 | -2.41 | 0.08 |
| Shapiro-Wilk | 0.924*** | 0.879*** | 0.678*** | 0.882*** |
| Jarque-Bera | 17,840.05*** | 4,893.63*** | 147.16*** | 4,764.46*** |
| ADF | -15.195*** | -9.455*** | -3.460*** | -11.100*** |
| Count | 6,839.00 | 1,276.00 | 28.00 | 1,248.00 |

*Note: *** indicates statistical significance at the 1% confidence level.*

To examine whether daily returns on Mondays differ from those of the overall sample, we compare the full return series with the subsample of Monday returns using a range of parametric and non-parametric tests. The sample consists of 6,839 daily observations and 1,276 Monday observations.

The Welch t-test, which allows for unequal variances across samples, yields a test statistic of $t = 0.080$ with a $p$-value of 0.9364, indicating no statistically significant difference in mean returns between Mondays and the full sample. This result is corroborated by the Mann–Whitney U test ($U = 4{,}379{,}126$; $p = 0.8366$), suggesting that the central tendency of returns does not differ systematically across the two samples even without imposing distributional assumptions.

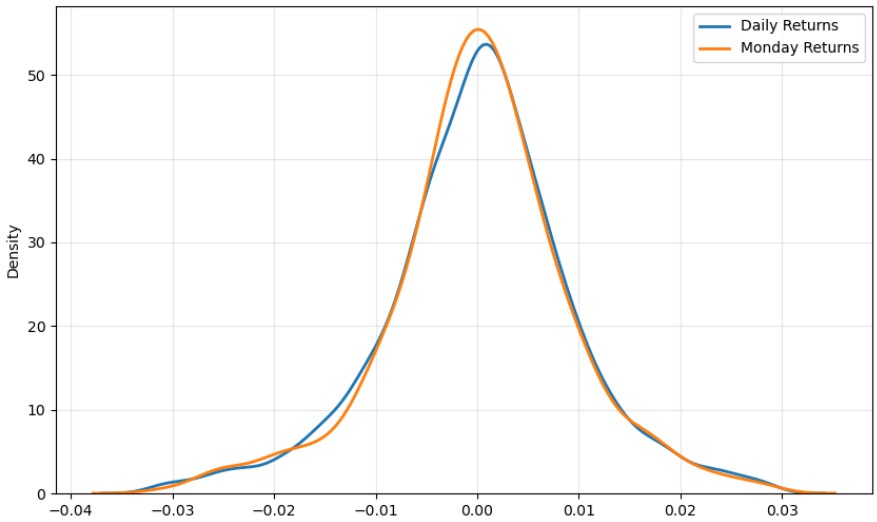
In addition, distributional equality is assessed using the Kolmogorov–Smirnov and Anderson–Darling k-sample tests. The Kolmogorov–Smirnov statistic ($D = 0.0200$; $p = 0.7748$) fails to reject the null hypothesis that the two samples are drawn from the same distribution. Similarly, the Anderson–Darling test produces a statistic of $-0.3582$ with a $p$-value of 0.25, providing no evidence of differences in the tails of the return distributions. The distributions plot graphically confirms these results.

Overall, the results consistently indicate that Monday returns are statistically indistinguishable from the unconditional distribution of daily returns, both in terms

of location and distributional shape. These findings suggest that, over the full sample period, there is no conventional Monday effect in the FTSE 100 returns, thereby motivating a more targeted investigation of the Blue Monday subsample.

**Table 2: Returns comparison between whole sample vs Monday returns and histograms comparisons.**

| Test | Statistic |
|---|---|
| Welch t-test | 0.080 |
| Mann–Whitney U test | 4,379,126 |
| Kolmogorov–Smirnov test | 0.0200 |
| Anderson–Darling k-sample test | −0.3582 |

