

The Impact of City-wide Lockdown in Shanghai on Chinese Financial Markets

Yiwen Chen

Capital University of Economics and Business, Beijing, China

2392745084@qq.com

Abstract. Since December 2019, the COVID-19 epidemic has rapidly spread to all parts of the world. Many countries and cities have adopted lockdown measures to contain the spread of the epidemic, which has brought unprecedented huge impact on the global economy, society, and financial markets, and also caused a strong impact on many industries. This public health emergency has also made the government, enterprises, and individual investors concerned about its impact on the stock market. This paper comprehensively examines the impact of COVID-19 lockdown on the financial market, especially the stock market.

Keywords: COVID-19 epidemic; Lockdown in Shanghai; Chinese Financial Markets.

1. Introduction

In this paper, the author not only use the data of the daily closing price of SSEC (Shanghai Securities Composite Index), SZI (Shenzhen Securities Component Index) and Shanghai Securities Composite Index (CSI) during the lockdown of Shanghai compared with that of Hang Seng Index (HSI) of the same period, but also analyze three vital industries including logistics sector, the tourism sector and the hotel and catering sector. Similarly, the author summarizes their closing prices during this period by using these data as treatment. A difference-in-differences (DID) model was constructed to estimate the relevant impacts of the sudden implement of lockdown.

The author finds that unexpected city-wide lockdown reduces the stock market in mainland China by -3.21% measured by CSI, -2.57% measured by SSEC and -6.42% measured by SZSE. Meanwhile, the author also estimates the impact on industry level. Specifically, the declines in the logistics sector index, the tourism sector index, and the hotel and catering sector index are estimated to be -1.18%, 2.42%, 3.26% respectively, showing large variations in lockdown's impact across industries.

At the end of this paper, the author summarizes the results of this paper and discuss some policy implications from government and strategies for self-rescue of the enterprises in the aforementioned three industries.

By the end of 2019, the World Health Organization (WHO) identified the first case of COVID-19 in Wuhan China. In early and mid-January 2020, the epidemic began to spread to other Chinese provinces, coupled with the massive return of people to their hometowns during the Chinese New Year, which turned the outbreak into a national crisis. Then, on January 23, 2020, the day before lunar New Year, one of China's most popular holidays, Wuhan was locked down. However, the virus still spread rapidly despite the lockdown policy in Wuhan announced by the Chinese government. On 30 January 2020, with signs of outbreaks in many Asian and European countries and the United States in February 2020, and pandemic characteristics in March 2020, the World Health Organization declared a global emergency due to the rapid spread of COVID-19.

COVID-19 poses significant challenges to the lives of individuals, including lockdowns (or lockdown-like situations). In addition to extreme events of death and illness, many people around the world are alarmed by this fast-spreading infectious disease. Such unprecedented and unexpected shocks depress economic trends and suddenly change investor sentiment. In March 2020, after the declaration of a global emergency by WHO, one of the worst stock market crashes in history. In just four trading days, the Dow Jones Industrial Average has plunged 6,400 points, or about 26 percent. Besides, the U.S. NASDAQ Index plunged 33%, hitting a 20-year high. Over the same period, the

U.K. 's FTSE is down 3%, France is down 17%, Germany's DAX is down 16% and Italy is down 20.5%.

Since the middle of December 2019, China has been resulting in a series of measures such as production stop-downs, village closures, and road closures across the country. As a result, a large number of productive activities have come to a halt and the macroeconomy has suffered a severe impact. As the epidemic worsens, global economic downside risks are increasing, and China's economy is facing the dual impact of slow domestic resumption of work and production and insufficient international demand. Although China has taken various measures to deal with the epidemic, the novel coronavirus characteristics of strong variability and rapid transmission determine the development of the epidemic in the post-epidemic period.

According to Wikipedia, lockdown is a restriction policy for people or community to stay where they are. Since, the COVID-19 was declared the official designation of this deadly virus by World Health Organization (WHO), a novel term "COVID-19 lockdowns" has emerged and it generally refers that due to the COVID-19 pandemic, many countries and territories around the world have implemented a number of non-pharmaceutical interventions, commonly known as lockdowns (including stay-at-home orders, curfews, quarantines, cordon sanitaire, health facility closures and similar social restrictions). These restrictions were designed to reduce the spread of the SARS-CoV-2 virus that causes COVID-19. By April 2020, about half of the world's population was in some form of lockdown was in some form of lockdown, and more than 3.9 billion people in more than 90 countries or territories had been asked or ordered by their governments to stay at home. Despite similar disease control measures having been used for hundreds of years, the scale of implementation in the 2020s is thought to be unprecedented.

