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Analysis on China Concepts Stock's delisting from U.S. exchanges

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Abstract

Under the environment of political pluralization, relationships between countries will affect a firm's future development in the foreign stock market. Delisting decisions made by a company usually reflect its financial condition or current world political and economic situation; thus, it is a hot topic among financial researchers. This paper mainly investigates the influence of the U.S.-China trade war and the financial leverage on U.S.-listed Chinese firms' delisting decisions. This research constructs a logistic regression model and conducts an event study analysis based on data of U.S.-delisted Chinese firms and active Chinese firms in the U.S. exchanges during 2014-2022. Empirical results suggest that U.S.-China trade conflicts harm China Concepts Stocks, contributing to their delisting from U.S. exchanges. Besides, there is an especially negative relationship between Chinese firms' financial leverage and their delisting from the U.S. stock market, contrasting with our previous knowledge. As for the significance of this research, it will have referential value for those confusing companies and provide some valuable suggestions for their IPO decisions.

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1. Introduction

In 2018, the term "U.S.-China trade war" was gradually known by the Chinese public. With increasing U.S.-China trade conflicts, many Chinese companies were affected adversely. Trump administration enacted a series of restrictions, and the most typical action is imposing higher tariffs on the Chinese exports to the U.S. market. In addition, the American authority asked Chinese firms which are classified into entity lists to get approval from the U.S. government before purchasing certain components or products from U.S. companies and banned American investors from investing in Chinese companies with military backgrounds. These regulations directly threatened the future development of many Chinese enterprises in the American market, stemming their business expansion plans overseas. Especially for China Concepts Stocks, a set of stock of firms that operate the main business in mainland China but are listed on foreign exchanges, U.S.-China trade conflicts may obstruct their sustainable financing in the U.S. market. It is likely to be influenced by the U.S.-China trade war that many Chinese corporations subsequently changed their strategy conducting the second listing in the Hong Kong stock market or homecoming the A-share market. For instance, Alibaba and Jing Dong relisted in the Hong Kong stock market in 2019 and 2020, respectively. Semiconductor Manufacturing International Corporation and China Telecom returned to the domestic A-share market in 2020 and 2021, respectively. However, it is uncertain whether enhanced trade frictions between the U.S. and China have a relationship with those Chinese firms' changed IPOs decisions.

Inspired by the delisting decisions of these firms, investigating the factors affecting

their delisting decisions has become a significant problem. Targeting this topic, Agyei et al. (2019) concluded a positive relationship between its delisting and its high intangible assets. Indeed, high intangible investments make analysts-forecast errors more likely to occur, thereby understating the company's stock price. From another aspect, Tian (2020) proved that higher domestic valuation premiums push those Chinese firms to return, and after all, the company is profit-oriented. Different from them, Cai et al. (2018) stated that poor stock performance is the primary cause for their delisting since securities without desirable returns are usually ignored by investors. Moreover, Fidanza et al. (2018) tested agency problems between managers and shareholders as another reason for delisting, especially in the firms with a high free cash flow. Finally, many scholars involving Balios et al. (2015), Cai et al. (2018), Fidanza et al. (2018), and Xue (2019) all probed the role of financial leverage on delisting. However, Xue (2019) drew a different conclusion from other researchers since he believed that those Chinese firms with low financial leverage are also overlooked due to home bias.

Although previous studies explored different aspects of firms' delisting decisions, two gaps still need to be filled. From one perspective, previous scholars failed to consider the factor of the U.S.-China trade war; From another perspective, they did not get a consistent conclusion regarding the element of financial leverage. Thus, I investigated the factors affecting China Concepts Stock's delisting from the U.S. market, comprising the U.S.-China trade war and financial leverage. In the following sections, this paper mainly reviewed previous related studies, introduced research design

regarding the sample and methodology, final findings, and limitations and contributions of this research.

2. Literature Review & Hypotheses

2.1 Stock undervaluation

That the stock price is undervalued is an acknowledged reason for firms' delisting. However, scholars hold different views on the factors causing stock undervaluation. Agyei et al. (2019) prove that a firm's delisting should be blamed for its high intangible investments. From this research, those scholars explain that high intangible assets leave more space for managers to conduct accounting fraud and increase the possibility of analysts-forecast errors, finally inducing undervalued stock price (Agyei et al., 2019, p. 239). Different from them, Hu et al. (2019) and Xue (2019) find out that the asymmetric information, which is caused by the fact that those U.S.-listed Chinese companies mainly operated their business in China, accompanied by American investors' home bias and some Chinese firms' accounting scandals made Chinese Concepts Stock been undervalued. Hu et al. (2019) and Xue (2019) collect U.S.-delisted Chinese companies and currently active Chinese companies in the U.S. market as the contrast sample, which is vital as it could tell us which financial indicator is the main reason for firms' delisting under the comparison. However, Agyei et al. (2019) fail to take a contrast sample into their research and only use data related to U.S.-delisted Chinese Concept Stock, and such a sample is not reliable enough. Although Hu et al. (2019) and Xue (2019) use similar samples, their processes of sifting data are different. Hu et al. (2019) search those firms who submitted Form 8-K to the SEC in Bloomberg, while Xue (2019) judges whether a firm was delisted using Form-25 since he could observe whether it was voluntarily delisted or not. My research does not focus on whether a firm

