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Event Study: The Effect of the Passing Away of Queen Elizabeth II on the UK Stock Market

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Abstract: This study assesses the heterogeneous impact of the death of Queen Elizabeth II on industry leaders in the United Kingdom. It reveals the firm-specific characteristics that lead to this heterogeneity. This study applies an event study methodology to a sample of 20 leading UK companies across a 250-day estimation window and a 40-day event window. According to the event study, the death of Queen Elizabeth II has had a differential impact on most UK companies for different industries. In contrast, companies in the Biotech, Oil & Gas, Mining, and Tobacco industries were less affected. However, companies in the Retail, Telecommunications, Banks, and Defense Contractors sectors show significant negative CARs. This article has implications for investors in identifying company sector-specific characteristics that drive premium returns and guiding diversification by improving the sectoral diversity of portfolios. However, the study is limited by a relatively small sample size. There is a gap in earlier research on the related change of kingship and stock market performance, and this study makes two contributions to the literature. The authors first analyze the impact of the death of Queen Elizabeth II on British firms. Secondly, the study also provides guidance on how investors can diversify across different sectors in the UK to reduce risk.

Keywords: Queen Elizabeth II, UK stock market, risk

1. Introduction

On September 8, 2022, Queen Elizabeth II, who reigned over the United Kingdom and other Commonwealth realms, passed away. According to a YouGov survey, nearly three-quarters (76%) of Britons are upset by the Queen's death [1]. There's a general agreement that social events can influence stock market performance. The relationship between politics and economics has also been hotly debated. Whether it's the previous trade war between the US and China or the recent war between Russia and Ukraine. These political events profoundly affect the economic performance of the countries in the event. The purpose of this article is to examine what impact the death of Queen Elizabeth II, who reigned for 70 years, will have on the stock market in the United Kingdom when the time comes on September 8, 2022.

It is essential to explore the impact of the Queen's death on the UK stock market for at least two reasons. First, it is the first change of power for the British monarch in 70 years since 1952. Since World War II, political and economic developments have taken on different forms and potential in different countries, so we can learn about today's British society by understanding the connection between the monarchy's change and the UK's economic performance. Second, as a constitutional

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monarchy, we can also understand the current influence of the British monarch on the British economy through this research.

A large and growing of literature has investigated the effect that an event could have on the British stock market. Hudson and Urquhart, in their research, found some evidence for the "negativity effect," but little evidence for large correlations between war events and market returns [2]. For Brexit, Shahzad et al.'s research indicated that the market first reacted negatively to Brexit, but as the UK's future economic relations with the EU began to take shape, the market started to perceive the benefits of Brexit [3]. According to the findings from Breinlich et al., the first stock price movements were influenced by concerns about a cyclical slump and the depreciation of the pound after the referendum [4]. The event research approach was utilized by Ramiah et al., and the findings indicate that Brexit negatively impacted the banking, travel, and leisure sectors, and Brexit has a mixed impact on ARs, with evident sector-by-sector variances [5]. In particular, significant changes in the network topologies are seen in the insurance, consumer goods, consumer services, mining, and technology sectors, whereas the oil and gas and healthcare sectors have not been impacted by Brexit stress [6]. Chortareas, G. et al. found that the Bank of England Monetary Policy Committee's (MPC) asset purchase announcements from 2009 to 2017 had a significant impact on domestic equities returns and volatility, and the extent of this impact was dependent on the Bank's information dissemination through inflation reports and the publishing of the MPC's voting records [7].

Since the passing away of Queen Elizabeth II happened just two months ago, the impact of the Queen's passing away and the change of monarchy it represents on the UK's stock market has not yet been discussed. Therefore, in this paper, the author will research and discuss the reaction of the UK stock market to the demise of Queen Elizabeth II and see if it had a positive or negative effect on the UK's stock market and if there is any difference across different industries.

Table 1: Sample list & benchmark.

Serial Number	Company Name	Stock Exchanging Market	Benchmark Index
1	Shell Plc	LSE	FTSE100
2	BP Plc	LSE	FTSE100
3	Tesco Plc	LSE	FTSE100
4	Rio Tinto Group	LSE	FTSE100
5	Legal & General Group Plc	LSE	FTSE100
6	Unilever Plc	LSE	FTSE100
7	Vodafone Group Plc	LSE	FTSE100
8	HSBC Holdings Plc	LSE	FTSE100
9	Lloyds Banking Group Plc	LSE	FTSE100
10	GSK Plc	LSE	FTSE100
11	Anglo-American Plc	LSE	FTSE100
12	Aviva Plc	LSE	FTSE100
13	Imperial Brands Plc	LSE	FTSE100
14	AstraZeneca	LSE	FTSE100
15	Sainsbury's Plc	LSE	FTSE100
16	British American Tobacco Plc	LSE	FTSE100
17	Barclarys Plc	LSE	FTSE100
18	Prudential Plc	LSE	FTSE100

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Table 1: (continued).

19	BT Group Plc	LSE	FTSE100
20	BAE Systems Plc	LSE	FTSE100

2. Data and Methodology

To perform the event-study analysis, the author initially defined the event window and estimation window. The day Queen Elizabeth II passed away is deemed the event day and ordered on 8 September 2022. The event study approach makes the assumption that the market was aware of the information on the event day. The event window is 40 days from t+20 to t+20, while the estimation window is 250 days from t-271 to t-21, guaranteeing the correctness of the market model. Only trading days are taken into consideration for the research.

The author sorted the companies in the United Kingdom (UK) by their revenue in 2022 [8]. Table 1 lists my sample's top 20 high-revenue firms in 2022. Table 2 illustrates that 20 firms cover a range of 11 industries. Specifically, the samples are relatively distributed in each industry equally. The market model assumes a linear relationship between the stock return i and the market portfolio returns [9]. For our analysis, we collected the daily closing price for the leading index of the UK. Then with a 250-day estimation window, we use the market model to obtain the intercept and slope coefficients of the OLS regression model. With a 40- day event window, the abnormal return is calculated as follows:

$$AR_{it} = R_{it} - \left(\hat{\alpha} + \hat{\beta} * R_{mt}\right) \tag{1}$$

where, AR_{it} is the abnormal return for index i on day t; R_{it} is the return for the index i on day t; R_{mt} is the rate of return on the leading index m on day t; $\hat{\alpha}$ and $\hat{\beta}$ are intercept and slope coefficients obtained from market model respectively.

Cumulative abnormal returns are computed:

$$CAR_{i,p-q} = \sum_{t=p}^{q} AR_{it} \tag{2}$$

Here, $CAR_{i,p-q}$ is the cumulative abnormal return for each index i for the event window (p–q).

Table 2: Number of observations by industries.

Industries	Number of firms in the sample
Oil & Gas	2
Retail	2
Mining	2
Asset Management	1
Consumer Goods	1
Telecommunication	2
Banks	3
Biotech, Pharmaceuticals	2
Insurance	2
Tobacco	2

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Table 2: (continued).

Defense Contractors	1

3. Result Analysis

The event study results in Table 3 illustrate the heterogeneous effects across 20 top-revenue companies in the UK. Regarding the result of the abnormal return, only two companies did not exhibit any significant result during the event window: BT Group and BAE Systems. Prior to the day of the Queen's passing away, limited numbers of firms indicated a significant positive or negative AR except at t-11, when AR is significantly positive for the firms in the Oil & Gas industry, which are Shell and BP. On the event day, Vodafone Group and two companies in the Retail sector (Tesco and Sainsbury's) perform negative AR. At t+1 and t+2, two firms, including Barclays and Prudential, experienced significantly negative AR, while Tesco and Sainsbury's experienced significantly positive AR at t+2. From t+8, the number of companies with significant negative AR increases and peaks at three on t+13 and t+14, which includes companies that do not show significant negative results in CAR. Additionally, at t+5, t+7, t+9, t+12, t+14, t+16, t+19, and t+20, one company showed a significant positive abnormal return each day, while the company that showed significant positive AR on t+19 and t+20 is the same, which is Imperial Brands. It is worth noting that companies including Pesco, GSK, and AstraZeneca did not show any significant abnormal return after the event day. The result from GSK and AstraZeneca indicates that the Queen's passing away does not have a lasting effect on the Biotech and Pharmaceuticals market.