As one of the largest economic city in China, Shanghai only accounts for 0.06% of the country's land area, but contributes 3.8% of the country's GDP. In 2021, Shanghai have surpassed the four trillion mark, reaching about 4.3215 billion yuan. According to statistics, Shanghai can generate 11.8 billion YUAN of GDP in an average day. However, the situation of epidemic prevention and control in China is gradually improving and the domestic economy is gradually recovering, at the end of the first quarter of 2022, the epidemic hit Shanghai again. On March 28, Shanghai government had to announce lockdown measures, which seriously affected the people's livelihood and economy of Shanghai. Many suppliers were faced with warehouse overstocking, production disruption and transportation difficulties. Looking back at 2020, a similar picture emerges. However, this outbreak has been raging, lasting for a long time and affecting more people than expected. The unexpected lockdown for small and medium-sized enterprises whose business situation is already bad is undoubtedly worse. Eventually, the policy of lockdown in Shanghai have improved its efficiency in slowing the spreading of the virus in the population, on June 1st, Shanghai government announced that on the premise of controllable risks, it will fully implement normal management of epidemic prevention and control and fully restore the normal order of work and life of the city. But how did the stock market respond to this nationwide lockdown in the lockdown period?

For this reason, I choose the lockdown of Shanghai as the event window to examine the response of the stock market in China and the overreaction of stocks at both the index and industry level.

In this paper, the author not only use the data of the daily closing price of SSEC (Shanghai Securities Composite Index), SZI (Shenzhen Securities Component Index) and Shanghai Securities Composite Index (CSI) during the lockdown of Shanghai compared with that of Hang Seng Index (HSI) of the same period, but also analyze three vital industries including logistics sector, the tourism sector and the hotel and catering sector. Similarly, the author summarize their closing prices during this period by using these data as treatment. A difference-in-differences (DID) model was constructed to estimate the relevant impacts of the sudden implement of lockdown.

The remainder of this paper is organized as follows. Section 2 briefly reviews the relevant literature about the impact of pandemic on the domestic stock market and papers containing empirical analysis with DID models. Section 3 introduces the research methods and data used in this study. The DID model of this paper and its empirical results are contained in section 4. The last section summarizes

the results of this paper and discusses some policy implications from government and strategies for self-rescue of the enterprises in the aforementioned three industries.

2. Related Literature

Since COVID-19 was identified in Wuhan, China, in December 2019, it is so unexpected that there is little research on the impact of COVID-19 on the stock market, especially on the impact which lockdown of cities or countries might bring to the stock market.

Mohammad Noor ALAM¹, Md. Shabbir ALAM² and Kavita CHAVALI³ (2020) use the method of market model event study methodology (Fama et al.1969) which is powerful in detecting abnormal returns to measure the effect of the lockdown period in India due to COVID-19 on the stock market and prices and whether the response would be the same degree in pre- and post-lockdown period caused by COVID-19. The authors concluded that it didn't have a positive influence on Indian stock market during the lockdown period until the health situation in India improved.

Dustin L Pendull and Chulgu Cho (2013) investigated the market reaction of agribusiness investors in South Korea after five foot-and-mouth disease (FMD) outbreaks using event study analysis. The results show that there are positive and negative stock market reactions to related companies caused by the outbreak of FMD. The results also showed that the market response to FMD outbreaks was more gradual than the instantaneous outbreaks. In addition, the FMD outbreak appears to have increased the volatility of daily earnings, with smaller companies facing the greatest volatility changes.

Xiaolin Huo and Zhigang Qiu (2020) examined another lockdown period in China which is about one year before the unexpected lockdown of Shanghai examined in this paper, that is the Wuhan lockdown in early 2020. In general, the author focus on reversals both at the sector level and the firm level because of the overreactions to the pandemic lockdown. They concluded that stocks with lower institutional ownership had greater overreaction, suggesting that retail investors had a stronger response to COVID-19.

