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Did COVID-19 Exacerbate the 'Day-of-the-Week Effect' in the Nasdaq, S&P 500, and Russell 2000 Stock Markets?

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Abstract: ***The presence of seasonal patterns in the returns and volatility of various international stock exchanges may indicate the lack of integration in financial markets. Consequently, such abnormal behaviors can create investment opportunities. This paper investigates this type of anomaly, specifically analyzing the 'day-of-the-week effect' in the Nasdaq, S&P 500, and Russell 2000 markets through a dummy regression model. The results indicate no unusual behavior in the returns of these stock markets. The day-of-the-week effect was not influenced by the outbreak of COVID-19.***

Keywords: Day-of-the-week effect; Dummy variable regression; Quantitative research method.

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1. Introduction

This study aims to determine whether the Nasdaq, S&P 500, and Russell 2000 equity markets exhibit a "day-of-the-week effect" over the ten-year period from December 3, 2012, to December 2, 2022, and to evaluate whether COVID-19 has contributed to this phenomenon. In addition to analyzing the entire ten-year period, the study will divide this timeframe into two five-year subgroups. To explore how the impact varies with the progression of the pandemic, I will focus on two specific periods: the pre-pandemic phase, from December 2012 to December 2017, and the post-pandemic phase, from December 2017 to December 2022.

In my academic work, I use descriptive statistics to summarize and analyse the survey data's statistical findings. I will use multiple linear regression after that. Dummy variables are also included because the dependencies are qualitative. This academic paper's findings are based on numerous studies showing and refuting the idea that the calendar effect vanishes with time. The Nasdaq, S&P 500, and Russell 2000 markets do not show any signs of a "day of the week effect," according to data as well. This behavior was not sparked by the epidemic's start either.

Section 2 of this essay discusses the "day of the week effect" and some studies on it, as well as the factors that motivated me to write this essay. The study's data are described in Section 3, along with how the descriptive statistical findings were interpreted. In part 4, I go over a few of the techniques I employed for this essay. The use of specific equations and hypothesis testings are two examples. Also thoroughly detailed are the tactics employed. Section 5 presents and explains the study's findings. Sections 6 summarise the main conclusions, findings, and limitations of the paper.

2. Literature Review

Plenty of research has been done on the "day of the week effect" in the US market. Osborne [1] (pp. 345–379) and Cross [2] (pp. 67–69) examined the returns of the S&P 500 index from 1953 to 1970 in a study investigating the day of the week effect in the US market. According to their findings, the average return on Fridays was higher than the average return on Mondays. French [3] (pp. 55–69), who studied the S&P 500 from 1953 to 1977, discovered that Mondays have poor or negative returns, supporting this impact. This impact was also documented

by Jaffee and Westerfield [4] (p. 261), who examined the distribution of daily returns in the Australian, UK, Canadian, and Japanese markets. They discovered that in each market, returns on Fridays were significantly higher than returns on Mondays. Tuesdays, however, saw the lowest daily returns in Japan and Australia. Similar results are seen in Bruno Solnik and Laurence Bousquet's [5] analysis of the impact of the working day on the Paris Stock Exchange's stock market, where they discover Tuesdays to have particularly substantial and enduring negative returns. The settlement process and the notion of forward pricing, however, make it impossible to account for Tuesday's negative returns. After accounting for this, they discovered that Monday had the highest average return for the week, which was contrary to what French et al [3] (pp. 55–69) and [6] (p. 579). had seen Jaffee and Westerfield [4] hypothesized that, taking into account time differences, negative returns on Tuesdays in Tokyo are connected with negative returns on Mondays in New York. However, they quickly tested and disproved this hypothesis.

According to the "day of the week effect", the day on which stock returns are generated is not irrelevant. Investment opportunities can be obtained from the many behaviors that provide returns when there are anomalies in the global financial markets, which can clearly show a lack of integration between these markets. To explain this phenomenon, numerous research has concentrated on the relative seasonal abnormalities of various financial markets in affluent nations. Keim and Stambaugh [7] (pp. 819–835) make an attempt to tie the day of the week effect to measurement mistakes in stock prices in order to explain these reasons in the US market. My motivation stems from the fact that the world's financial markets have been volatile of late due to the Covid-19 outbreak. The industry lacks data to investigate whether this outbreak has triggered this problem. This article will examine this issue to establish a link between Covid-19 and this phenomenon. None of the previous studies had investigated the effect of Covid-19 on the day of the week. This paper adds to the literature by attempting to determine the existence of the day of the week effect using regression models.