voluntarily delisted. Instead, I pay more attention to the influence of U.S.-China trade friction and financial leverage on a firm's delisting decisions; companies may voluntarily and involuntarily be delisted under these factors. In terms of methodology, Hu et al. (2019) and Xue (2019) use a T-Test to verify whether these two groups significantly differ in some financial indicators they studied. While measuring those factors that affect delisting, Hu et al. (2019) use Cox proportional hazard regression model, whereas Xue (2019) applies a logistic regression model. The regression model is feasible in my research as it could satisfy my study purpose of probing the correlations between multiple variables. Besides, it is easy to handle for researchers and lucid to understand for readers.

2.2 Comparative advantages in the home market

Advantages in the home market created by the Chinese stock market's reform and policy changes are another reason for China Concepts Stock's delisting and returning. In his research, Tian (2020) suggests that Chinese GEM entered the Bull market so that those returned China Concepts Stock with a high awareness usually have a higher valuation premium than its domestic competitors. Similarly, Wu (2013) calculates and verifies that the first-day return for the homecoming A-share IPO is far higher than in ADR offerings and H-share IPOs. Additionally, Hu et al. (2019) mention that the Chinese government offered favored environments in the home market by relaxing the Variable Interest Entity and the Internet Content Provider License. One weakness with Tian's sample (2020) is that he decides which China Concepts Stock is listed on the U.S.

market using SINA Finance since the SINA Finance website is an unofficial platform and unreliable database that can only be used for reference. However, Wu's sample (2013) is different from the other two and includes three sets of data: domestic A-share IPOs, first-time ADRs by Chinese firms, and H-share IPOs by mainland Chinese companies because his aim for research also involved calculating and comparing first-day return for these three different sets of IPOs. Regarding the methodology, Tian (2020) conducts case studies by analyzing three U.S.-delisted Chinese Concepts Stock, while one of the limitations of this approach is that conditions of these selected three firms may be accidental and cannot be applied to predict all of the Chinese Concepts Stock. By contrast, the event study model used by Hu et al. (2019) is reliable, which could tell us the impact of an event on the firm's value. An event study is the preferred statistical method in my research for exploring the effect of particular U.S.-China trade policies on the previous stock price of those U.S.-delisted Chinese firms.

2.3 Firms' financial leverage

In this topic, many scholars reached an agreement that a firm's financial leverage is liable to its delisting from the American market. Balios et al. (2015), Cai et al. (2018), and Fidanza et al. (2018) agree that a company's financial distress costs posed by a high leverage level could be the leading force why foreign firms delist from the American exchanges. Nevertheless, Xue (2019) counters that those delisted Chinese companies from the U.S. market have a significantly lower average debt ratio than other active firms in this market. It is pretty confusing why Xue (2019) reveals a different

consequence from other researchers. As a response, Xue (2019) illustrates that it is due to the home bias, which means that American investors usually favor local companies with high leverage rather than foreign stocks with low leverage. In contrast, other scholars believe that an excessively high debt ratio is a burden for firms to repay, and it indicates that the company may have already fallen into financial distress, which further caused them to make delisting decisions. Besides, the results gained by Cai et al. (2018) and Fidanza et al. (2018) cannot be applied to my research since their studies mainly focus on U.S.-delisted Western country's companies or London Stock Exchange, respectively. Although Cai et al. (2018) and Xue (2019) draw divergent conclusions, they both use multivariate analysis. It proves again that the broad application of the regression model on the study field, while the multiple regression model is more favored by me than the multivariate regression model as there is only one dependent variable and multiple independent variables in my study.

2.4 Stock performance

Stock performance is also closely related to a firm's delisting decisions. Balios et al. (2015), Cai et al. (2018), and Tian (2020) conclude that a poor stock performance directly brought about delisting taken by some companies since with a lower stock return, investors are unwilling to put their money in such a company. Similarly, Konno and Itoh (2018) apply cost-benefit analysis in the construction industry and demonstrate that companies may delist when their market capitalization is lower than listing maintenance cost. One of Konno and Itoh's research (2018) limitations is that they

cannot analyze voluntary delisting firms for non-financial reasons or strategy purposes due to the restrictions on data availability. In addition, their results cannot be compared with mine because they limited the study within the construction and real estate industry in Japan. Besides, Balios et al. (2015) failed to take environmental changes after 2012 into their paper due to the year they conducted the research, which is vital as my result may be inconsistent with them due to some accidental factors that occurred over the past few years. Furthermore, Balios et al. (2015), Konno and Itoh (2018), and Cai et al. (2018) apply a logit model to simulate the probability of poor stock performance or low market capitalization resulting in the firm's delisting.