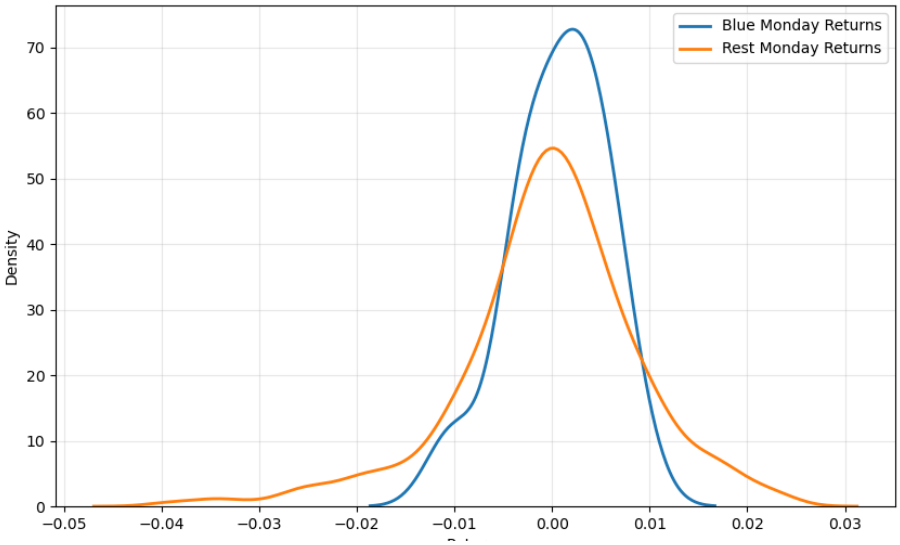



We next compare Blue Monday returns (N = 28) with returns on the remaining Mondays of the year (N = 1,248). The Welch t-test yields a statistic of $t = -0.140$ with a $p$-value of 0.89, indicating no statistically significant difference in mean returns between the two samples. This finding is reinforced by the Mann–Whitney U test ($U = 18{,}243$; $p = 0.6895$), suggesting no systematic differences in the central tendency of returns. Distributional equality tests further support this conclusion, as

both the Kolmogorov–Smirnov ($D = 0.1645$; $p = 0.4047$) and Anderson–Darling k-sample tests (statistic = −0.1945; $p \geq 0.25$) fail to reject the null hypothesis of identical distributions. Overall, despite descriptive differences, the results provide no statistical evidence that Blue Monday returns differ from those of other Mondays, a finding that is likely influenced by the limited number of Blue Monday observations.

**Table 3: Returns comparison between Blue Mondays vs Rest Monday returns and histograms comparisons.**

| Test | Statistic |
|---|---|
| Welch t-test | 0.140 |
| Mann–Whitney U test | 1,843 |
| Kolmogorov–Smirnov test | 0.1645 |
| Anderson–Darling k-sample test | −0.1945 |




Overall, the empirical evidence provides no statistically significant support for either a conventional Monday effect or a distinct Blue Monday effect in FTSE 100 returns. Across all comparisons, parametric and non-parametric tests consistently fail to detect differences in mean returns or distributional characteristics. While descriptive statistics suggest slightly lower average returns and higher volatility on Blue Mondays, these patterns do not translate into statistically significant effects, likely due in part to the limited number of Blue Monday observations. Consequently, the results indicate that any purported Blue Monday effect is not reflected in systematic stock market return behavior.

*3.2 Trading Activity: Daily, Mondays, and Blue Mondays*

We extend the analysis to trading activity, measured by the daily percentage change in trading volume. This allows us to assess whether the Blue Monday hypothesis is reflected in investor participation, in addition to price behavior. Table 4 presents descriptive statistics for volume changes across the full sample, all Mondays, Blue Mondays, and the remaining Mondays.

The results indicate that trading activity differs markedly across days. While average daily volume changes are positive in the full sample (6.07%), Mondays are associated with a decline in trading activity, with a mean decrease of −11.27%. This reduction is more pronounced on Blue Mondays, which exhibit an average volume decline of −28.15%, compared to −10.89% for the remaining Mondays. Median volume changes display a similar pattern, suggesting that the observed decline is not driven solely by extreme observations.

The percentage-change volume measure contains several extreme observations, reflecting abrupt shifts in market activity during exceptional periods. These observations are retained because they represent actual market outcomes rather than recording errors. Moreover, the use of rank-based non-parametric tests reduces sensitivity to extreme values and limits the influence of outliers on statistical inference. Future research may consider alternative activity measures such as log-volume changes, detrended volume, or winsorized series. However, the present study employs raw percentage changes in trading volume to preserve the full variation in market activity and to avoid imposing transformations that may attenuate economically meaningful fluctuations associated with periods of heightened market stress or changing investor behavior.

Volume changes are highly volatile and exhibit strong departures from normality across all subsamples, as reflected in substantial skewness and kurtosis and confirmed by the Shapiro–Wilk and Jarque–Bera tests. Finally, Augmented Dickey–Fuller test statistics reject the presence of unit roots, indicating that volume changes are stationary.