3. Data Analysis

The data for this article was entirely sourced from Yahoo Finance. Between December 3, 2012, and December 2, 2022, I retrieved the daily closing prices for the Nasdaq, S&P 500, and Russell 2000 markets. Data for Saturdays, Sundays, and legal holidays will be excluded, as the markets are closed on those days. I will perform regression analyses on the Nasdaq, S&P 500, and Russell 2000 stock markets to examine whether there is a day-of-the-week effect across these three equity markets during the ten-year period. To further investigate the potential influence of the COVID-19 pandemic on this phenomenon, I will divide the 10-year dataset into two five-year intervals: December 7, 2012, to December 1, 2017, and December 8, 2017, to December 2, 2022. Subsequently, regression analyses will be conducted separately for each of the three markets over the two five-year periods. Below are tables presenting the descriptive statistics.

Table 1: Summary Statistics for the Nasdaq, S&P500 and Russell 2000 Return for the whole period Dec, 2012-Dec, 2022

		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Nasdaq Dec, 2012-Dec, 2022	Mean	0.001	0	0.001	0.001	0	0
	Standard deviation	0.013	0.014	0.012	0.013	0.013	0.013
	Kurtosis	8.625	15.870	5.843	3.285	8.636	6.361
	Skewness	-0.490	-1.746	0.552	-0.159	-0.929	0.276
	observations	2515	473	517	516	508	504
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
S&P500 Dec, 2012-Dec, 2022	Mean	0	0	0.001	0.001	0	0.001
	Standard deviation	0.011	0.011	0.011	0.011	0.011	0.011
	Kurtosis	15.622	12.431	31.167	13.019	15.349	3.522
	Skewness	-0.550	0.526	-2.474	1.517	-1.451	0.544
	observations	2515	496	516	516	508	176
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Russell 2000 Dec, 2012-Dec, 2022	Mean	0	0	0.001	0	0	0.001
	Standard deviation	0.014	0.015	0.013	0.014	0.014	0.013
	Kurtosis	11.152	20.229	6.083	7.416	11.038	3.437
	Skewness	-0.755	-1.885	0.780	-0.999	-0.963	0.140
	observations	2518	473	517	516	508	504

(Sources: Yahoo Finance)

Upon comparing the average returns of the three stock markets over a consecutive ten-year period, I observed that Tuesdays exhibit the highest mean returns. The S&P 500 and Russell 2000 markets demonstrate the lowest mean returns on Mondays, while the Nasdaq market experiences its lowest mean returns on Thursdays. Notably, Tuesdays are the most volatile days of the week for both the S&P 500 and Russell 2000 stock markets. However, Nasdaq market volatility reaches its peak on Mondays.

The data from all three markets display a kurtosis of three or greater, suggesting a leptokurtic distribution with a steeper peak than normal. This implies the presence of more outliers, which subsequently affects the overall distribution. In terms of skewness, except for the Nasdaq and Russell 2000 markets, which exhibit positive skewness on Tuesdays and Fridays, and the S&P 500 market, which shows positive skewness on Mondays, Wednesdays, and Fridays, all three markets record negative skewness values. This indicates that the peak of the return distribution is skewed to the left, with a longer tail to the right. Consequently, there are more modest positive gains but fewer, yet more severe, negative gains.

It is commonly acknowledged that, apart from Mondays in the Nasdaq and Russell 2000 markets, and Tuesdays, Wednesdays, and Thursdays in the S&P 500 market, skewness is generally less than 1 in absolute value, indicating that the associated data is relatively insignificant.