Based on the result of CAR (Table 4), companies that show a positive significant cumulative abnormal return after the event include Shell, BP, Rio Tinto Group, Unilever, Lloyds Banking Group, Anglo-American, Aviva, Imperial Brands, and British American Tobacco, while the rest of the 20 sample companies showed a significantly negative CAR after the event. Specifically, Shell, BP, Aviva, Imperial Brands, and British American Tobacco began to show a discontinuous positive significant CAR before the event, and the significant positive impact of Shell, BP, Aviva, and Imperial Brands continues to t+20. Rio Tinto Group and Anglo American from the Mining industry experienced significantly positive CAR starting from t+14. Unilever and Lloyds Banking Group show a significant positive cumulative impact from t+11 to t+14 and from t+5 to t+10, respectively.

The company from the Biotech and Pharmaceutical industry, GSK, showed significant negative cumulative abnormal returns during the whole event window. Vodafone Group, Barclays, Prudential, BT Group, and BAE Systems all show consistently significant negative CARs on or after the day of the event, with Vodafone Group showing a significant negative CAR starting at t-0 and no significant CARs on days t+9 and t+10. BT Group experiences a persistent significantly negative CAR from t+8; Barclays, Prudential, and BAE Systems start a significant negative CAR earlier from t+1. Tesco and Sainsbury's, from the Retail market, and HSBC Holdings experienced significantly negative CAR starting from t+12, t+14, and t+13, respectively, with Sainsbury's not showing a significant CAR at t+17. Legal & General Group and AstraZeneca exhibited significantly negative CAR from t+13 to t+15 and t+17 to t+19, respectively, with AstraZeneca also showing a significant negative CAR on t+9.

Table 3: 20 Companies' abnormal return and T-statistics of AR.

Days	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
t-20	-0.01	-0.01	0.01	0.00	0.04*	-0.01	-0.01	-0.02	0.01	-0.06*
	(-0.78)	(-0.53)	(0.57)	(0.10)	(2.15)	(-1.28)	(-0.89)	(-1.60)	(0.47)	(-2.71)

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Table 3: (continued).

t-19	0.03	0.02	-0.01	-0.03*	0.01	0.00	0.00	0.01	0.01	-0.10*
	(1.73)	(1.53)	(-0.27)	(-1.99)	(0.42)	(-0.46)	(0.29)	(1.06)	(0.76)	(-4.63)
t-18	-0.01	0.00	-0.01	0.00	0.00	-0.01	0.00	0.00	-0.01	0.03
	(-0.45)	(-0.05)	(-0.46)	(0.09)	(-0.02)	(-0.62)	(0.00)	(-0.34)	(-0.37)	(1.53)
t-17	-0.02	-0.01	0.01	-0.02	0.00	0.01	0.00	-0.01	0.00	-0.03
	(-1.20)	(-0.98)	(0.51)	(-1.48)	(0.25)	(0.68)	(-0.38)	(-0.72)	(0.22)	(-1.50)
t-16	-0.01	0.00	0.00	0.04*	-0.01	0.00	0.01	0.00	-0.01	0.01
	(-0.82)	(-0.26)	(0.22)	(2.30)	(-0.35)	(-0.45)	(1.28)	(-0.05)	(-0.53)	(0.51)
t-15	0.01	0.01	0.00	0.00	0.00	0.01	-0.01	-0.01	0.01	-0.01
	(0.54)	(0.92)	(0.25)	(-0.15)	(-0.09)	(0.64)	(-0.87)	(-0.50)	(0.37)	(-0.25)
t-14	0.01	0.02	0.00	0.01	-0.05*	0.00	0.00	-0.01	-0.01	-0.01
	(0.70)	(1.36)	(0.24)	(0.57)	(-2.60)	(-0.21)	(-0.35)	(-1.11)	(-0.43)	(-0.58)
t-13	0.01	0.01	0.00	-0.01	0.00	0.02	0.00	-0.01	-0.02	0.02
	(0.74)	(0.73)	(-0.01)	(-0.49)	(-0.20)	(1.71)	(0.06)	(-0.79)	(-1.40)	(0.73)
t-12	0.00	0.01	0.00	0.01	-0.02	0.00	-0.01	0.00	0.00	0.00
	(-0.05)	(0.35)	(-0.06)	(0.59)	(-1.11)	(0.16)	(-1.21)	(0.35)	(-0.22)	(0.14)
t-11	0.04*	0.03*	-0.01	0.03	0.01	-0.01	-0.02	-0.01	0.01	-0.01
	(2.61)	(2.15)	(-0.73)	(1.87)	(0.42)	(-1.39)	(-1.48)	(-0.50)	(0.40)	(-0.66)
t-10	-0.01	-0.01	-0.02	-0.02	-0.01	0.01	-0.01	-0.02	0.00	0.00
	(-0.64)	(-0.80)	(-1.25)	(-1.25)	(-0.66)	(1.43)	(-0.69)	(-1.40)	(-0.14)	(-0.07)
t-9	0.01	0.01	-0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	-0.01
	(0.63)	(0.82)	(-0.64)	(0.23)	(-0.29)	(-0.67)	(0.14)	(0.00)	(0.21)	(-0.35)
t-8	0.01	0.01	-0.01	0.01	0.00	0.00	-0.01	0.01	0.00	0.01
	(0.88)	(0.40)	(-0.61)	(0.93)	(-0.06)	(-0.51)	(-0.72)	(0.72)	(-0.27)	(0.36)
t-7	0.01	-0.01	0.00	-0.02	0.01	0.01	0.01	0.02	0.02	0.01
	(0.80)	(-0.45)	(-0.14)	(-1.47)	(0.55)	(0.64)	(0.95)	(1.84)	(1.02)	(0.48)
t-6	-0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.02	-0.01
	(-0.64)	(-0.18)	(-0.22)	(0.21)	(0.37)	(0.02)	(0.53)	(0.90)	(1.26)	(-0.40)
t-5	0.01	0.03	-0.01	-0.01	0.00	0.00	-0.02	0.01	0.00	0.00
	(0.97)	(1.78)	(-0.47)	(-0.84)	(-0.08)	(-0.37)	(-1.61)	(0.62)	(0.07)	(-0.17)
t-4	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	-0.02
	(-0.16)	(0.01)	(0.24)	(0.03)	(0.66)	(-0.12)	(0.27)	(0.17)	(-0.23)	(-0.81)
t-3	0.01	0.02	0.01	0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00
	(0.52)	(1.32)	(0.36)	(0.43)	(-0.32)	(-0.72)	(-1.19)	(0.11)	(-0.47)	(0.16)
t-2	-0.02	-0.03	0.02	0.00	0.02	0.01	0.01	-0.01	0.04*	-0.01
	(-1.38)	(-1.82)	(1.26)	(-0.06)	(0.87)	(0.93)	(0.54)	(-0.74)	(2.58)	(-0.44)

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Table 3: (continued).