Overall, the descriptive evidence suggests that while return behavior does not differ significantly on Blue Mondays, trading activity tends to decline, consistent with reduced market participation on these days.

**Table 4: Descriptive Statistics of volume**

| Statistic | Daily Returns | All Mondays | Blue Mondays | Rest Mondays |
|---|---|---|---|---|
| Mean | 6.07% | -11.27% | -28.15% | -10.89% |
| Std | 123.63% | 31.57% | 21.91% | 31.65% |
| Min | -98.73% | -90.66% | -57.51% | -90.66% |
| 25% | -13.97% | -28.02% | -43.34% | -27.70% |
| 50% | 0.00% | -14.17% | -32.32% | -13.92% |
| 75% | 16.73% | 1.05% | -18.58% | 1.23% |
| Max | 9749.42% | 331.95% | 36.09% | 331.95% |
| Kurtosis | 5,649.50 | 28.57 | 4.32 | 28.72 |
| Skewness | 71.79 | 3.20 | 1.08 | 3.22 |
| Shapiro-Wilk | 0.090*** | 0.808*** | 0.924** | 0.805*** |
| Jarque-Bera | 9.07E+09*** | 36,607.34*** | 4.79** | 36,222.45*** |
| ADF | -60.01*** | -7.74*** | -4.54*** | -35.78*** |
| Count | 6,836 | 1,275 | 28 | 1,247 |

*Note: *** and ** indicate statistical significance at the 1% and the 5% confidence level, respectively.*

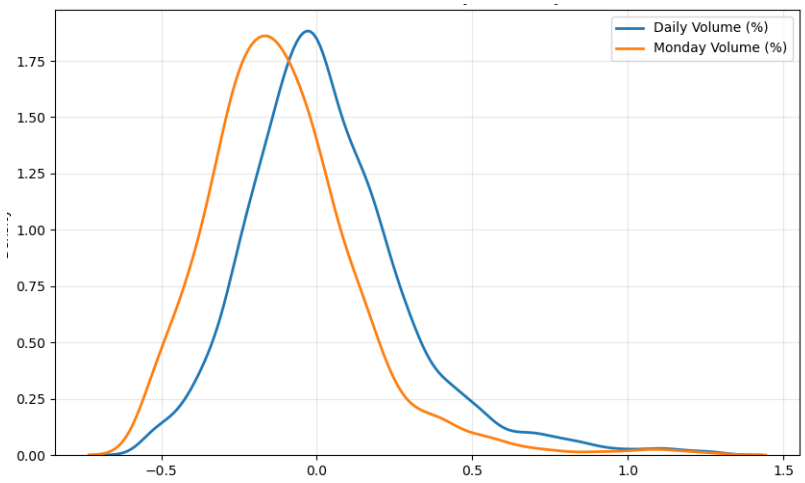
Similar to the previous analysis we perform a pair analysis. Table 5 presents the Comparison of Daily Volume Changes and Monday Volume Changes. The results provide suggestive statistical evidence that trading activity on Mondays differs from that observed on an average trading day. Both the Welch t-test and the Mann–Whitney U test reject the null hypothesis of equal central tendency, indicating a significant difference in average and median volume changes. Distributional tests further reveal substantial differences in the shape of the volume change distributions, as reflected in the large Kolmogorov–Smirnov and Anderson–Darling statistics. Overall, the findings suggest that Mondays are associated with systematically different and specifically lower trading activity, highlighting a pronounced day-of-the-week effect in market participation.

**Table 5: Comparison of Daily Volume Changes and Monday Volume Changes**

| Test | Statistic |
|---|---|

| | |
|---|---|
| Welch t-test | 9.986*** |
| Mann–Whitney U test | 5,872,412*** |
| Kolmogorov–Smirnov test | 0.2692*** |
| Anderson–Darling k-sample test | 267.0879*** |