Weiqing Li, etc (2021) described an empirical nexus between fear of COVID-19 and stock market volatility. Their findings suggest that the fear of COVID-19 among citizens is the ultimate cause of public concern and stock market volatility. Besides, stock market performance and GDP are negatively correlated with average gains during the pandemic and the degree to which the public cares about attitudes to buying, holding or selling stocks depends largely on the COVID-19 reported cases Index, the Death Index and the Global Fear Index.

Mei-Ping Chen, Chien-Chiang Lee, Yu-Hui Lin, In-Yi Chen (2018) examined the effect of the Severe Acute Respiratory Syndrome (SARS) epidemic on the long-term relationship between China and other four stock markets in Asia. And they used the difference-in-difference (DID) method and found that the epidemic indeed weakened the stock markets in the long term as they expected. Therefore, they advised that retail investors and policymakers should be aware of such catastrophic epidemic diseases might bring to the stock markets.

Heckman et al. (1985,1986) first proposed that DID method be used to evaluate the effect of public policies. Since then, the research results of DID method emerged one after another. Card (1990) assessed the impact of immigration policies on wages and employment of local residents by using the difference method. Card and Krueger (1994) took Pennsylvania as a control group and assessed the impact of raising the minimum wage in New Jersey on employment by using the difference method. Meyer et al. (1995) evaluated the effect of disability subsidy policy after work injury by using DID method. Heckman and Smith (1999) evaluated the policy effects of employment training programs by using the difference and double method; Puhani (2000) used DID method to evaluate the impact of the unemployment relief policy implemented in Poland in 1991 on the unemployment duration cycle.

3. Data description

Since the lockdown policy in Shanghai was announced and ordered on April 1st 2022 and lifted lockdown gradually after June 1st, the time period that selected for the study was from March 1st to June 30th. With the data in this period, the influence during lockdown period are able to be estimated, compared with the condition during the pre-lockdown period. All the data which is used in this paper are taken from Choice Financial Terminal. (<https://choice.eastmoney.com>)

3.1 Shanghai Stock Exchange Composite Index (SSEC)

The SSEC index which also known as SSE (Shanghai Stock Exchange) index is a stock market index of all stocks (A shares and B shares) that are traded at the Shanghai Stock Exchange. SSEC was officially launched on December 19, 1990. As of August 2022, there were 2,093 listed companies on the SSE and the SSEC now has 1,493 constituent stocks from every industry in China. Therefore, the SSEC reflects the general trend of the SSE market and the economic level of China.

In this research study, the daily closing prices of SSEC from March 1st to June 30th as treatments are selected which is displayed by Fig.1

3.2 Shenzhen Stock Exchange Component Index (SZSE Component Index)

The SZSE Component Index is an index of 500 stocks that are traded at Shenzhen Stock Exchange (SZSE) and this index is also a main stock market index of Chinese stock market. SZSE Component Index was a weighted stock index calculated by selecting the stocks of 40 representative companies from the 500 listed stocks and was officially released on January 23, 1995, comprehensively reflect the stock price trend of A and B shares listed on the Shenzhen Stock Exchange. Fig.2 illustrates the daily closing price of SZSE Component Index pre-lockdown and during the lockdown of Shanghai as another treatment to analyze the influence.

3.3 China Securities Index (CSI 300 Index)

The CSI 300 is a capitalization-weighted stock market index designed to replicate the performance of the top 300 stocks traded on the SSE and SZSE. The CSI 300 index select the listed companies with the average daily turnover in the last year in the top 50% as the sample space stocks, and then select the top 300 stocks with the average daily value as the sample stocks. Therefore, the sample stocks screened have the characteristics of large scale, high liquidity, weight dispersion and strong anti-manipulation. Over the years, CSI 300 has been deemed the Chinese counterpart of the S&P 500 index and a better gauge of the Chinese stock market than the more traditional SSE Composite. In this research, its daily closing price during the lockdown period are summarized to have a thoroughly view of the Chinese stock market's performance, which is shown in Fig.3 as a treatment in the model.