t-1	-0.01	-0.01	-0.02	-0.01	0.00	0.01	-0.02	-0.01	0.00	0.00
	(-0.70)	(-0.93)	(-1.15)	(-0.73)	(0.05)	(0.63)	(-1.83)	(-0.82)	(0.05)	(0.16)
t	0.00	0.00	-0.05*	0.02	0.00	0.00	-0.02*	0.00	0.01	0.00
	(-0.18)	(-0.12)	(-2.62)	(1.12)	(0.10)	(-0.51)	(-1.97)	(-0.05)	(0.52)	(-0.14)
t+1	0.00	0.00	0.00	0.02	0.01	0.01	0.00	-0.02	0.00	-0.01
	(-0.25)	(-0.10)	(0.21)	(1.02)	(0.28)	(0.56)	(-0.20)	(-1.44)	(-0.09)	(-0.27)
t+2	-0.01	-0.01	0.05*	0.00	-0.01	0.01	0.01	0.00	0.00	0.01
	(-0.87)	(-0.67)	(2.43)	(-0.01)	(-0.57)	(1.03)	(0.76)	(-0.12)	(-0.20)	(0.46)
t+3	0.02	0.02	-0.03	0.01	0.00	0.00	-0.01	0.00	0.01	-0.01
	(1.06)	(1.68)	(-1.33)	(0.42)	(0.21)	(0.47)	(-0.52)	(0.16)	(0.47)	(-0.26)
t+4	0.02	0.02	-0.03	-0.01	0.01	-0.01	-0.01	0.00	0.02	-0.01
	(1.53)	(1.54)	(-1.34)	(-0.36)	(0.66)	(-0.66)	(-0.78)	(-0.20)	(1.11)	(-0.49)
t+5	-0.01	-0.01	-0.02	-0.01	0.01	0.00	0.02	0.02	0.03*	0.00
	(-0.92)	(-0.98)	(-1.21)	(-0.38)	(0.64)	(0.09)	(1.67)	(1.53)	(1.99)	(0.15)
t+6	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	-0.01
	(-0.10)	(-0.11)	(0.03)	(0.71)	(0.32)	(-0.37)	(-0.37)	(0.55)	(0.90)	(-0.39)
t+7	0.01	0.01	-0.03	0.00	0.00	0.01	-0.01	0.02	0.03*	0.00
	(0.59)	(0.63)	(-1.54)	(-0.08)	(-0.08)	(1.18)	(-1.25)	(1.23)	(2.29)	(-0.13)
t+8	0.00	0.00	0.00	-0.01	0.00	0.02	0.02	-0.03*	-0.01	-0.01
	(0.32)	(-0.23)	(0.21)	(-0.73)	(0.10)	(1.69)	(1.60)	(-2.14)	(-0.45)	(-0.51)
t+9	0.01	0.02	0.01	0.04*	-0.01	0.01	0.01	-0.01	-0.03*	0.00
	(0.91)	(1.44)	(0.55)	(2.31)	(-0.65)	(0.56)	(0.64)	(-0.49)	(-2.22)	(0.02)
t+10	-0.03*	-0.03	-0.02	-0.01	-0.01	0.00	0.01	0.01	-0.02	0.03
	(-2.01)	(-1.84)	(-1.07)	(-0.56)	(-0.33)	(0.20)	(0.47)	(1.17)	(-1.57)	(1.26)
t+11	0.00	-0.01	-0.01	-0.01	-0.02	0.01	-0.01	-0.02	-0.04*	0.01
	(-0.22)	(-0.57)	(-0.65)	(-0.42)	(-0.96)	(1.27)	(-1.19)	(-1.78)	(-2.49)	(0.40)
t+12	0.02	0.01	0.00	0.04*	-0.03	0.00	-0.01	0.00	0.00	0.00
	(1.31)	(0.63)	(-0.24)	(2.33)	(-1.59)	(0.32)	(-0.62)	(-0.18)	(-0.05)	(-0.15)
t+13	0.00	0.01	-0.02	0.01	-0.06*	0.00	-0.01	-0.03*	0.01	0.02
	(0.17)	(0.41)	(-1.22)	(0.82)	(-3.39)	(-0.47)	(-0.53)	(-2.40)	(0.95)	(0.79)
t+14	0.01	0.02	-0.04*	0.03	-0.01	0.01	-0.02	-0.01	0.01	-0.01
	(0.81)	(1.13)	(-2.33)	(1.85)	(-0.56)	(1.22)	(-1.75)	(-1.01)	(0.43)	(-0.35)
t+15	0.00	0.00	0.03	0.00	0.02	-0.03*	-0.01	0.00	-0.01	-0.01

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Table 3: (continued).

	(-0.10)	(-0.07)	(1.64)	(-0.05)	(0.93)	(-2.92)	(-0.71)	(-0.22)	(-0.39)	(-0.44)
t+16	0.02	0.02	0.01	0.01	0.02	-0.02*	0.02*	-0.02	0.00	0.01
	(1.30)	(1.25)	(0.46)	(0.48)	(1.25)	(-2.52)	(2.10)	(-1.34)	(0.08)	(0.41)
t+17	-0.02	-0.01	-0.01	0.00	0.02	0.01	0.00	0.01	0.00	-0.01
	(-1.15)	(-0.83)	(-0.43)	(0.17)	(1.28)	(1.16)	(-0.34)	(0.84)	(0.29)	(-0.55)
t+18	0.02	0.02	-0.04*	0.01	-0.03	0.00	-0.02	-0.01	0.01	0.00
	(1.47)	(1.29)	(-2.07)	(0.33)	(-1.84)	(-0.18)	(-1.72)	(-1.20)	(0.34)	(0.16)
t+19	-0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	(-1.32)	(0.76)	(-0.25)	(0.31)	(0.27)	(-0.04)	(-0.41)	(0.54)	(-0.30)	(0.01)
t+20	0.01	0.02	0.01	0.00	-0.01	0.00	-0.01	-0.01	0.00	0.02
	(0.95)	(1.34)	(0.29)	(0.19)	(-0.52)	(-0.07)	(-0.87)	(-0.74)	(-0.03)	(0.73)

Note(s): This table presents the results of the event study analysis for the top 20 companies. * indicates the value is significant at 5% level. The value listed in the bracket represents the t-statistics. The number in the first row corresponds to the serial number of each company，which is shown in Table 1.

Table 3: 20 Companies' abnormal return and T-statistics of AR (continued).

Days	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
t-20	0.01	0.12*	0.00	-0.01	0.02	-0.01	-0.50	-0.51	-0.02	-0.50
	(0.34)	(5.03)	(-0.13)	(-0.41)	(1.00)	(-1.15)	(-1.09)	(-1.17)	(-1.15)	(-1.22)
t-19	0.03	0.00	0.01	-0.03	0.00	0.01	-0.13	-0.13	0.00	-0.13
	(1.33)	(0.16)	(1.04)	(-1.95)	(-0.05)	(1.47)	(-0.28)	(-0.31)	(0.02)	(-0.33)
t-18	-0.02	0.01	0.00	0.01	0.00	0.00	-0.61	-0.61	0.00	-0.60
	(-1.10)	(0.23)	(-0.42)	(1.13)	(-0.07)	(-0.24)	(-1.35)	(-1.40)	(-0.32)	(-1.46)
t-17	-0.02	0.00	0.00	0.02	0.01	0.01	-0.45	-0.45	0.00	-0.42
	(-1.15)	(-0.03)	(0.11)	(1.63)	(0.31)	(0.94)	(-0.99)	(-1.04)	(-0.19)	(-1.02)
t-16	0.03	-0.02	0.01	0.00	0.01	0.01	-0.58	-0.56	0.02	-0.52
	(1.58)	(-0.81)	(0.57)	(-0.26)	(0.53)	(1.01)	(-1.27)	(-1.30)	(1.28)	(-1.25)
t-15	-0.01	0.00	0.01	0.00	-0.01	0.01	-0.27	-0.30	-0.02	-0.26
	(-0.39)	(0.05)	(0.71)	(0.32)	(-0.44)	(1.09)	(-0.60)	(-0.70)	(-1.49)	(-0.63)
t-14	-0.02	-0.05	-0.01	0.00	0.00	0.00	-0.57	-0.53	0.00	-0.53
	(-1.29)	(-1.90)	(-0.50)	(-0.21)	(0.00)	(-0.41)	(-1.25)	(-1.23)	(-0.13)	(-1.30)
t-13	-0.02	-0.01	0.00	0.02	-0.01	0.01	-0.47	-0.46	0.00	-0.42
	(-1.22)	(-0.24)	(-0.17)	(1.48)	(-0.37)	(0.65)	(-1.04)	(-1.06)	(-0.05)	(-1.03)
t-12	0.01	-0.01	0.01	0.02	0.00	0.01	-0.30	-0.30	0.00	-0.27
	(0.41)	(-0.41)	(0.72)	(1.34)	(-0.07)	(1.31)	(-0.66)	(-0.70)	(-0.29)	(-0.67)
t-11	0.04*	0.00	-0.01	-0.02	-0.01	-0.02*	-0.09	-0.09	0.01	-0.12

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Table 3: (continued).