*Note: *** indicates statistical significance at the 1% confidence level.*



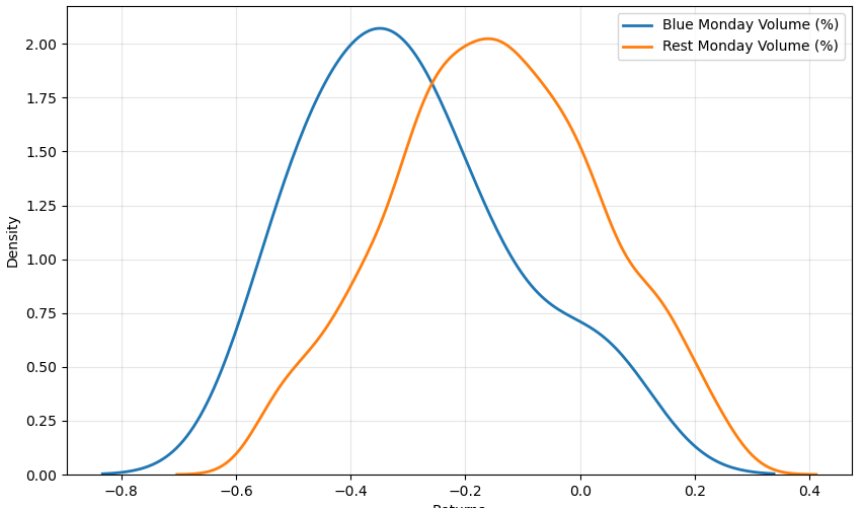

The next comparison examines Blue Mondays (N = 28) versus the remaining Mondays of the year (N = 1,247). Percentage changes in trading volume are significantly lower on Blue Mondays. The statistics and the graphical comparison of the distribution are presented in Table 6. The Welch t-test ($t$ = −4.074, $p$ = 0.0003) and Mann–Whitney U test ($U$ = 10,261, $p$ = 0.0002) both reject the null hypothesis of equal central tendency, indicating that average and median volume changes are substantially smaller on Blue Mondays. Distributional tests confirm these differences: the Kolmogorov–Smirnov test ($D$ = 0.3935, $p$ = 0.0002) and Anderson–Darling test (statistic = 9.1686, $p$ = 0.001) show that the overall distribution of volume changes differs between the two groups. These findings

suggest that, even in the absence of significant return effects, Blue Mondays are associated with markedly lower investor participation.

**Table 6: Comparison of Blue Mondays Volume Changes and Rest Monday Volume Changes**

| Test | Statistic |
|---|---|
| Welch t-test | −4.074*** |
| Mann–Whitney U test | 10,261*** |
| Kolmogorov–Smirnov test | 0.3935*** |
| Anderson–Darling k-sample test | 9.1686*** |

*Note: *** indicates statistical significance at the 1% confidence level.*




Overall, the analysis of trading activity shows that Mondays, and particularly Blue Mondays, are associated with significantly lower investor participation. Descriptive statistics indicate negative average and median volume changes on Mondays, with the largest declines observed on Blue Mondays. Pairwise comparisons confirm these patterns: both parametric (Welch t-test) and non-parametric (Mann–Whitney

U) tests, along with distributional tests (Kolmogorov–Smirnov and Anderson–Darling), reject the null of equality for both Monday versus daily and Blue Monday versus remaining Monday comparisons. These results suggest a pronounced day-of-the-week effect in market activity, with Blue Mondays exhibiting the most substantial reductions in volume. Notably, this behavioral effect occurs even in the absence of significant differences in returns, indicating that the psychological impact of Blue Monday primarily affects trading activity rather than price performance. Collectively, the findings highlight the sensitivity of investor behavior to calendar-based cues, providing evidence that certain psychologically salient dates can influence market participation independently of market returns.

## 4. Is There Any Impact of the Blue Monday Declaration in 2005?

In this section, we examine whether the publicization of the Blue Monday concept in 2005 was associated with changes in previously documented trading activity patterns. To this end, the sample is divided into two subperiods: a pre-publicization period (1 January 1999–31 December 2005), during which the concept had not yet achieved widespread public attention, and a post-publicization period (1 January 2006–30 January 2026).

The interpretation of differences observed after 2005 requires caution. The post-publicization period coincides with broader structural developments in financial markets, including technological innovation, regulatory changes, and episodes of financial instability. Consequently, any observed differences cannot be attributed exclusively to the Blue Monday narrative. Rather, the analysis is intended to assess whether trading behavior on these dates became more distinct following the period in which the concept gained broader public visibility.

To evaluate this possibility, we repeat the pairwise comparisons of trading volume changes across the two subperiods, focusing on differences between daily trading activity and Monday trading activity.

The results are reported in Table 7. Across both subperiods, the comparison between daily and Monday volume changes yields statistically significant differences according to all applied tests. These findings indicate that the direction and significance of the results remain consistent before and after 2005, indicating that the lower trading activity observed on Mondays persists irrespective of the Blue Monday declaration.