Table 2: Summary Statistics for the Nasdaq, S&P500 and Russell 2000 Return for the sub-period Dec, 2012-Dec, 2017（before covid-19)

		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Nasdaq Dec, 2012-Dec, 2017	Mean	0.001	0	0.001	0.001	0	0.001
	Standard deviation	0.009	0.009	0.009	0.089	0.009	0.009
	Kurtosis	2.228	2.403	1.116	2.669	1.380	3.236
	Skewness	-0.430	-0.8512	-0.110	0.196	-0.476	-0.932
	observations	1260	238	258	259	253	252
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
S&P500 Dec, 2012-Dec, 2017	Mean	0.001	0	0.002	0	0.001	0.001
	Standard deviation	0.008	0.007	0.007	0.008	0.008	0.010
	Kurtosis	2.747	1.606	2.903	1.817	3.761	0.676
	Skewness	-0.346	-0.303	0.598	-0.107	-0.979	-0.120
	observations	1258	249	258	258	248	88
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Russell 2000 Dec, 2012-Dec, 2017	Mean	0.001	0	0.001	0	0.001	0.001
	Standard deviation	0.010	0.010	0.010	0.010	0.010	0.009
	Kurtosis	0.922	1.6791	0.143	0.768	0.190	2.102
	Skewness	-0.310	-0.732	-0.123	0.0349	-0.245	-0.524
	observations	1260	238	258	259	253	252

(Sources: Yahoo Finance)

Over the five years preceding the COVID-19 pandemic, I observed that the average returns in the three stock markets were highest on Tuesdays and lowest on Mondays. On Mondays, both the S&P 500 and Russell 2000 markets recorded negative returns. The Nasdaq and S&P 500 markets experienced the highest volatility on Fridays compared to other days, while in the Russell 2000 market, Mondays exhibited the highest volatility.

The kurtosis values for the three markets did not show a discernible pattern. However, the kurtosis for the Russell 2000 market was below three, indicating a platykurtic return distribution that is smoother than the standard normal distribution. Conversely, both the Nasdaq market on Fridays and the S&P 500 market on Thursdays exhibited leptokurtic return distributions.

In terms of skewness, except for the Nasdaq and Russell 2000 markets on Wednesdays and the S&P 500 market on Tuesdays, which showed positive skewness, all three markets displayed negative skewness. This suggests that the peak of the return distribution is shifted to the right, resulting in a left-skewed distribution. Consequently, small positive returns occur more frequently, while larger negative returns are less prevalent.

It is well-established that skewness, in absolute terms, is typically less than one, and the data in this analysis

conform to this norm. However, describing the data as 'quite insignificant' is misleading; instead, they reflect a common statistical characteristic.

Table 3: Summary Statistics for the Nasdaq, S&P500 and Russell 2000 Return for the sub-period Dec, 2017-Dec, 2022（after covid-19)

		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Nasdaq Dec, 2017-Dec, 2022	Mean	0.001	0	0.001	0.001	0	0
	Standard deviation	0.016	0.018	0.0152	0.016	0.016	0.016
	Kurtosis	6.404	11.010	4.280	1.992	6.439	4.998
	Skewness	-0.435	-1.593	0.597	-0.224	-0.888	0.567
	observations	1257	235	258	257	255	252
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
S&P500 Dec, 2017-Dec, 2022	Mean	0	0	0.001	0.001	0	0.001
	Standard deviation	0.014	0.014	0.014	0.014	0.013	0.012
	Kurtosis	12.309	9.461	23.347	10.268	2.903	3.971
	Skewness	-0.515	0.581	-2.469	1.580	-0.673	0.805
	observations	1259	247	257	258	251	88
		All days	Monday	Tuesday	Wednesday	Thursday	Friday
Russell 2000 Dec, 2017-Dec, 2022	Mean	0	0	0.001	0	0	0
	Standard deviation	0.017	0.019	0.015	0.018	0.017	0.015
	Kurtosis	9.299	16.074	5.630	5.836	9.117	2.418
	Skewness	-0.756	-1.856	0.949	-1.070	-0.963	0.313
	observations	1257	235	258	257	255	252

(Sources: Yahoo Finance)

By analyzing the average returns of the three stock markets over the five years following the COVID-19 pandemic, I observed that Tuesdays yield the highest mean returns in both the Nasdaq and Russell 2000 markets. In the S&P 500 market, Wednesdays have the highest mean return. Both the S&P 500 and Russell 2000 markets record the lowest mean returns on Thursdays. In the Nasdaq market, Fridays exhibit the lowest return, which is negative.