	(2.13)	(0.10)	(-1.27)	(-1.33)	(-0.62)	(-2.06)	(-0.20)	(-0.20)	(0.79)	(-0.30)
t-10	-0.02	0.00	0.00	0.01	-0.02	0.01	-0.29	-0.31	-0.02	-0.27
	(-0.95)	(-0.20)	(-0.23)	(1.08)	(-1.13)	(0.90)	(-0.64)	(-0.72)	(-1.44)	(-0.65)
t-9	0.01	0.00	0.00	0.00	-0.01	0.00	-0.44	-0.46	-0.01	-0.42
	(0.68)	(-0.03)	(-0.24)	(0.33)	(-0.28)	(-0.33)	(-0.97)	(-1.06)	(-0.53)	(-1.03)
t-8	0.01	0.00	0.00	0.00	-0.02	0.01	-0.06	-0.06	0.00	-0.06
	(0.62)	(-0.06)	(0.43)	(-0.05)	(-1.17)	(0.88)	(-0.13)	(-0.13)	(-0.14)	(-0.15)
t-7	-0.03	0.00	0.01	-0.03*	0.02	0.00	0.06	0.03	0.01	-0.01
	(-1.73)	(0.14)	(0.70)	(-2.19)	(1.03)	(0.36)	(0.13)	(0.06)	(0.78)	(-0.03)
t-6	0.01	0.02	0.02	-0.02	0.00	0.01	0.13	0.10	0.00	0.07
	(0.77)	(0.70)	(1.72)	(-1.71)	(-0.25)	(0.51)	(0.28)	(0.24)	(0.13)	(0.17)
t-5	-0.01	0.00	0.01	0.01	-0.01	0.01	0.51	0.47	-0.01	0.43
	(-0.52)	(0.20)	(1.35)	(0.56)	(-0.33)	(1.04)	(1.12)	(1.09)	(-1.09)	(1.04)
t-4	0.00	0.02	-0.01	-0.01	0.01	-0.01	-1.27*	-1.21*	-0.01	-1.20*
	(0.04)	(0.70)	(-1.27)	(-0.91)	(0.42)	(-0.94)	(-2.80)	(-2.80)	(-0.95)	(-2.91)
t-3	0.01	0.00	0.01	0.00	0.01	0.00	-0.45	-0.45	-0.01	-0.39
	(0.30)	(-0.13)	(1.08)	(0.08)	(0.49)	(0.17)	(-0.99)	(-1.04)	(-0.94)	(-0.94)
t-2	0.01	0.02	0.00	-0.02	0.02	0.00	-0.48	-0.46	-0.02	-0.46
	(0.60)	(1.01)	(-0.02)	(-1.15)	(1.23)	(0.02)	(-1.05)	(-1.06)	(-1.37)	(-1.12)
t-1	-0.01	0.00	0.01	-0.01	-0.01	0.00	0.01	0.00	0.01	0.00
	(-0.48)	(0.11)	(0.60)	(-0.39)	(-0.43)	(0.13)	(0.02)	(0.00)	(0.46)	(-0.01)
t	0.01	0.01	0.00	0.01	-0.05*	0.00	-0.55	-0.53	-0.02	-0.52
	(0.73)	(0.32)	(0.17)	(0.53)	(-2.31)	(-0.03)	(-1.21)	(-1.22)	(-1.60)	(-1.25)
t+1	0.03	0.00	0.00	-0.01	0.02	-0.01	-0.99*	-0.95*	0.00	-0.93*
	(1.56)	(0.03)	(-0.27)	(-0.91)	(1.05)	(-0.56)	(-2.17)	(-2.19)	(-0.30)	(-2.25)
t+2	0.00	-0.01	-0.01	0.00	0.05*	-0.01	-1.19*	-1.16*	0.02	-1.11*
	(-0.10)	(-0.61)	(-1.39)	(-0.21)	(2.36)	(-0.67)	(-2.61)	(-2.69)	(1.30)	(-2.68)
t+3	-0.01	0.01	0.01	-0.02	-0.01	0.00	0.17	0.15	0.00	0.14
	(-0.30)	(0.37)	(0.63)	(-1.49)	(-0.46)	(0.34)	(0.38)	(0.34)	(-0.14)	(0.35)
t+4	0.00	0.01	-0.01	-0.01	-0.03	-0.02	0.32	0.29	0.00	0.25
	(-0.08)	(0.28)	(-1.08)	(-0.49)	(-1.29)	(-1.59)	(0.71)	(0.66)	(-0.24)	(0.59)
t+5	-0.01	0.01	0.00	0.00	0.00	0.01	-0.41	-0.41	0.00	-0.40
	(-0.68)	(0.51)	(0.42)	(-0.29)	(-0.25)	(0.73)	(-0.91)	(-0.94)	(0.33)	(-0.98)
t+6	0.01	0.00	0.00	0.00	0.01	0.01	-0.09	-0.09	-0.01	-0.11
	(0.56)	(0.12)	(0.34)	(0.23)	(0.49)	(0.80)	(-0.20)	(-0.20)	(-0.66)	(-0.28)
t+7	0.00	0.00	0.01	0.00	-0.04	0.01	-0.10	-0.10	-0.01	-0.10
	(-0.26)	(-0.01)	(0.60)	(-0.06)	(-1.93)	(1.23)	(-0.21)	(-0.24)	(-0.71)	(-0.24)

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Table 3: (continued).