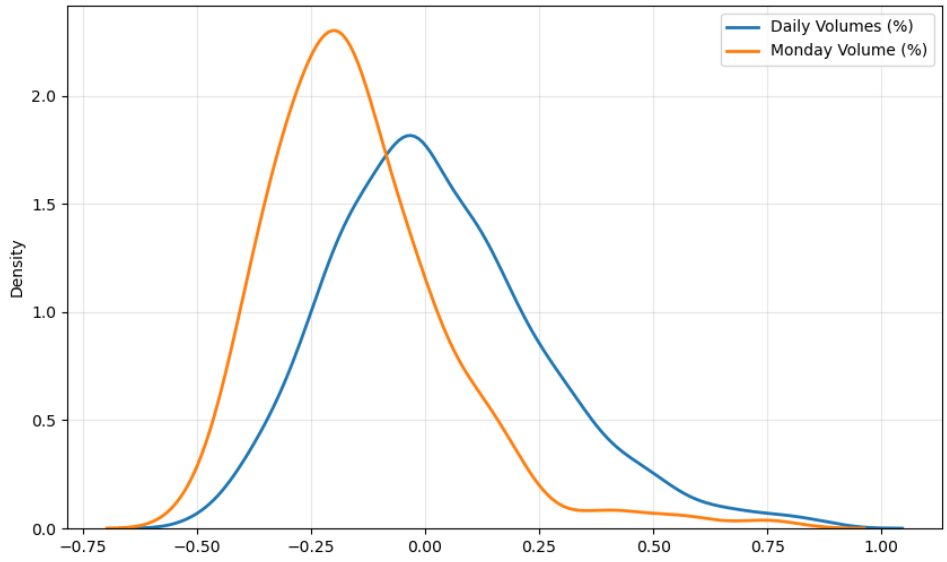
Overall, the findings suggest that the Blue Monday declaration did not materially alter the established day-of-the-week pattern in trading activity. While investor participation on Mondays is consistently lower than on an average trading day, this behavior predates the formal introduction and popularization of the Blue Monday concept, implying that the observed volume effects are driven by structural or behavioral factors unrelated to the 2005 declaration.

**Table 7: Comparison of Daily Volume Changes and Monday Volume Changes**

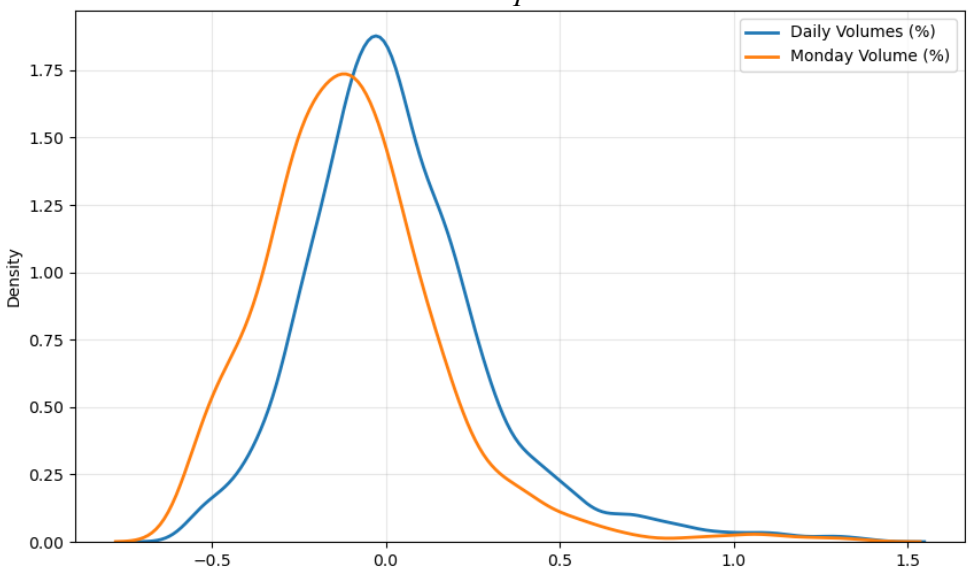
| Test | Pre-Blue Monday Declaration (1.1.1999-31.12.2005) | Post-Blue Monday Publicization (1.1.2006–30.1.2026) |
|---|---|---|
| Welch t-test | 11.768*** | 7.364*** |
| Mann–Whitney U test | 421,606*** | 3,164,987*** |
| Kolmogorov–Smirnov test | 0.364*** | 0.2377*** |
| Anderson–Darling k-sample test | 113.664*** | 161.22*** |

*Note: *** indicates statistical significance at the 1% confidence level.*

*Sub-sample 1*




*Sub-sample 2*




The next comparison focuses on trading volume changes on Blue Mondays relative to the remaining Mondays of the year. To assess whether the publicization of the Blue Monday concept is associated with changes in investor participation patterns, the analysis is conducted separately for the pre-declaration period (1 January 1999–31 December 2005) and the post-declaration period (1 January 2006–30 January 2026). The results of these pairwise comparisons are reported in Table 8.

