

The Capital Market Reaction of Medical Enterprises' Philanthropic Donation during COVID-19 Pandemic

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Abstract: Based on the medical enterprises' donation data during COVID-19 pandemic, using the event study method, this paper tested the capital market reactions of corporate donation announcements, taking the Yatai Group and Northeast Pharm as examples. The conclusions show that the economic consequences of corporate philanthropy is very different. The stock prices of Yatai Group increased after the donation, while Northeast Pharma's donation did not bring positive effects. Further, we analyzed the influencing factors of such a difference and put forward suggestions for corporate strategic philanthropy.

Keywords: Event research method; Capital market reaction; Strategic philanthropy

1. Introduction

The outbreak of the COVID-19 in early 2020 brought a huge impact on the whole society. During COVID-19, enterprises battled the pandemic positively by announcing donations plan and took the initiative to assume social responsibility, which promote Chinese philanthropy reaching a new milestone point. According to statistics, until March 15, 2020, the accumulated donations amounted to 21 billion yuan, including 38 enterprises or individuals with donations of 100 million yuan and above, and 457 enterprises or individuals with donations between 10 million and 100 million yuan. In which, pharmaceutical companies, closely related to people's health care, donate a large number of medical supplies to battle the pandemic. Can corporate donations during the covid-19 bring short-term wealth effects for companies? This paper will test the capital market response to philanthropic donation of pharmaceutical companies and get to suggestions on corporate strategic philanthropy.

2. Literature Review

The research at home and abroad on corporate philanthropic behavior under crisis events has focused on disaster donations. The 2008 Wenchuan earthquake awakened national enthusiasm for philanthropic giving, and research on the motivations and consequences of corporate donation has become a hot topic. From the perspective of the advertising utility of philanthropic giving, Shan, Liwei et al. (2008) found that industries with direct contact with consumers had higher levels of giving and were more inclined to donate cash ^[1]. From the perspective of media attention, Xu Liping et al. (2011) found that media attention had a significant positive impact on corporate philanthropic giving after the Wenchuan earthquake ^[2]. Using Wenchuan and Yu Shu earthquakes donations as a background, Yin Meiqun (2014) found that the higher the proportion of female directors, the more inclined companies were to make post-earthquake donations, but the amount was relatively cautious ^[3].

In terms of the economic consequences of corporate philanthropy, Yuan and Hang Hang (2015) studied the impact of donation announcements by listed companies after the Wenchuan earthquake and found that donations resulted in a positive market response ^[4]. Wang (2011) further confirmed the findings, but found that the significance of this positive market response rose with the timeliness of donation announcements ^[5]. Li Jingqiang and Liu Fengjun (2010) used 75 donating firms in the Wenchuan earthquake to confirm that the positive market response to corporate philanthropic giving was influenced by the timing and amount of donations, and that only philanthropy that is viewed as true by the market can enhance corporate value ^[6]. Pan Yue et al. (2017) studied the impact of typhoon disasters on the long-term philanthropic giving of listed companies and confirmed that disaster relief donations brought significant positive economic consequences ^[7]. In addition, philanthropic giving is

also beneficial to enhance corporate image and promote product sales (Chen, Dong, and Xing, 2019) [8].

In conclusion, the occurrence of public crises has given rise to a boom in corporate philanthropic giving; however, current research has mainly focused on donation under disaster relief events such as earthquakes and typhoons, with little research on corporate philanthropic behavior under the sudden public health crisis of the COVID-19. This paper will study the capital market response to philanthropic giving based on corporate giving data under the COVID-19 and select typical companies, thus enriching the theory and practice of strategic philanthropic behavior.

3. Case Selection and Donation Date

This paper chooses Northeast Pharmaceutical (stock code: 600881) and Yatai Group (stock code: 000597) as the case because both companies are in the pharmaceutical industry, which is closely related to people's life and health care; Secondly, they have the same donation scale, with the amount of 60 million yuan; In addition, Yatai Group is in Jilin Province and Northeast Pharmaceuticals is in Liaoning Province, both are in the northeast region, so they are comparable. After the outbreak of the pandemic, both Yatai Group and Northeast Pharmaceutical made external donations announcements, but the two companies differed in some aspects, as shown in Table 1.