3.4 Hang Seng Index (HSI)

The HSI is a free float-adjusted market-capitalization-weighted stock-market index in Hong Kong. It is used to record and monitor daily changes of the largest companies of the Hong Kong stock market and is the main indicator of the overall market performance in Hong Kong. There are 63 constituent stocks in total and it is established on January 2, 1985. Its daily closing prices are collected as a control group because the Shanghai lockdown has greater impact on mainland China than on the stock market in Hong Kong.

3.5 Industry sectors

To investigate how Chinese stock markets were influenced during the Shanghai lockdown at industry level, indexes of three representative industry sectors are selected which are vulnerable to the impact of the lockdown. They are the logistics sector, the tourism sector and the hotel and catering sector. The same as how the index level is analyzed, the closing prices are selected to compare with

its data during and before the Shanghai lockdown to draw conclusion about the impact and analyze the reasons about the outcomes.

3.6 Summary statistics

Table 1 reports the descriptive statistics of key variables. Since the closing price of those indexes mentioned above was counted every day from March 1st to the end of June, for a total of 68 days, therefore each variable has 68 data. These index data are all calculated in RMB except HSI in HK\$ (Hong Kong Dollar). In addition, the base of each index is different, so the values vary greatly. The table also shows the average values of SSEC Index, SZSE Component Index, CSI 300 and HSI are 3183.274, 11705.57, 4132.537 and 21026.59, respectively. The standard deviation of HSI is the largest, about 886.17, and that of SSEC is the smallest, about 124.29. In terms of sectors, the index of tourism, logistics, hotel and catering is around 32.48, 14.04 and 20.31, respectively.

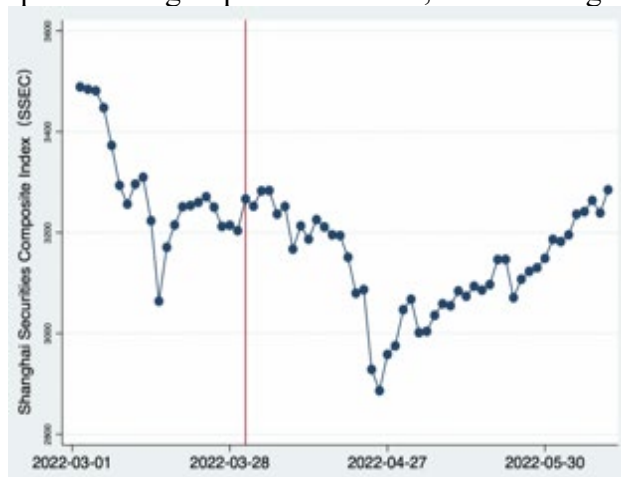
Table 1. Summary statistics of the key variables

Variable	Label	N	Mean	SD	Min	Max
Index Level						
SSEC Index	RMB	68	3183.274	124.2885	2886.426	3488.835
SZSE Component Index	RMB	68	11705.57	674.7245	10206.64	13488.64
CSI 300	RMB	68	4132.537	168.7829	3784.12	4619.686
HSI	HK\$	68	21026.59	886.1761	18415.08	22761.71
Industry Level Index						
Tourism Sector Index	RMB	68	32.48624	1.703877	29.2492	37.594
Logistics Sector Index	RMB	68	14.03902	0.5990779	12.6877	15.4271
Hotel and Catering Sector Index	RMB	68	20.30791	0.8886598	17.9331	22.529

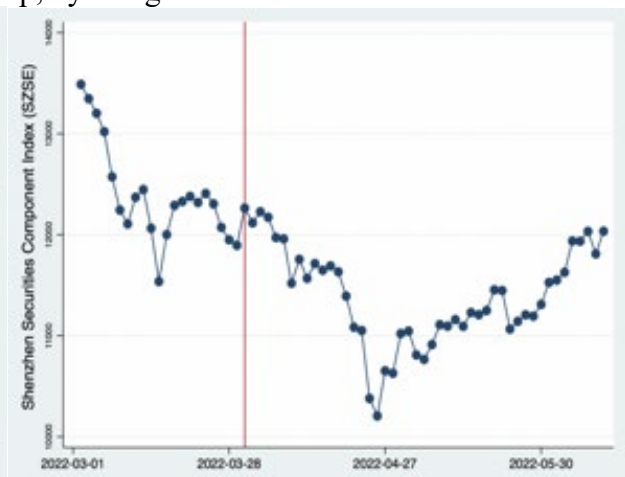
4. Model and Empirical Results

The following seven charts reflect the closing price movements of the SSEC Index, SZSE Component Index, CSI 300, tourism sector index, logistics sector index, the hotel and catering sector index and HSI before the lockdown (the part before the red line) and after the lockdown (the part after the red line), respectively.