The results indicate a noticeable difference in trading activity patterns across the two periods. Prior to 2005, pre-Blue Monday declaration, none of the applied tests reject the null hypothesis of equality between Blue Monday and other Monday volume changes, suggesting that Blue Mondays were not associated with distinct trading behavior. In contrast, in the post-declaration period, all tests yield statistically significant results at the 1% level. Both the Welch t-test and the Mann–Whitney U test indicate significantly lower central tendency in volume changes on Blue Mondays, while the Kolmogorov–Smirnov and Anderson–Darling tests reveal substantial differences in the overall distribution of volume changes.

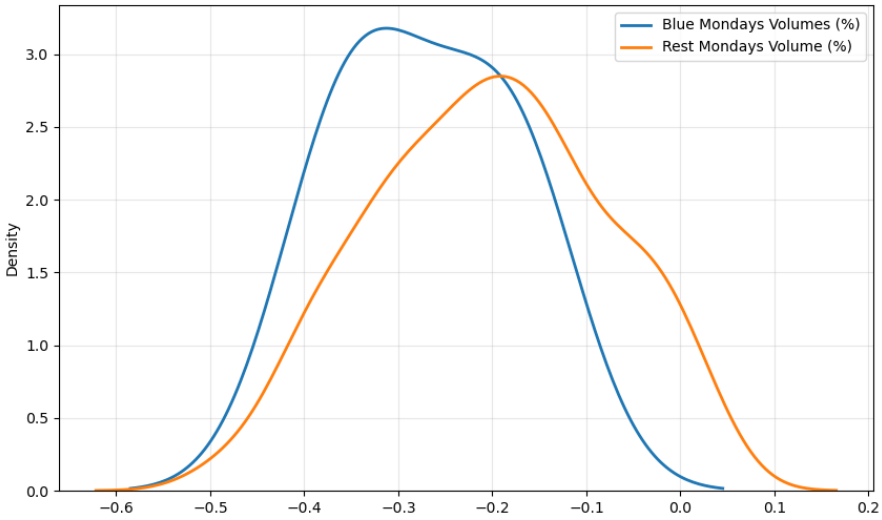
These findings indicate that differences in trading activity between Blue Mondays and other Mondays become observable only after 2005 and are consistent with an association between the increased public visibility of the Blue Monday concept and changes in investor participation patterns.

**Table 8: Comparison of Blue Mondays Volume Changes and Rest Monday Volume Changes before and after the declaration of the Blue Monday**

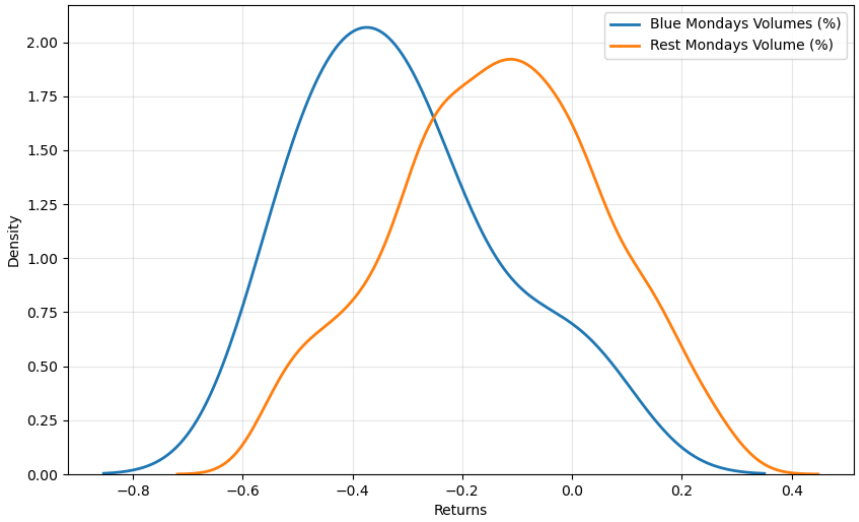
| Test | Pre-Blue Monday Declaration (1.1.1999-31.12.2005) | Post-Blue Monday Publicization (1.1.2006–30.1.2026) |
|---|---|---|
| Welch t-test | 1.592 | 3.707*** |
| Mann–Whitney U test | 771 | 5,479*** |
| Kolmogorov–Smirnov test | 0.3168 | 0.4256*** |
| Anderson–Darling k-sample test | 0.3102 | 7.5961*** |