Table 1: Comparison of donation between Yatai Group and Northeast Pharmaceutical

	Yatai Group	Northeast Pharm
Announcement time	February 11, 2020	March 7, 2020
Donation methods	Material 60 million RMB	Own capital 6000
Donation channels	Not explicitly disclosed	Donate through provincial charity association
Donation recipients	Public welfare organizations such as the Red Cross Society of the city where they are located and the Red Cross Society of Wuhan	Provincial pandemic prevention and control department

Note: Yatai Group donated 60 million RMB of materials including about 50-million-yuan worth of anti-virus drugs and 10 million RMB of self-produced national first-class traditional Chinese medicine Sheng Yi capsules.

4. Capital Market Reaction of Corporate Donation Announcement

4.1. The event date and calculation of abnormal rates of return

We use the event study method to test the capital market reaction to corporate donation announcements. The date on which the companies announced their donation plan to the public is chosen as the event date. Yatai Group made a donation announcement on February 11, 2020, and Northeast Pharmaceuticals made a donation announcement on March 7, 2020, so February 11, 2020 and March 7, 2020 are event dates, respectively, and 15 trading days each before and after the event date are defined as the event period, and 135 before the event date to the first 15 trading days, i.e., (-135, -16), for a total of 120 trading days as the estimation period.

The market model is applied to collect data on the Real rate of return and the market Profitability of the markets in which they are located during the estimation period. The relationship between the two for the estimation period of Yatai Group is calculated as $Y=1.048X$; the specific relationship between the two for the estimation period of Northeast Pharmaceutical is $Y=-0.0729X-0.1109$ calculated the market profitability of the firm in the event period, and the expected return is obtained by substituting the relationship between the firm and the market profitability calculated above based on the data of the estimation period, respectively. The difference between the Real rate of return and the estimated expected return is the Abnormal Return (AR), and the Cumulative Abnormal Return (CAR).

4.2. Share price reactions to announcements of corporate donation

4.2.1. Abnormal yield trend graph

The CAR of Yatai Group during the whole event period is 0.3223, which is greater than zero, and

the calculation results of AR and CAR are shown in Figure 1. The CAR of Northeast Pharmaceutical is -1.6221, which is less than zero, and the trend graph of AR and CAR is shown in Figure 2.