As can be seen from Fig.1, Fig.2 Fig.3 and Fig.7, the trends of SSEC Index, SZSE Component Index and CSI 300 after the lockdown are basically similar, showing an identical degree of decline and fluctuation, and it can be clearly seen that there is a big difference with HSI. In terms of the industry level, which is shown in Fig.4, Fig.5 and Fig.6, tourism sector index, logistics sector index and the hotel and catering sector index show significant fluctuations. In order to estimate the concrete impact of the lockdown in Shanghai on stock markets and industry level, I compare these experimental groups with the HSI, the control group, by using a Difference-In Difference Model.



(1)



(2)

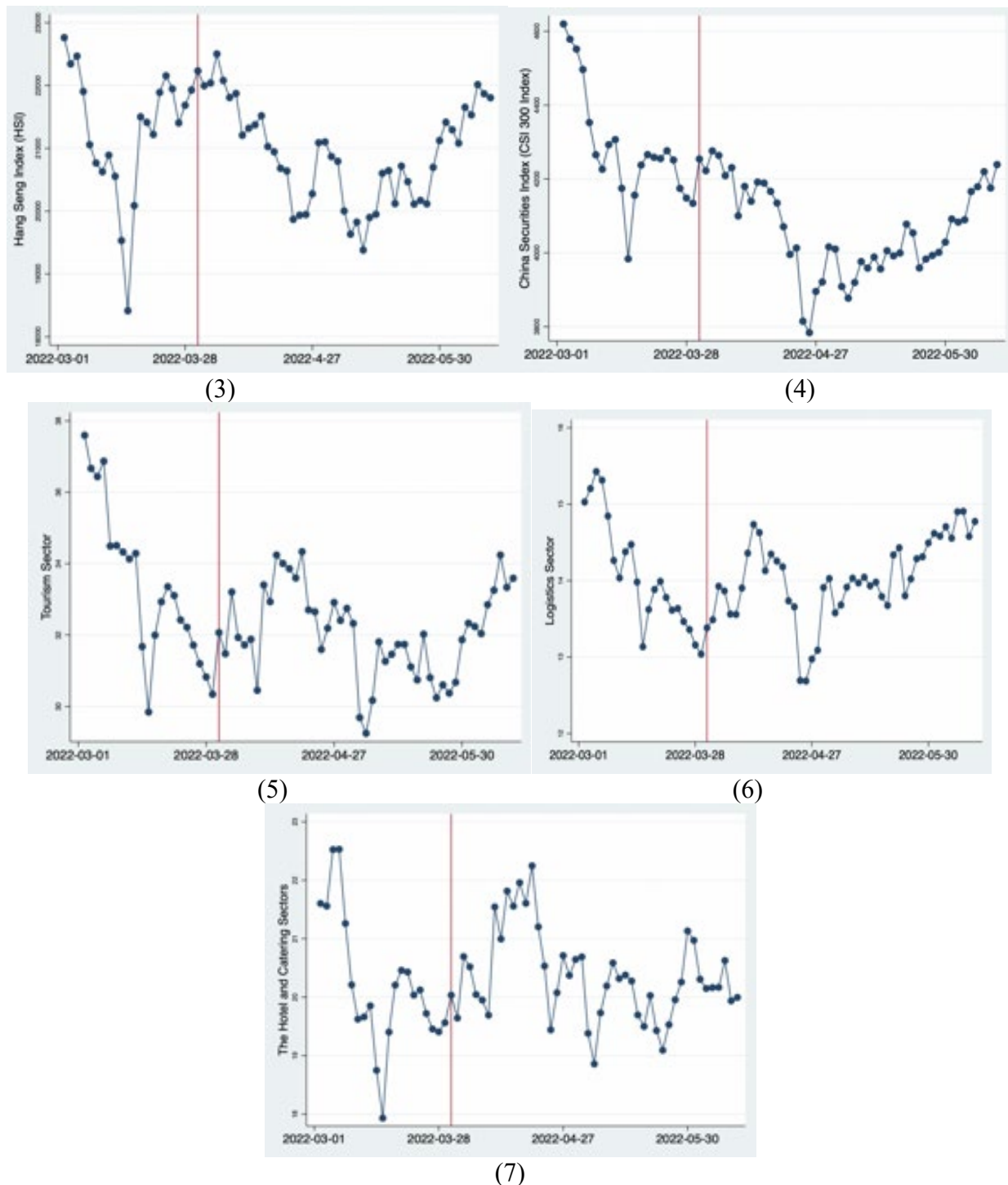


Fig. 1 Time trend of (SSEC, SZSE, CSI300, HSI, Tourism Sector, Logistics Sector, Hotel and Catering Sector) index before and after the lockdown

4.1 Difference-in-Difference Design

Economists are often concerned with the effects of a policy, such as its effect on income. The simplest way to do this is to compare the difference before and after the treatment group (namely the region or individual affected by the policy). This is called the ‘difference estimator’, which is to subtract the mean of the sample before the policy from the mean of the treatment group's sample after the policy was implemented. However, as the macroeconomic environment also changes over time (time effect), the difference between the regions where policies are implemented may not necessarily be a treatment effect.

However, the DID method, which was founded by Heckman et al. (1985) and introduced into economics field by Orley Ashenfelter & David Card (2002), solves this limitation and the common method is to find the appropriate control group, that is, the area where the policy has not been implemented, as the counterfactual reference frame of the treatment group. Specifically, the before-after change in the control group that was not affected by the policy can be treated as a mere time effect. Then subtracting the change before and after in the treatment group from that in the control group yields a more reliable estimate of the effect of the policy treatment.

In this analysis, the starting time of the lockdown in Shanghai is on April 1st, and the ending time is on June 1st. This unexpected lockdown lasted for about two months, which refers to as the treatment period.