*Note: *** indicates statistical significance at the 1% confidence level.*

Sub-sample 1




Sub-sample 2




## 5. Conclusions

This study examines the existence and economic relevance of the Blue Monday phenomenon in the UK equity market using FTSE 100 data from January 1999 to January 2026. By jointly analyzing stock returns and trading activity, the paper evaluates whether this psychologically salient calendar event is associated with differences in market performance and investor participation.

The results provide no statistical evidence of a Blue Monday effect in stock returns. Across all comparisons—daily returns versus Mondays, Mondays versus Blue Mondays, and Blue Mondays versus the remaining Mondays—parametric and non-parametric tests consistently fail to detect significant differences in either average returns or broader distributional characteristics. Although descriptive statistics suggest slightly lower average returns, higher volatility, and greater negative skewness on Blue Mondays, these patterns do not translate into statistically reliable evidence. Overall, the findings suggest that price formation in the FTSE 100 remains largely unaffected by the Blue Monday narrative.

In contrast, the analysis of trading activity reveals a different pattern. Trading volume is significantly lower on Mondays than on other trading days, confirming the existence of a day-of-the-week effect in market participation. Furthermore, Blue Mondays exhibit larger reductions in trading activity relative to other Mondays. These differences are consistently observed across the applied statistical procedures and suggest that psychologically salient calendar events may be associated with changes in market participation even when price behavior remains unchanged.

The sub-sample analysis provides additional insight into the role of the public diffusion of the Blue Monday concept after 2005. While the broader Monday effect in trading activity is present throughout the sample period, the distinction between Blue Mondays and other Mondays emerges only after the concept gained widespread public attention. However, these results should be interpreted cautiously. The post-2005 period coincides with broader changes in financial markets, including technological developments, regulatory adjustments, and periods of financial instability. Consequently, the findings should not be interpreted as establishing a causal effect of the Blue Monday narrative, but rather as indicating an association between the period of increased public visibility and changes in trading behavior.

Several limitations should also be acknowledged. First, the analysis necessarily relies on a limited number of Blue Monday observations, restricting statistical power and requiring caution in the interpretation of distributional tests. Second, trading volume represents an indirect measure of investor behavior and may also reflect liquidity conditions, institutional trading activity, and market microstructure effects. Third, although the study uses the timing of Blue Monday's public diffusion as a narrative benchmark, it does not directly measure media intensity or investor attention.

Taken together, the findings suggest that psychologically salient narratives may influence dimensions of market activity related to participation even when they do not affect prices directly. The results contribute to the behavioral finance literature by highlighting the possibility that widely disseminated narratives can become associated with observable patterns of market behavior. Future research could extend this analysis by incorporating direct measures of media attention, such as Google Trends or news-based indicators, and by examining the mechanisms through which repeated exposure and social reinforcement transform narratives into behaviorally relevant signals.

## References

Anderson, T. W., & Darling, D. A. (1952). Asymptotic theory of certain goodness-of-fit criteria based on stochastic processes. *The Annals of Mathematical Statistics, 23*(2), 193–212.

Chang, E. C., Pinegar, J. M., & Schachter, B. (1997). Interday variations in volume, variance, and participation of large speculators. *Journal of Banking & Finance, 21*(6), 797–810.

Fishe, R. P., Gosnell, T. F., & Lasser, D. J. (1993). Good news, bad news, volume, and the Monday effect. *Journal of Business Finance & Accounting, 20*(6), 881–892.

Fontaneda, I., Camino López, M. A., González Alcántara, O. J., & Greiner, B. A. (2024). The weekday effect: A decrease in occupational accidents from Monday to Friday—An extension of the Monday effect. *BioMed Research International, 2024*(1), Article 4792081.

Foster, F. D., & Viswanathan, S. (1993). Variations in trading volume, return volatility, and trading costs: Evidence on recent price formation models. *The Journal of Finance, 48*(1), 187–211.