Across all periods, Mondays exhibit the highest volatility in both the Nasdaq and Russell 2000 markets. Conversely, in the S&P 500 market, Tuesdays are characterized by the highest volatility. Excluding the Nasdaq market on Wednesdays, the S&P 500 market on Thursdays, and the Russell 2000 market on Fridays, the kurtosis values for the remaining days in all three markets exceed three. This indicates leptokurtic characteristics, with a steeper peak than that of a normal distribution, suggesting the presence of more outliers that significantly impact the overall distribution.

All three markets display negative skewness, except for the Nasdaq and Russell 2000 markets on Tuesdays and Fridays, and the S&P 500 market on Mondays, Wednesdays, and Fridays, which show positive skewness. This implies that the return distribution is left-skewed, with a peak shifted to the right. Consequently, there are more modest positive gains, but fewer, more severe negative gains. It is commonly known that, except for Mondays in the Nasdaq market, Tuesdays and Wednesdays in the S&P 500 market, and Mondays and Wednesdays in the Russell 2000 market, the absolute skewness is typically less than 1.

4. Methodology

A dummy variable regression is used to determine whether the stock markets of the Nasdaq, S&P 500, and Russell 2000 are affected by the day of the week. In this analysis, a dummy variable D is used, which takes the value of 1 if an observation belongs to a specific category (e.g., a particular day of the week) and 0 otherwise. These dummy variables are included in the regression equation as independent variables to assess their impact on stock market returns. If t is Tuesday, $D_{Tuesday,t} = 1$ [8]. I will employ a regression of the following kind to test the theory:

$$R_t = \beta_0 + \beta_1 D_{Tuesday,t} + \beta_2 D_{Wednesday,t} + \beta_3 D_{Thursday,t} + \beta_4 D_{Friday} + \varepsilon_t \quad (1)$$

Where,

$R_t$is daily simple return of Nasdaq, S&P 500 and Russell 2000 stock markets.
$D_t$is a dummy variable to represent the weekday.

$\varepsilon_t$is error term of the regression.
$\beta_0,\ \beta_1,\ \beta_2,\ \beta_3,\ \beta_4$ are the regression parameters to be estimated.
When t is Friday, $D_{Friday,t} = 1$, $D_{Tuesday,t,}D_{Wednesday,t,}D_{Thursday,t,}D_{Monday,t} = 0$. In this context, the parameter β represents the marginal contribution, specifically the difference in average returns between Mondays and the remaining working days.

The following hypothesis examines the "day-of-the-week effect" i.e., whether returns remain consistent across all working days.

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0 \tag{2}$$

$H_\alpha: \beta_1 \neq 0$ for at least one i (i=1,2,3,4)

To ascertain whether the returns on Monday and Friday are equivalent, the subsequent assumptions have been formulated:

$$\begin{aligned} H_0: \beta_4 &= 0 \\ H_\alpha: \beta_4 &\neq 0 \end{aligned} \tag{3}$$

In this paper, I will evaluate Hypothesis (3) across three distinct time periods: the ten consecutive years overall, the five-year period preceding the COVID-19 pandemic, and the subsequent five years following the pandemic. This analysis aims to determine whether the pandemic has had a stimulatory impact on the "day-of-the-week effect."

5. Results

The findings from the analysis of equation (1) across the three equity markets and three time periods are presented in the table below. According to this equation, Monday serves as the baseline or intercept, while the coefficients for the remaining days represent deviations from this baseline. Therefore, the expected return on Tuesday can be calculated as the sum of the intercept (Monday) and the coefficient for Tuesday.