Although the lockdown policy is effective in controlling the pandemic, it will also have a great impact on many industries in a country, such as the logistics sector, the tourism sector and the hotel and catering sector. Since people will reduce these basic activities outdoors, thus reducing consumption on certain industries, which will have a negative effect. I believe these negative factors would be reflected in the daily closing price of the stock market.

In order to use the DID difference method, in terms of time, all the data are divided into two parts: before and after city lockdown. Since the lockdown began on April 1st, all the data is set from March before the lockdown as the control group, and the data from April to the end of June after the lockdown as the experimental group.

Meanwhile, in terms of the samples, the data is also divided into two parts: treatment that received the lockdown shock and control group that didn't suffer the lockdown. Specifically, as a reflection of the overall trend of Chinese stocks and the overall operating conditions of listed companies, the closing price of the SSEC, SZSE, CSI 300 and the three industries mentioned above during the lockdown period are set as our treatment groups, compared with the closing price before the implement of lockdown policy and the closing price of HSI in the same period which is not much affected by the outbreak and lockdown policy in mainland China. This allows us to adopt a DID analysis to quantify the impact -- index level (SSEC, SZSE and CSI 300) and industry level (the logistics sector, the tourism sector and the hotel and catering sector)

In addition, since the base of Shanghai Stock Index, Shenzhen Component Index and CSI 300 is different, the actual increase represented by a point change in each index is very different. Therefore, the natural logarithm of all the data are taken before it was compared with all the treatments with control group.

To summarize all the aforementioned ideas, the impact of the lockdown of Shanghai is analyzed at the index level (SSEC Index, SZSE Component Index and CSI index) and industry level (tourist sector index, logistics sector index and the hotel and catering sector index).