t+8	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.72	-0.68	-0.02	-0.61
	(0.24)	(-0.17)	(-1.24)	(-0.36)	(0.07)	(-1.26)	(-1.59)	(-1.58)	(-1.40)	(-1.49)
t+9	0.02	0.00	0.01	-0.01	0.01	0.01	0.13	0.10	0.01	0.11
	(1.30)	(0.15)	(1.28)	(-0.61)	(0.56)	(0.91)	(0.29)	(0.23)	(0.41)	(0.26)
t+10	-0.03	0.00	-0.01	0.02	0.00	-0.01	0.55	0.54	-0.02	0.48
	(-1.57)	(0.00)	(-0.60)	(1.74)	(-0.17)	(-0.91)	(1.22)	(1.25)	(-1.30)	(1.16)
t+11	-0.02	-0.02	0.01	0.01	-0.01	0.00	-0.44	-0.40	-0.01	-0.37
	(-1.09)	(-0.77)	(1.32)	(0.88)	(-0.27)	(0.29)	(-0.96)	(-0.92)	(-0.77)	(-0.90)
t+12	0.02	-0.01	0.01	-0.02	-0.01	0.00	-0.15	-0.17	-0.02	-0.16
	(1.00)	(-0.31)	(0.48)	(-1.45)	(-0.50)	(-0.46)	(-0.33)	(-0.39)	(-1.35)	(-0.40)
t+13	0.03	-0.05*	-0.01	0.01	-0.04	0.00	-0.57	-0.56	0.01	-0.50
	(1.50)	(-2.14)	(-0.84)	(0.91)	(-1.81)	(0.23)	(-1.26)	(-1.29)	(0.96)	(-1.22)
t+14	0.04*	-0.01	0.01	0.00	-0.05*	-0.02*	0.44	0.42	-0.03*	0.43
	(1.99)	(-0.28)	(0.90)	(-0.09)	(-2.29)	(-2.42)	(0.96)	(0.97)	(-2.32)	(1.03)
t+15	-0.01	0.03	-0.01	0.00	0.01	-0.02	-0.49	-0.44	0.00	-0.50
	(-0.57)	(1.08)	(-1.30)	(-0.11)	(0.61)	(-1.50)	(-1.07)	(-1.01)	(-0.18)	(-1.21)
t+16	0.02	0.02	0.00	-0.02	0.01	0.00	-0.50	-0.51	0.04*	-0.46
	(1.00)	(0.93)	(0.11)	(-1.27)	(0.66)	(0.31)	(-1.10)	(-1.17)	(3.16)	(-1.12)
t+17	0.01	0.00	-0.01	-0.01	0.01	-0.01	-1.63*	-1.54*	0.00	-1.50*
	(0.34)	(-0.02)	(-1.02)	(-0.46)	(0.60)	(-1.42)	(-3.59)	(-3.57)	(-0.03)	(-3.64)
t+18	-0.01	0.00	0.01	0.00	-0.04*	0.01	-0.18	-0.18	-0.02	-0.16
	(-0.45)	(-0.06)	(1.06)	(0.10)	(-2.17)	(0.95)	(-0.39)	(-0.42)	(-1.42)	(-0.38)
t+19	-0.02	0.00	0.03*	-0.01	-0.01	0.00	-0.03	0.00	-0.01	-0.03
	(-1.00)	(0.03)	(2.92)	(-0.42)	(-0.41)	(0.00)	(-0.06)	(-0.01)	(-0.48)	(-0.08)
t+20	0.00	0.00	0.02*	0.02	0.00	0.01	-0.36	-0.36	0.00	-0.31
	(-0.03)	(-0.02)	(2.31)	(1.46)	(0.14)	(1.42)	(-0.79)	(-0.84)	(-0.31)	(-0.74)

Note(s): This table presents the results of the event study analysis for the top 20 companies. * indicates the value is significant at 5% level. The value listed in the bracket represents the t-statistics. The number in the first row corresponds to the serial number of each company，which is shown in Table 1.

Table 4: 20 Companies' cumulative abnormal return and T-statistics of CAR.

Days	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
t-20	-0.01	-0.01	0.01	0.00	0.04	-0.01	-0.01	-0.02	0.01	-0.06*
	(-0.35)	(-0.18)	(0.13)	(0.03)	(0.93)	(-0.54)	(-0.23)	(-0.59)	(0.16)	(-2.18)
t-19	0.01	0.01	0.01	-0.03	0.05	-0.02	-0.01	-0.01	0.02	-0.15*
	(0.42)	(0.33)	(0.07)	(-0.60)	(1.11)	(-0.74)	(-0.15)	(-0.20)	(0.41)	(-5.89)
t-18	0.01	0.01	0.00	-0.03	0.05	-0.02	-0.01	-0.01	0.01	-0.12*
	(0.22)	(0.32)	(-0.03)	(-0.57)	(1.10)	(-1.00)	(-0.16)	(-0.33)	(0.29)	(-4.67)

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Table 4: (continued).

t-17	-0.01	0.00	0.01	-0.05	0.05	-0.02	-0.01	-0.02	0.02	-0.15*
	(-0.31)	(-0.01)	(0.08)	(-1.04)	(1.20)	(-0.71)	(-0.25)	(-0.59)	(0.36)	(-5.87)
t-16	-0.02	0.00	0.01	-0.01	0.04	-0.02	0.00	-0.02	0.01	-0.14*
	(-0.68)	(-0.10)	(0.13)	(-0.31)	(1.05)	(-0.90)	(0.08)	(-0.61)	(0.18)	(-5.46)
t-15	-0.01	0.01	0.02	-0.02	0.04	-0.01	-0.01	-0.03	0.01	-0.15*
	(-0.44)	(0.21)	(0.18)	(-0.36)	(1.01)	(-0.62)	(-0.15)	(-0.80)	(0.30)	(-5.66)
t-14	0.00	0.03	0.02	-0.01	0.00	-0.02	-0.01	-0.04	0.01	-0.16*
	(-0.12)	(0.67)	(0.23)	(-0.17)	(-0.11)	(-0.72)	(-0.24)	(-1.21)	(0.16)	(-6.13)
t-13	0.01	0.04	0.02	-0.02	-0.01	0.00	-0.01	-0.05	-0.01	-0.14*
	(0.21)	(0.91)	(0.23)	(-0.33)	(-0.20)	(0.01)	(-0.22)	(-1.50)	(-0.31)	(-5.54)
t-12	0.01	0.04	0.02	-0.01	-0.03	0.00	-0.02	-0.05	-0.02	-0.14*
	(0.19)	(1.03)	(0.22)	(-0.14)	(-0.67)	(0.08)	(-0.53)	(-1.37)	(-0.38)	(-5.43)
t-11	0.05	0.08	0.00	0.02	-0.02	-0.01	-0.04	-0.05	-0.01	-0.16*
	(1.36)	(1.75)	(0.06)	(0.45)	(-0.49)	(-0.51)	(-0.91)	(-1.55)	(-0.25)	(-5.96)
t-10	0.04	0.06	-0.02	0.00	-0.03	0.00	-0.05	-0.07*	-0.01	-0.16*
	(1.07)	(1.48)	(-0.22)	(0.05)	(-0.78)	(0.09)	(-1.09)	(-2.07)	(-0.29)	(-6.01)
t-9	0.04	0.08	-0.03	0.01	-0.04	0.00	-0.05	-0.07*	-0.01	-0.16*
	(1.35)	(1.76)	(-0.36)	(0.12)	(-0.91)	(-0.19)	(-1.05)	(-2.08)	(-0.22)	(-6.29)
t-8	0.06	0.08	-0.04	0.02	-0.04	-0.01	-0.06	-0.06	-0.01	-0.16*
	(1.74)	(1.89)	(-0.49)	(0.42)	(-0.93)	(-0.41)	(-1.24)	(-1.81)	(-0.31)	(-6.00)
t-7	0.07*	0.08	-0.05	0.00	-0.03	0.00	-0.04	-0.04	0.00	-0.15*
	(2.10)	(1.74)	(-0.52)	(-0.04)	(-0.69)	(-0.13)	(-1.00)	(-1.12)	(0.03)	(-5.61)
t-6	0.06	0.07	-0.05	0.00	-0.02	0.00	-0.04	-0.03	0.02	-0.16*
	(1.82)	(1.68)	(-0.57)	(0.02)	(-0.53)	(-0.13)	(-0.86)	(-0.79)	(0.45)	(-5.93)
t-5	0.07*	0.10*	-0.06	-0.01	-0.02	-0.01	-0.06	-0.02	0.02	-0.16*
	(2.25)	(2.28)	(-0.67)	(-0.25)	(-0.57)	(-0.28)	(-1.28)	(-0.56)	(0.47)	(-6.07)
t-4	0.07*	0.10*	-0.05	-0.01	-0.01	-0.01	-0.05	-0.02	0.02	-0.18*
	(2.18)	(2.28)	(-0.62)	(-0.23)	(-0.28)	(-0.33)	(-1.20)	(-0.49)	(0.40)	(-6.72)
t-3	0.08*	0.12*	-0.05	0.00	-0.02	-0.01	-0.07	-0.02	0.01	-0.17*
	(2.41)	(2.72)	(-0.54)	(-0.10)	(-0.42)	(-0.63)	(-1.51)	(-0.45)	(0.24)	(-6.60)
t-2	0.06	0.09*	-0.02	-0.01	0.00	-0.01	-0.06	-0.02	0.05	-0.18*
	(1.80)	(2.11)	(-0.26)	(-0.12)	(-0.04)	(-0.24)	(-1.37)	(-0.73)	(1.10)	(-6.95)
t-1	0.05	0.08	-0.04	-0.02	0.00	0.00	-0.08	-0.03	0.05	-0.18*
	(1.48)	(1.80)	(-0.52)	(-0.35)	(-0.02)	(0.02)	(-1.84)	(-1.03)	(1.12)	(-6.82)
t	0.05	0.08	-0.09	0.00	0.00	0.00	-0.11*	-0.03	0.06	-0.18*
	(1.40)	(1.76)	(-1.09)	(0.01)	(0.02)	(-0.19)	(-2.35)	(-1.05)	(1.29)	(-6.93)
t+1	0.04	0.07	-0.09	0.02	0.01	0.00	-0.11*	-0.05	0.06	-0.19*