French, K. R. (1980). Stock returns and the weekend effect. *Journal of Financial Economics, 8*(1), 55–69.

Gibbons, M. R., & Hess, P. (1981). Day-of-the-week effects and asset returns. *The Journal of Business, 54*(4), 579–596.

Gondhalekar, V., & Mehdian, S. (2003). The blue-Monday hypothesis: Evidence based on NASDAQ stocks, 1971–2000. *Quarterly Journal of Business and Economics, 42*(3/4), 73–89.

Hülsheger, U. R., Uitdewilligen, S., Zijlstra, F. R. H., & Walkowiak, A. (2022). Blue Monday, yellow Friday? Investigating work anticipation as an explanatory mechanism and boundary conditions of weekly affect trajectories. *Journal of Occupational Health Psychology, 27*(4), 359–373.

Jaffe, J. F., Westerfield, R., & Ma, C. (1989). A twist on the Monday effect in stock prices: Evidence from the U.S. and foreign stock markets. *Journal of Banking & Finance, 13*(4–5), 641–650.

John, K., & Li, J. (2025). Bitcoin price volatility: Effects of retail traders, illegal users, and sentiment. *Journal of Corporate Finance*, Article 102837.

Kiymaz, H., & Berument, H. (2003). The day-of-the-week effect on stock market volatility and volume: International evidence. *Review of Financial Economics, 12*(4), 363–380.

Khan, B., Aqil, M., Alam Kazmi, S. H., & Zaman, S. I. (2023). Day-of-the-week effect and market liquidity: A comparative study from emerging stock markets of Asia. *International Journal of Finance & Economics, 28*(1), 544–561.

Kolmogorov, A. (1933). Sulla determinazione empirica di una legge di distribuzione. *Giornale dell'Istituto Italiano degli Attuari, 4*, 89–91.

Liu, S. (2015). Investor sentiment and stock market liquidity. *Journal of Behavioral Finance, 16*(1), 51–67.

Mann, H. B., & Whitney, D. R. (1947). On a test of whether one of two random variables is stochastically larger than the other. *The Annals of Mathematical Statistics, 18*(1), 50–60.

Mehdian, S., & Perry, M. J. (2001). The reversal of the Monday effect: New evidence from U.S. equity markets. *Journal of Business Finance & Accounting, 28*(7–8), 1043–1065.

Park, G. W. V., & Cho, S. I. (2023). Monday peak is unique to suicide? Comparison of weekly distribution by causes of death using a national representative cohort database. *Suicide and Life-Threatening Behavior, 53*(4), 613–627.

Pettengill, G. N. (1993). An experimental study of the blue-Monday hypothesis. *The Journal of Socio-Economics, 22*(3), 241–257.

Pettengill, G. N. (2003). A survey of the Monday effect literature. *Quarterly Journal of Business and Economics, 42*(3/4), 3–27.

Schwert, G. W. (2003). Anomalies and market efficiency. In G. M. Constantinides, M. Harris, & R. M. Stulz (Eds.), *Handbook of the economics of finance* (Vol. 1, pp. 939–974). Elsevier.

Smirnov, N. V. (1939). On the estimation of the discrepancy between empirical curves of distribution for two independent samples. *Bulletin of Moscow University, 2*(2), 3–14.

Stone, A. A., Schneider, S., & Harter, J. K. (2012). Day-of-week mood patterns in the United States: On the existence of "Blue Monday," "Thank God it's Friday," and weekend effects. *The Journal of Positive Psychology, 7*(4), 306–314.

Vasileiou, E. (2015). Long live day-of-the-week patterns and the financial trends' role: Evidence from the Greek stock market during the Euro era (2002–2012). *Investment Management and Financial Innovations, 12*(3), 24–35.

Verplanken, B., & Wood, W. (2006). Interventions to break and create consumer habits. *Journal of Public Policy & Marketing, 25*(1), 90–103.

Yang, C., & Zhou, L. (2015). Investor trading behavior, investor sentiment, and asset prices. *The North American Journal of Economics and Finance, 34*, 42–62.

Yin, H. H., & Knowlton, B. J. (2006). The role of the basal ganglia in habit formation. *Nature Reviews Neuroscience, 7*(6), 464–476.

Welch, B. L. (1938). The significance of the difference between two means when the population variances are unequal. *Biometrika, 29*(3–4), 350–362.