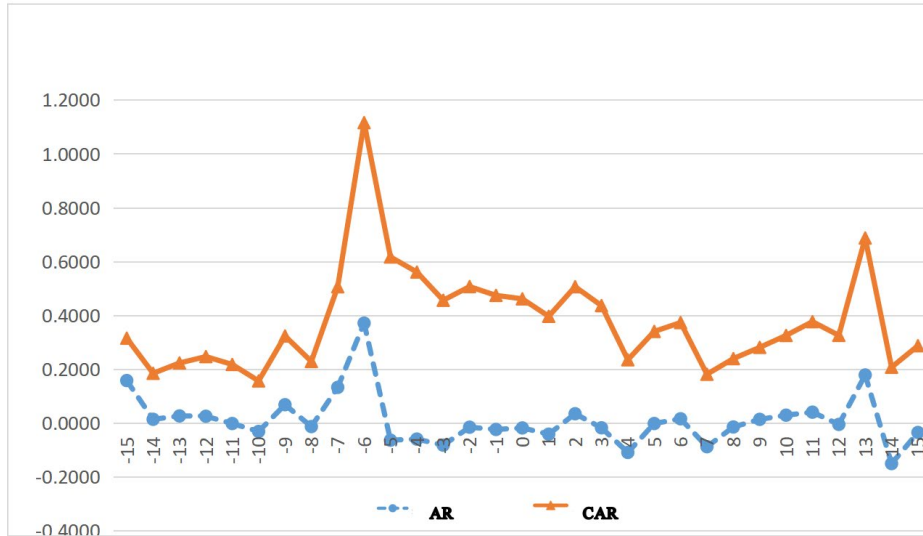


Figure 1 Trend of AR and CAR of Yatai Group

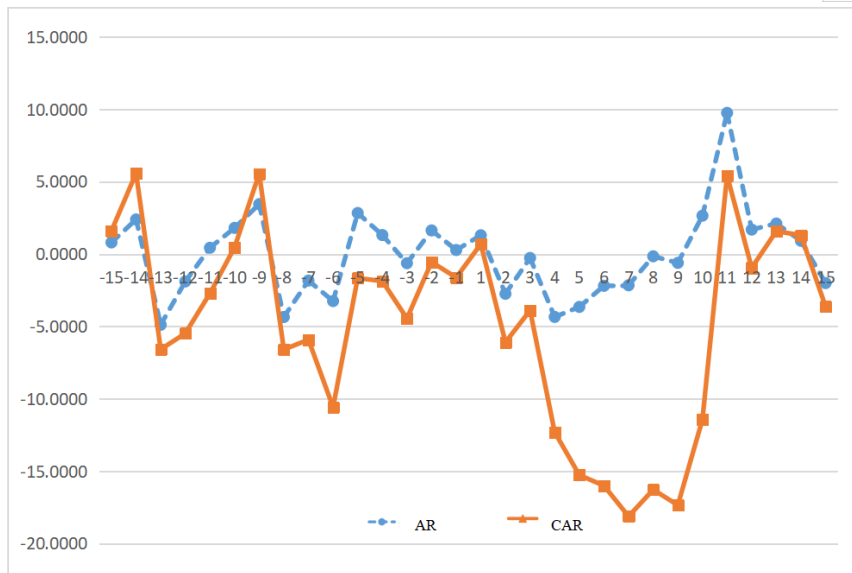


Figure 2 Trend of AR and CAR of Northeast Pharmaceutical

In figure1 the AR and CAR of Yatai Group fluctuated but were both positive, while the CAR of Northeast Pharmaceutical showed a clear downward trend after the donation announcement, with the AR negative for 8 consecutive trading days, except for the +1 day when the AR was positive.

4.2.2. T-test results

Table2 shows the one-sample t-test of abnormal return of these two companies.

Table 2: T-test results of abnormal returns of Yatai Group and Northeast Pharmaceutical

Window period	Yatai Group		Northeast Pharmaceutical	
	T- value	P-value	T-value	P-value
(-15, -7)	15.912	0.000	-3.523	0.003
(-8, -6)	3.013	0.095	-5.702	0.001
(-5, -1)	16.774	0.000	-1.759	0.139
(0,15)	17.931	0.000	-4.478	0.001
(-15,15)	13.575	0.000	-4.766	0.000

We find Yatai Group's T-test results are significantly positive at the 1% level for all window period except for the window period of (-8, -6), indicating that the donation brings a positive market response for the company, while Northeast Pharmaceuticals is significantly negative at the 1% level for all window period except for the window period of (-5, -1) which is not significant, indicating that the charitable donation does not bring a positive market response.

4.2.3. Discussion of results

The results show that the donation of Yatai Group brought short-term wealth effect, while Northeast Pharmaceutical did not generate positive market response. We think that their differences in donation time and way can explain the different economic consequences. First, in terms of the time of the donation announcement, Yatai Group's announcement date was February 11, only 19 days after the Wuhan emergency announcement date (January 23, 2020), while Northeast Pharmaceutical's announcement date was 42 days apart, relatively late. At the early time of the pandemic, the public and investors pay more attention to corporate donations. Companies announcing the donation at the early stage of the pandemic can gain more beautiful words from the media and stakeholders, which will bring short-term wealth effects. Secondly, from the perspective of donation way, YaTai Group chose to donate its own products (drugs), which can satisfy the needs of the epidemic well. In the early stage of the pandemic, the donation of drugs is very helpful to fight the pandemic, so it can bring positive advertising effect, helping to establish corporate social image and enhance the corporate value.

5. Conclusions and Suggestions

The above conclusions show that corporate philanthropy does not necessarily lead to an increase in stock prices, and some factors including time and way of donation affect the economic consequences of donations. We suggest that enterprises need to strengthen the management of donations and make strategic philanthropy to improve corporate performance. First, companies can make a timely response to natural disasters or other public crises or emergencies to build corporate social image and reputation. Second, donation way should be considered in corporate CSR strategy, donation of products in combination with the industrial feature can bring the positive advertising effect for companies. Third, enterprises should donate according to corporate size and financial strength to avoid the corporate long-term competitiveness are damaged. Fourth, enterprises can set up internal donation management departments to make strategic donation plan.

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