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Table 4: (continued).

	(1.29)	(1.73)	(-1.05)	(0.33)	(0.14)	(0.04)	(-2.40)	(-1.59)	(1.26)	(-7.15)
t+2	0.03	0.07	-0.04	0.02	0.00	0.01	-0.10*	-0.05	0.05	-0.18*
	(0.90)	(1.50)	(-0.51)	(0.33)	(-0.10)	(0.48)	(-2.21)	(-1.63)	(1.19)	(-6.78)
t+3	0.05	0.09*	-0.07	0.02	0.00	0.02	-0.11*	-0.05	0.06	-0.18*
	(1.38)	(2.07)	(-0.80)	(0.46)	(-0.01)	(0.67)	(-2.34)	(-1.57)	(1.35)	(-6.99)
t+4	0.07*	0.11*	-0.10	0.02	0.01	0.01	-0.11*	-0.05	0.08	-0.19*
	(2.06)	(2.58)	(-1.10)	(0.35)	(0.27)	(0.39)	(-2.54)	(-1.65)	(1.72)	(-7.38)
t+5	0.05	0.10*	-0.12	0.01	0.02	0.01	-0.09*	-0.04	0.11*	-0.19*
	(1.65)	(2.25)	(-1.37)	(0.23)	(0.55)	(0.43)	(-2.11)	(-1.08)	(2.39)	(-7.26)
t+6	0.05	0.10*	-0.12	0.02	0.03	0.01	-0.10*	-0.03	0.12*	-0.20*
	(1.60)	(2.22)	(-1.36)	(0.45)	(0.69)	(0.27)	(-2.21)	(-0.87)	(2.69)	(-7.57)
t+7	0.06	0.11*	-0.15	0.02	0.03	0.02	-0.11*	-0.01	0.15*	-0.20*
	(1.87)	(2.43)	(-1.70)	(0.43)	(0.65)	(0.77)	(-2.53)	(-0.42)	(3.46)	(-7.68)
t+8	0.07*	0.10*	-0.14	0.01	0.03	0.03	-0.10*	-0.04	0.15*	-0.21*
	(2.01)	(2.35)	(-1.65)	(0.20)	(0.70)	(1.48)	(-2.12)	(-1.21)	(3.31)	(-8.09)
t+9	0.08*	0.12*	-0.13	0.05	0.02	0.04	-0.09	-0.05	0.11*	-0.21*
	(2.42)	(2.83)	(-1.53)	(0.93)	(0.42)	(1.72)	(-1.95)	(-1.39)	(2.56)	(-8.07)
t+10	0.05	0.10*	-0.15	0.04	0.01	0.04	-0.08	-0.03	0.09*	-0.18*
	(1.52)	(2.22)	(-1.76)	(0.75)	(0.27)	(1.80)	(-1.83)	(-0.96)	(2.04)	(-7.06)
t+11	0.05	0.09*	-0.16	0.03	-0.01	0.05*	-0.10*	-0.05	0.05	-0.18*
	(1.42)	(2.03)	(-1.91)	(0.62)	(-0.14)	(2.34)	(-2.14)	(-1.62)	(1.20)	(-6.74)
t+12	0.07*	0.10*	-0.17	0.07	-0.03	0.06*	-0.10*	-0.06	0.05	-0.18*
	(2.01)	(2.24)	(-1.96)	(1.36)	(-0.83)	(2.47)	(-2.30)	(-1.69)	(1.19)	(-6.86)
t+13	0.07*	0.10*	-0.19*	0.08	-0.09*	0.05*	-0.11*	-0.09*	0.07	-0.16*
	(2.08)	(2.37)	(-2.23)	(1.62)	(-2.29)	(2.28)	(-2.43)	(-2.58)	(1.50)	(-6.22)
t+14	0.08*	0.12*	-0.24*	0.11*	-0.10*	0.06*	-0.13*	-0.10*	0.07	-0.17*
	(2.44)	(2.75)	(-2.74)	(2.21)	(-2.53)	(2.79)	(-2.88)	(-2.95)	(1.65)	(-6.50)
t+15	0.08*	0.12*	-0.21*	0.11*	-0.09*	0.04	-0.14*	-0.10*	0.07	-0.18*
	(2.40)	(2.72)	(-2.38)	(2.20)	(-2.13)	(1.56)	(-3.07)	(-3.04)	(1.52)	(-6.86)
t+16	0.10*	0.14*	-0.20*	0.11*	-0.07	0.01	-0.11*	-0.12*	0.07	-0.17*
	(2.98)	(3.14)	(-2.28)	(2.35)	(-1.59)	(0.50)	(-2.53)	(-3.53)	(1.55)	(-6.52)
t+17	0.08*	0.12*	-0.21*	0.12*	-0.04	0.02	-0.12*	-0.11*	0.07	-0.18*
	(2.47)	(2.86)	(-2.37)	(2.40)	(-1.04)	(0.98)	(-2.61)	(-3.22)	(1.64)	(-6.96)
t+18	0.10*	0.14*	-0.24*	0.12*	-0.08	0.02	-0.14*	-0.12*	0.08	-0.18*
	(3.13)	(3.29)	(-2.83)	(2.51)	(-1.83)	(0.91)	(-3.06)	(-3.66)	(1.76)	(-6.83)
t+19	0.08*	0.15*	-0.25*	0.13*	-0.07	0.02	-0.14*	-0.11*	0.07	-0.18*
	(2.54)	(3.55)	(-2.89)	(2.60)	(-1.72)	(0.89)	(-3.16)	(-3.46)	(1.66)	(-6.83)

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Table 4: (continued).

t+20	0.10*	0.17*	-0.24*	0.13*	-0.08	0.02	-0.15*	-0.12*	0.07	-0.16*
	(2.96)	(4.00)	(-2.82)	(2.66)	(-1.94)	(0.87)	(-3.39)	(-3.74)	(1.65)	(-6.24)

Note(s): This table presents the results of the event study analysis for the top 20 companies. * indicates the value is significant at 5% level. The value listed in the bracket represents the t-statistics. The number in the first row corresponds to the serial number of each company，which is shown in Table 1.

Table 4: 20 Companies' cumulative abnormal return and T-statistics of CAR (continued).