Table 4: Summary of the regression analysis for the Nasdaq, S&P500 and Russell 2000 Return for the whole period Dec, 2012, Dec-2022,Dec

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Nasdaq Dec, 2012-Dec, 2022	Coefficient	0	0.001	0.001	0	0
	Standard Error	0.001	0.001	0.001	0.001	0.001
	t state	0.384	1.185	1.064	-0.040	0.081
	P-value	0.701	0.236	0.288	0.968	0.936
	F	0.768				
	significant F	0.546				
	R square	0.001				
	observations	2518				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
S&P500 Dec, 2012-Dec, 2022	Coefficient	0	0.001	0	0	0.001
	Standard Error	0	0.001	0.001	0.001	0.001
	t state	0.559	1.580	0.822	-0.277	0.627
	P-value	0.576	0.114	0.411	0.782	0.531
	F	0.777				
	significant F	0.540				
	R square	0.001				
	observations	2518				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Russell 2000 Dec, 2012-Dec, 2022	Coefficient	0	0.001	0	0	0.001
	Standard Error	0.001	0.001	0.001	0.001	0.001
	t state	0.049	1.099	0.123	0.170	0.817
	P-value	0.961	0.272	0.902	0.865	0.414
	F	0.484				
	significant F	0.747				
	R square	0				
	observations	2518				

Table 5: Summary of the regression analysis for the Nasdaq, S&P500 and Russell 2000 Return for the sub-period Dec, 2012-Dec, 2017(before covid-19)

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Nasdaq Dec, 2012-Dec, 2017	Coefficient	0	0.001	0.001	2.375	0.001
	Standard Error	0.001	0.001	0.001	0.001	0.001
	t state	0.429	1.098	0.973	0.003	0.628
	P-value	0.668	0.272	0.331	0.998	0.530
	F	0.551				
	significant F	0.698				
	R square	0.002				
	observations	1260				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
S&P500 Dec, 2012-Dec, 2017	Coefficient	0	0.002	0	0.001	0.001
	Standard Error	0	0.001	0.001	0.001	0.001
	t state	-0.181	2.739	0.510	1.225	0.833
	P-value	0.857	0.006	0.610	0.221	0.405
	F	2.008				
	significant F	0.092				
	R square	0.006				
	observations	1258				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Russell 2000 Dec, 2012-Dec, 2017	Coefficient	0	0.001	0	0.001	0.001
	Standard Error	0.001	0.001	0.001	0.001	0.001
	t state	-0.169	1.101	0.541	0.689	1.272
	P-value	0.866	0.271	0.589	0.689	1.272
	F	0.501				
	significant F	0.735				
	R square	0.002				
	observations	1260				

Table 6: Summary of the regression analysis for the Nasdaq, S&P500 and Russell 2000 Return for the sub-period Dec, 2017-Dec, 2022(after covid-19)

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Nasdaq Dec, 2017-Dec, 2022	Coefficient	0	0.001	0.001	0	0
	Standard Error	0.001	0.001	0.001	0.001	0.001
	t state	0.202	0.754	0.677	-0.047	-0.253
	P-value	0.840	0.451	0.499	0.963	0.801
	F	0.434				
	significant F	0.784				
	R square	0.001				
	observations	1257				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
S&P500 Dec, 2017-Dec, 2022	Coefficient	0	0.001	0.001	0	0.001
	Standard Error	0.001	0.001	0.001	0.001	0.002
	t state	0.214	0.471	0.775	-0.147	0.407
	P-value	0.831	0.638	0.439	0.883	0.684
	F	0.252				
	significant F	0.908				
	R square	0.001				
	observations	1259				

		$\beta_0$intercept(Monday)	β_1Tuesday	β_2Wednesday	β_3Thursday	β_4Friday
Russell 2000 Dec, 2017-Dec, 2022	Coefficient	0	0.001	0	0	0
	Standard Error	0.001	0.002	0.002	0.002	0.001
	t state	0.156	0.655	-0.176	-0.206	0.201
	P-value	0.876	0.513	0.860	0.837	0.841
	F	0.260				
	significant F	0.904				
	R square	0.001				
	observations	1257				

Upon conducting regressions on the data across the three time periods, I observe that the R-squared values for all

three markets remain low. The R-squared value, which ranges from 0 to 1, indicates the proportion of the variance in the dependent variable that is predictable from the independent variables. A lower R-squared value suggests a weaker model fit [8]. This finding is consistent with the efficient market hypothesis, which posits that if markets were efficient, returns would not be predictable, as returns should reflect all available information [9] (pp. 28-30).