Following the DID model by Orley Ashenfelter & David Card(1985), a logarithm form of daily closing price of the six indexes above is employed as dependent variable and regressed on Hang Seng Index (HSI). The baseline specification becomes:

$$\log(Y) = \beta_0 + \beta_1 * Treated + \beta_2 * PostPeriod + \beta_3 * Treated \times PostPeriod + e$$

where 'Y' denotes the closing price of HSI, 'i' is the product which denotes the daily closing price of any of the six indexes mentioned above, 't' is the date time and the dummy variable 'Treated' equals 1 if 't' belongs to the treatment time and 0 otherwise. Another dummy variable is the 'Post Period' distinguish the period of April 1, 2022, when the lockdown is officially implemented, to the end of June, when the Shanghai is completely lifted from the whole date of three months. Similarly, 'Post Period' equals 1 if t belongs to the post-treatment period and 0 otherwise. And e is the standard error. More importantly, β_3 denotes the coefficient which estimated the impact of lockdown on the treatment and this is exactly what I want to capture and analysis in the following sector.

4.2 Empirical results

Table 2. Summary statistics for Treatment Group

	Index level		Industry level			
	SSEC Index	SZSE Component Index	CSI 300	Tourism Sector	Logistics Sector	Hotel and Catering Sector
Treated(β_1)	-1.870704	-1.870704	-1.605553	-6.465386	-7.327739	-6.964146
Post Period (β_2)	-.0218531	-.0218531	-.0218531	-.0218531	-.0218531	-.0218531
Treated×Post Period(β_3)	-.0257456	-.0641804	-.0321554	-.0117544	.0242129	.0325858
Observations	68	68	68	68	68	68
R ²	0.9985	0.9816	0.9980	0.9998	0.9999	0.9999

As can be seen from Table 2, there was an approximately -2.57% decrease in SSEC Index due to the Shanghai lockdown compared with HSI, while another table shows that the lockdown caused a roughly -6.42% drop of SZSE Component Index compared with HSI, which is more than twice the disparity of the SSEC Index and HSI. This finding is beyond our expectations, but I also analyze the reasons. First of all, SSEC and SZSE have different sample spaces. The SSEC Index, as its name implies, belongs to a composite index, in which the rise and fall of all 2093 stocks in SSE are recorded, while the SZSE Component Index is a component index, which means that it only includes some representative stocks. SZSE has an original composition of 40, later added to 500, and other stocks are not recorded in SZSE Component Index. Second, SZSE is generally small & medium -- capital stock, most of which are entrepreneurial companies. These companies are faced with relatively large operational risks and still in the growth stage, generally small in scale and low in operational stability, which means they are more vulnerable to outbreaks and lockdowns.

In the description of data in the third part, the CSI 300 index selects 300 stocks from Shanghai and Shenzhen Stock exchanges through the two indexes of trading volume and daily total market value, so it can better reflect the overall situation of mainstream investment in the market and the trend of China's main market. In Table 2, it shows that the CSI 300 is decreased when compared with the change of HSI, with the degree of -3.21%. So it also proves that the Shanghai lockdown indeed has a certain impact on China's main stock market.

Tourism sector

As can be seen from Table 2, the overall decrease of the tourism sector index due to the lockdown was about -1.18% compared with the HSI during the same time. This is easy to understand. Shanghai is the largest economic center city in China. World-class scenic spots are located in Shanghai, and various conferences, exhibitions and sports events are also held in Shanghai. However, due to the lockdown, all tourism-related activities in Shanghai have been forced to stop, Shanghai citizens are confined to their homes and quarantined, and outsiders are also unable to visit Shanghai. Therefore, there is no doubt that the overall tourism industry in China has been seriously affected.

Logistics sector

Before the DID analysis, I believed that the lockdown would have a negative impact on the logistics sector of mainland China. However, the coefficient β_3 in Table 2 is about 2.42%, which indicates that the logistics sector index shows a significant rebound at about 2.42% in comparison of the trend of HSI in the same lockdown period.

I conclude that this is because people expect that the logistics sector would indeed be affected to a certain extent in a short term. However, due to the reduction of the labor force and the increase of the price of manipulate and material resources, the logistics price will gradually rise, and the total income of logistics companies will not be negatively affected or even increased. In addition, as a result of the lockdown, the need for logistics has increased as people stock up on supplies and daily necessities.

The Hotel and Catering Sectors

From Table 2, I also conclude that the decline of the hotel and catering sector is more slight than that of the HSI. (approximately 3.26%)

My analysis is as follows: In terms of hotels, during the lockdown period in Shanghai, many hotels were expropriated by the government and used for epidemic prevention and isolation, and the government also had to pay corresponding expenses to the hotels. In addition, due to the re-outbreak of the epidemic in China, the country has strengthened the health screening of inbound people and placed them in local hotels, so it is also necessary to requisition a certain number of hotels.