Days	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
t-20	0.01	0.12*	0.00	-0.01	0.02	-0.01	-0.50	-0.51	-0.02	-0.50
	(0.18)	(3.95)	(-0.06)	(-0.14)	(0.38)	(-0.59)	(-0.14)	(-0.14)	(-0.26)	(-0.15)
t-19	0.03	0.12*	0.01	-0.03	0.02	0.00	-0.63	-0.64	-0.02	-0.64
	(0.89)	(4.08)	(0.45)	(-0.79)	(0.35)	(0.17)	(-0.18)	(-0.18)	(-0.25)	(-0.19)
t-18	0.01	0.13*	0.01	-0.02	0.02	0.00	-1.24	-1.24	-0.02	-1.24
	(0.31)	(4.25)	(0.24)	(-0.41)	(0.33)	(0.04)	(-0.35)	(-0.35)	(-0.33)	(-0.36)
t-17	-0.01	0.13*	0.01	0.01	0.02	0.01	-1.69	-1.69	-0.02	-1.66
	(-0.30)	(4.23)	(0.29)	(0.13)	(0.44)	(0.53)	(-0.47)	(-0.48)	(-0.37)	(-0.48)
t-16	0.02	0.11*	0.01	0.00	0.03	0.02	-2.27	-2.25	0.00	-2.18
	(0.54)	(3.59)	(0.57)	(0.05)	(0.64)	(1.05)	(-0.64)	(-0.64)	(-0.08)	(-0.63)
t-15	0.01	0.11*	0.02	0.01	0.03	0.03	-2.54	-2.56	-0.02	-2.44
	(0.33)	(3.63)	(0.92)	(0.15)	(0.48)	(1.61)	(-0.71)	(-0.73)	(-0.42)	(-0.71)
t-14	-0.01	0.07*	0.01	0.00	0.03	0.03	-3.11	-3.09	-0.03	-2.97
	(-0.36)	(2.14)	(0.67)	(0.08)	(0.48)	(1.40)	(-0.87)	(-0.88)	(-0.45)	(-0.86)
t-13	-0.04	0.06	0.01	0.02	0.02	0.03	-3.58	-3.54	-0.03	-3.39
	(-1.01)	(1.95)	(0.59)	(0.58)	(0.34)	(1.73)	(-1.01)	(-1.01)	(-0.46)	(-0.99)
t-12	-0.03	0.05	0.02	0.04	0.02	0.05*	-3.88	-3.85	-0.03	-3.67
	(-0.79)	(1.63)	(0.94)	(1.02)	(0.31)	(2.41)	(-1.09)	(-1.09)	(-0.52)	(-1.07)
t-11	0.01	0.05	0.01	0.02	0.00	0.03	-3.98	-3.94	-0.02	-3.79
	(0.35)	(1.71)	(0.32)	(0.58)	(0.08)	(1.35)	(-1.12)	(-1.12)	(-0.34)	(-1.10)
t-10	-0.01	0.05	0.00	0.04	-0.02	0.04	-4.27	-4.25	-0.04	-4.06
	(-0.15)	(1.55)	(0.21)	(0.94)	(-0.34)	(1.81)	(-1.20)	(-1.21)	(-0.67)	(-1.18)
t-9	0.01	0.05	0.00	0.04	-0.02	0.03	-4.71	-4.70	-0.05	-4.49
	(0.21)	(1.52)	(0.09)	(1.05)	(-0.44)	(1.64)	(-1.32)	(-1.34)	(-0.79)	(-1.31)
t-8	0.02	0.04	0.01	0.04	-0.05	0.04*	-4.77	-4.76	-0.05	-4.55
	(0.54)	(1.47)	(0.30)	(1.04)	(-0.88)	(2.09)	(-1.34)	(-1.35)	(-0.82)	(-1.32)
t-7	-0.01	0.05	0.01	0.01	-0.03	0.04*	-4.71	-4.74	-0.04	-4.56
	(-0.38)	(1.58)	(0.64)	(0.30)	(-0.50)	(2.28)	(-1.32)	(-1.35)	(-0.64)	(-1.33)
t-6	0.00	0.06*	0.03	-0.01	-0.03	0.05*	-4.58	-4.63	-0.04	-4.49
	(0.03)	(2.13)	(1.48)	(-0.27)	(-0.59)	(2.54)	(-1.29)	(-1.32)	(-0.61)	(-1.31)

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Table 4: (continued).

t-5	-0.01	0.07*	0.05*	0.00	-0.04	0.06*	-4.07	-4.16	-0.05	-4.06
	(-0.25)	(2.29)	(2.14)	(-0.08)	(-0.71)	(3.07)	(-1.14)	(-1.18)	(-0.86)	(-1.18)
t-4	-0.01	0.09*	0.03	-0.02	-0.03	0.05*	-5.35	-5.37	-0.06	-5.26
	(-0.23)	(2.84)	(1.52)	(-0.39)	(-0.55)	(2.59)	(-1.50)	(-1.53)	(-1.07)	(-1.53)
t-3	0.00	0.08*	0.04*	-0.01	-0.02	0.05*	-5.80	-5.82	-0.08	-5.65
	(-0.07)	(2.74)	(2.04)	(-0.36)	(-0.37)	(2.68)	(-1.63)	(-1.66)	(-1.28)	(-1.64)
t-2	0.01	0.11*	0.04*	-0.03	0.00	0.05*	-6.28	-6.28	-0.10	-6.11
	(0.25)	(3.53)	(2.03)	(-0.74)	(0.09)	(2.69)	(-1.76)	(-1.79)	(-1.59)	(-1.78)
t-1	0.00	0.11*	0.05*	-0.03	0.00	0.05*	-6.27	-6.28	-0.09	-6.12
	(0.00)	(3.62)	(2.33)	(-0.87)	(-0.07)	(2.76)	(-1.76)	(-1.79)	(-1.49)	(-1.78)
t	0.01	0.12*	0.05*	-0.03	-0.05	0.05*	-6.82	-6.81	-0.11	-6.63
	(0.39)	(3.87)	(2.41)	(-0.70)	(-0.93)	(2.75)	(-1.91)	(-1.94)	(-1.85)	(-1.93)
t+1	0.04	0.12*	0.05*	-0.04	-0.03	0.05*	-7.81*	-7.75*	-0.11	-7.56*
	(1.22)	(3.89)	(2.28)	(-1.00)	(-0.54)	(2.46)	(-2.19)	(-2.21)	(-1.92)	(-2.20)
t+2	0.04	0.10*	0.03	-0.04	0.02	0.04*	-9.00*	-8.92*	-0.10	-8.67*
	(1.17)	(3.41)	(1.60)	(-1.07)	(0.34)	(2.12)	(-2.53)	(-2.54)	(-1.62)	(-2.52)
t+3	0.04	0.11*	0.04	-0.06	0.01	0.05*	-8.82*	-8.77*	-0.10	-8.52*
	(1.01)	(3.71)	(1.91)	(-1.57)	(0.17)	(2.29)	(-2.48)	(-2.49)	(-1.66)	(-2.48)
t+4	0.03	0.12*	0.03	-0.07	-0.02	0.03	-8.5*	-8.48*	-0.10	-8.28*
	(0.96)	(3.93)	(1.38)	(-1.73)	(-0.32)	(1.47)	(-2.39)	(-2.41)	(-1.71)	(-2.41)
t+5	0.02	0.13*	0.03	-0.07	-0.02	0.04	-8.92*	-8.89*	-0.10	-8.68*
	(0.60)	(4.32)	(1.58)	(-1.83)	(-0.41)	(1.85)	(-2.50)	(-2.53)	(-1.64)	(-2.53)
t+6	0.03	0.13*	0.04	-0.07	-0.01	0.04*	-9.01*	-8.98*	-0.11	-8.80*
	(0.90)	(4.41)	(1.75)	(-1.75)	(-0.23)	(2.26)	(-2.53)	(-2.55)	(-1.78)	(-2.56)
t+7	0.03	0.13*	0.04*	-0.07	-0.05	0.06*	-9.10*	-9.08*	-0.12	-8.90*
	(0.76)	(4.41)	(2.05)	(-1.77)	(-0.95)	(2.89)	(-2.56)	(-2.58)	(-1.94)	(-2.59)
t+8	0.03	0.13*	0.03	-0.07	-0.05	0.04*	-9.83*	-9.76*	-0.14*	-9.51*
	(0.89)	(4.28)	(1.44)	(-1.89)	(-0.92)	(2.24)	(-2.76)	(-2.78)	(-2.26)	(-2.77)
t+9	0.06	0.13*	0.04*	-0.08*	-0.04	0.05*	-9.70*	-9.66*	-0.13*	-9.40*
	(1.58)	(4.40)	(2.06)	(-2.09)	(-0.71)	(2.71)	(-2.72)	(-2.75)	(-2.17)	(-2.74)
t+10	0.03	0.13*	0.04	-0.06	-0.04	0.04*	-9.14*	-9.13*	-0.15*	-8.93*
	(0.75)	(4.40)	(1.77)	(-1.51)	(-0.78)	(2.25)	(-2.57)	(-2.60)	(-2.46)	(-2.60)
t+11	0.01	0.12*	0.05*	-0.05	-0.05	0.05*	-9.58*	-9.52*	-0.16*	-9.30*
	(0.17)	(3.80)	(2.41)	(-1.22)	(-0.88)	(2.40)	(-2.69)	(-2.71)	(-2.63)	(-2.71)
t+12	0.02	0.11*	0.06*	-0.07	-0.06	0.04*	-9.73*	-9.69*	-0.18*	-9.46*
	(0.70)	(3.55)	(2.65)	(-1.70)	(-1.06)	(2.16)	(-2.73)	(-2.76)	(-2.94)	(-2.75)