5.1 Some Explanation for Three Equity Markets' "Day-of-the-week effect" from Dec. 2012 to Dec. 2022

Table 4 presents the F-statistics for the three stock markets over a consecutive 10-year trading period, which are 0.768, 0.777, and 0.484, respectively. These F-statistics are all below the critical value of 2.37 at the 5% significance level. Since the F-statistics do not exceed this critical value, we cannot reject the null hypothesis. This result indicates that the statistical significance of the market data does not surpass the 5% significance threshold. Consequently, we can conclude that there is no significant difference in returns between Friday and Monday.

After verifying that the overall test results were not statistically significant, I examined the t-statistics for the three markets. I found that their absolute values were all below 1.96 (the critical value for a 5% significance level), and all corresponding p-values exceeded 0.05. Consequently, I concluded that the Monday-to-Friday returns in the Nasdaq, S&P 500, and Russell 2000 stock markets were not statistically significant. These findings align with existing literature, which suggests that in some countries, including India, there is no discernible difference in returns between Friday and Monday, indicating the absence of a "day-of-the-week effect" [10].

5.2 Some Explanation for Three Equity Markets' "Day-of-the-week effect" from Dec. 2012 to Dec. 2017

I discovered that the results for the five-year period preceding the epidemic were consistent with those for the subsequent ten years. The F-statistics for the three stock markets during the five-year period prior to the epidemic were 0.551, 2.008, and 0.501, respectively. All these values are below the 5% significance threshold of 2.37, indicating that we cannot reject the null hypothesis. Consequently, there is no statistically significant difference between Friday and Monday returns.

Notably, although the F-statistic for the S&P 500 market exceeds that of the other markets, it still falls below the 5% significance threshold of 2.37. Additionally, the t-statistic for Tuesday in the S&P 500 market was 2.739, which exceeds the critical value of 1.96. The corresponding p-value for Tuesday was 0.006, significantly lower than 0.05. Thus, in the S&P 500 market, Tuesday's returns, with a mean of 0.157% and a t-statistic of 2.739, are statistically significant. However, no statistically significant differences were found for the remaining data.

5.3 Some Explanation for Three Equity Markets' "Day-of-the-week effect" from Dec. 2017 to Dec. 2022

According to Table 6, I compared the F-statistics for the three markets against the 5% significance threshold of 2.37 at the overall test level. The results for the five-year period following the epidemic align with those from the previous two periods. The F-statistics for the three stock markets during this subsequent five-year period were 0.434, 0.252, and 0.260, respectively. These values are all below the 5% significance threshold of 2.37, leading to the conclusion that we cannot reject the null hypothesis. Therefore, there is no statistically significant difference between Friday and Monday returns in the five years following the epidemic.

Additionally, by examining the t-statistics and p-values for Monday through Friday for all three markets, it is evident that returns from Monday through Friday in the Nasdaq, S&P 500, and Russell 2000 stock markets were not statistically significant during this period. This conclusion is supported by the fact that all t-statistics are below 1.96, and all p-values exceed 0.05. These findings are consistent with the results of the overall test.

6. Conclusions

My research has several limitations. Firstly, regarding the calculation of returns, I chose a specific method, but the distribution of returns did not always conform to a normal distribution for certain working days. Even when switching to an alternative method, similar issues persisted. Therefore, future research will aim to employ a more rigorous method for calculating returns to improve the accuracy of the findings. Secondly, after the epidemic, serial correlations among stock prices have emerged. The time period selected for analysis encompasses only the epidemic period, which may impact the validity of the F-test results. Future studies should consider a broader time frame to account for these potential influences.

Before incorporating foreign markets into their portfolios, investors must first determine whether these markets are integrated. My investigation explores the "day of the week effect" in global markets to provide insights into this phenomenon. The empirical analysis focuses on the US equities market over the period from December 3, 2012, to December 2, 2022. Firstly, my findings indicate that there is no statistically significant difference between Monday and Friday returns in the US equity markets. Consequently, there is no evidence of a "day-of-the-week effect" in the Nasdaq, S&P 500, and Russell 2000 markets. The returns in these markets, derived from representative indices, show no significant variation based on the day of the week. Secondly, when comparing the periods before and after the Covid-19 pandemic, I found no significant "day of the week effect" in any of the equity markets. Therefore, the Covid-19 pandemic did not act as a catalyst for this phenomenon.

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