In terms of catering sector, although Shanghai citizens cannot eat out due to the city lockdown, many community residents and neighborhood committees will purchase vegetables, rice, noodles, oil, meat and spices by group purchase. In addition, the government will also distribute these necessities to all residents on schedule and many of them are directly from restaurants, so it also greatly alleviates the pressure on the cost of raw materials for catering companies. For another point, meals will also be served in quarantine hotels and cabins (used to centrally isolate positive patients), which means the government and the restaurant industry will work together and brought a certain income to companies in the catering industry.

This is why, as what it has shown in Fig.6, the house and catering index has rebounded and fluctuated significantly after the lockdown compared with the control group of data before the lockdown period.

5. Conclusion

This paper studies how the lockdown caused by the epidemic in Shanghai affects the overall stock market in mainland China, as well as the tourism, logistics, hotel and catering sectors. In the Empirical Result, I have found that compared with the Hang Seng Index, the Shanghai Stock Index and Shenzhen Stock Index both show greater fluctuations to varying degrees under the impact of the city lockdown, with net effects around -2.57% and -6.42% respectively. The CSI 300, which reflects China's main market, also has -3.21%. At the industry level, also compared with the Hang Seng Index. Besides, the tourism sector index was affected by the city lockdown at about -1.18%. Unexpectedly, the logistics sector and the hotel and catering sector did not show a significant decline, but rebounded, about 2.42% and 3.26% respectively.

For the tourism industry, for the government, they should positively introduce a lot of support policies from the two aspects of reducing enterprise costs and increasing enterprise income. In terms of cost reduction, policies can be introduced to delay the payment of employee social security, reduce the layoffs of travel agencies, appropriately reduce the franchise fees of scenic spots or include scenic spots into the target of public infrastructure investment, and reduce the rates of insurance products such as accident insurance. In terms of increasing enterprise income, financial subsidies can be given according to the level and scale of operation of travel agencies, and coupons for peripheral short Tours can be issued to help travel agencies lock consumer demand in advance. In addition, scenic spots and travel agencies itself can also take some self-help measures, after remove sealing city, the residents' travel demand will increase, the scenic spot should seize the opportunity, to attract the attention of demand for travel groups, between each scenic spot can be submitted to the heating, through the product mix and benefits to tourists, attract tourists around in short short leisure, etc., Technologies such as live streaming and virtual reality can also be used to promote innovative tourism products and increase the influence of scenic spots on tourists.

For the Logistics sector, Since the market competition for logistics will be more intense after the lifting of the lockdown, logistics enterprises should make use of the expansion of digital services and the development of information societies to analyze and explore marketing opportunities according to the changing trend of logistics market and customer demand. In addition, they can also establish links with international logistics markets and increase infrastructure construction to expand and increase the flexibility of logistics networks. (Monika Klein, Ewelina Gutowska and Piotr Gutowski

2022). In terms of the government, they should improve the logistics policy system, support the development of logistics enterprises, encourage the construction of specialized logistics parks, and also play a role in regulating the logistics market.

For the hotel and catering sector, the government can increase financial support. For those enterprises seriously affected by the city lockdown, which are difficult to repay at maturity, it can extend or renew the loan, appropriately reduce the loan interest rate, and increase credit loans and medium and long-term loans. Secondly, it can reduce the burden of enterprises if the government reduce the tax or interest of small and medium-sized enterprises in hotels and restaurants. They can also reduce the operating cost including rent, water, electricity and gas expenses. As for the enterprises themselves, which are the same as the tourism enterprises mentioned above, there are some self-help measures that can be taken. In the background of the epidemic, enterprises can sell food materials at low prices or donate free food materials to citizens. On the one hand, they can digest the stored food materials and reduce the cost loss, and on the other hand, they can gain market popularity and good reputation. In addition, due to the changes in citizens' dietary needs during the lockdown period, online ordering, non-contact service and non-contact delivery service are undoubtedly one of the indispensable ways for hotels and catering enterprises to save themselves. Therefore, enterprises can intensify online marketing efforts and carry out delivery services.

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