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Table 4: (continued).

t+13	0.05	0.06	0.05*	-0.05	-0.09	0.04*	-10.31*	-10.25*	-0.16*	-9.96*
	(1.50)	(1.87)	(2.24)	(-1.40)	(-1.74)	(2.27)	(-2.89)	(-2.91)	(-2.72)	(-2.90)
t+14	0.09*	0.05	0.06*	-0.06	-0.14*	0.02	-9.87*	-9.83*	-0.19*	-9.54*
	(2.56)	(1.65)	(2.68)	(-1.43)	(-2.60)	(1.03)	(-2.77)	(-2.80)	(-3.25)	(-2.78)
t+15	0.08*	0.08*	0.04*	-0.06	-0.13*	0.01	-10.35*	-10.27*	-0.20*	-10.04*
	(2.25)	(2.50)	(2.04)	(-1.46)	(-2.37)	(0.26)	(-2.91)	(-2.92)	(-3.29)	(-2.92)
t+16	0.10*	0.10*	0.05*	-0.07	-0.11*	0.01	-10.85*	-10.77*	-0.15*	-10.50*
	(2.79)	(3.22)	(2.09)	(-1.89)	(-2.12)	(0.42)	(-3.05)	(-3.06)	(-2.58)	(-3.06)
t+17	0.11*	0.10*	0.03	-0.08*	-0.10	-0.01	-12.49*	-12.31*	-0.15*	-12.00*
	(2.97)	(3.20)	(1.59)	(-2.04)	(-1.90)	(-0.32)	(-3.51)	(-3.50)	(-2.58)	(-3.49)
t+18	0.10*	0.10*	0.05*	-0.08*	-0.14*	0.00	-12.67*	-12.50*	-0.17*	-12.16*
	(2.73)	(3.16)	(2.11)	(-2.01)	(-2.71)	(0.17)	(-3.56)	(-3.55)	(-2.90)	(-3.54)
t+19	0.08*	0.10*	0.08*	-0.08*	-0.15*	0.00	-12.69*	-12.50*	-0.18*	-12.20*
	(2.19)	(3.18)	(3.53)	(-2.15)	(-2.86)	(0.17)	(-3.56)	(-3.56)	(-3.01)	(-3.55)
t+20	0.08*	0.10*	0.10*	-0.07	-0.15*	0.02	-13.05*	-12.86*	-0.18*	-12.50*
	(2.18)	(3.17)	(4.66)	(-1.67)	(-2.81)	(0.90)	(-3.67)	(-3.66)	(-3.08)	(-3.64)

Note(s): This table presents the results of the event study analysis for the top 20 companies. * indicates the value is significant at 5% level. The value listed in the bracket represents the t-statistics. The number in the first row corresponds to the serial number of each company, which is shown in Table 1.

4. Conclusion

This paper examined the impact of the passing away of Queen Elizabeth II on the UK markets by using a sample of 20 top-revenued companies in 2022 from 11 different categories and found that this event generated heterogeneous effects among different firms. This research has identified that the departure of Queen Elizabeth II had a small impact on the UK companies in the Biotech, Oil & Gas, Mining, and Tobacco industries, which had few or no significant abnormal returns in the days following the event. In terms of cumulative impact, companies in the Retail, Telecommunications, Banks, and Defense Contractors sectors show significant negative CARs for at least eight days after the event. However, companies in the Oil & Gas, Mining, and Consumer Goods industries show significant positive CARs after the event. This study can provide insight to investors. For example, this study reveals the heterogeneous stock performance of companies in different categories in the UK in response to the passing away of Queen Elizabeth II. Therefore, this study provides investors with guidance on where to diversify their capital in the UK to mitigate investment risk when there is a change of the crown or the death of a beloved celebrity. In addition, this study has some limitations. First, the sample for this study is limited to the top 20 UK listed companies by revenue in 2022, and only 11 of these industries are covered. It would be a fruitful area for further work focusing on improving the sample size and the imbalance in the sample distribution across industries, especially those with only one company in this study. A further study, with a larger sample size, could also classify British companies by market capitalization, providing investors with insights into portfolio diversification based on size anomalies.

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References

[1] *Smith, M. (2022) How have Britons reacted to queen Elizabeth II's death?, YouGov. YouGov. Available at: https://yougov.co.uk/topics/politics/articles-reports/2022/09/13/how-have-britons-reacted-queen-elizabeth-iis-death (Accessed: October 28, 2022).*

[2] *Hudson, R. & Urquhart, A. (2015) War and stock markets: The effect of World War Two on the British stock market. International review of financial analysis. [Online] 40166–177.*

[3] *Shahzad, K. et al. (2019) UK's stock market reaction to Brexit process: A tale of two halves. Economic modelling. [Online] 80275–283.*

[4] *Breinlich, H. et al. (2018) The Economic Effects of Brexit: Evidence from the Stock Market. Fiscal studies. [Online] 39 (4), 581–623.*

[5] *Ramiah, V. et al. (2017) The sectoral effects of Brexit on the British economy: early evidence from the reaction of the stock market. Applied economics. [Online] 49 (26), 2508–2514.*

[6] *Balcı, M. A. et al. (2021) Hierarchies in communities of UK stock market from the perspective of Brexit. Journal of applied statistics. [Online] 48 (13-15), 2607–2625.*

[7] *Chortareas, G. et al. (2019) QUANTITATIVE EASING AND THE UK STOCK MARKET: DOES THE BANK OF ENGLAND INFORMATION DISSEMINATION STRATEGY MATTER?: QE AND THE UK STOCK MARKET. Economic inquiry. [Online] 57 (1), 569–583.*

[8] *Top 30 companies in UK by revenue in 2022 (no date) Global Database - Company Intelligence platform On Global Markets. Company information database. Available at: https://www.globaldatabase.com/top-50-companies-in-uk-by-revenue-in-2017 (Accessed: October 28, 2022).*

[9] *Fama, E.F., Fisher, L., Jensen, M.C. and Roll, R.W. (2003). The Adjustment of Stock Prices to New Information. SSRN Electronic Journal. doi:10.2139/ssrn.321524.*