2.5 Agency problems

Some scholars regarded the agency problem as an essential factor causing the firm's delisting. Fidanza et al. (2018) integrate Free Cash Flow and Return on Assets as agency problems between managers and shareholders and manifest that increased agency cost resulted in the firm's delisting. Tian (2020) also proves the role of agency problems on delisting by analyzing the management buyout taken by Shanda Games. Likewise, Colak et al. (2020) point out that a firm's IPO underpricing and delisting should be blamed on underwriter agency problems since some mercenary underwriters persuade companies to accept a low IPO price and profit from that. The model used by Colak et al. (2020) is different from other studies mentioned in this paper, and what they applied is high-dimensional statistics, a unique model from another statistical model. High-dimensional statistics fit Chinese IPO conditions since they usually include a large

volume of variables and fixed sample size (Colak et al., 2020, p. 5). Moreover, they compare four predictive models—generalized linear model, boosted generalized linear model, gradient boosted trees, and random forest, to predict the possibility of regulatory delisting of the Chinese firms (Colak et al., 2020, p.17). Although their approach has referential significance to my research, it usually takes more time to construct models, so that it is an arduous task for me to finish it within the limited time framework.

2.6 Hypotheses

From the articles mentioned above, I found two gaps existed in the related research field and developed my hypotheses accordingly:

Hypothesis 1: U.S.-China trade conflicts positively affect China Concepts Stock's delisting.

Hypothesis 2: There is a positive relationship between the financial leverage and China Concepts Stock's delisting.

3. Methodology

3.1 Data collection

To address my research question in the regression model, I built a dataset including all Chinese firms that delisted from U.S. NYSE and NASDAQ exchanges from 2014 to 2022 and active listed Chinese firms in these exchanges. Creating a dataset involves multiple processes: firstly, I searched Chinese firms which submitted FORM-25 NSE to U.S. Securities and Exchange Commission on the SEC website, and this form is used by filing a notice of deregistration. Secondly, I collected needed financial data of these firms from the database of Bloomberg. These steps yield a sample of 116 U.S.-delisted Chinese firms. Thirdly, I screened Chinese firms which are now still active in U.S. NYSE and NASDAQ exchanges and arranged their financial data from Bloomberg, which produced a sample of 153 active Chinese firms. The total size of collected data is 269, and the final usable sample instead is 248 since some samples lacked related data required by independent variables.

3.2 Logistic regression model

I build a logistic regression model to test the relationship between U.S.-China trade conflict, financial leverage, and delisting, according to Xue's study (2019). I will use Trade Policy Uncertainty Index (TPU) to show the U.S.-China trade conflict and debt ratio to show the companies' financial leverage. TPU Index is established by staff in the International Finance Division of the Federal Reserve Board by reflecting the frequency of articles in American newspapers discussing trade-related policy uncertainty. TPU

Index and the debt ratio are both independent variables. In addition, I added free cash flow and return on assets to my model as independent variables. Delist is a dependent variable standing for U.S.-delisted Chinese firms. Delist is set as 1 if the observation is delisted China Concepts Stock and 0 if it is an active Chinese company. Firm size (natural logarithm of total assets) and firm age (natural logarithm of time length from listing date) will be control variables because they affect the study result. Finally, these variables are inputted into the R language to formulate a logistic regression model. The logistic regression model built in this research is stated as:

$$\text{Ln}\left(\frac{P_{delist}}{1 - P_{delist}}\right) = \beta_0 + \beta_1 TPU + \beta_2 Debt\ Ratio + \beta_3 ROA + \beta_4 FCF + \beta_5 Size + \beta_6 Age + \varepsilon$$

Table 1: Description of the variables

Variable	Symbol	Description
<i>Dependent variable</i>		
Delist	P_{delist}	Probability for a China Concept Stock's delisting, dummy variable set to 1 if the firm delisted and 0 otherwise.
<i>Independent variables</i>		
Trade policy uncertainty	TPU	Trade policy uncertainty index.
Debt ratio	$Debt\ Ratio$	Total debts divided by total assets.
Return on assets	ROA	Net income divided by total assets.
Free cash flow	FCF	Operating income before depreciation minus the sum of total income taxes, gross interest expenses on short and long-term debts, preferred stock dividend, and common stock dividend.
Firm size	$Size$	Natural logarithm of total assets.
Firm age	Age	Natural logarithm of time length from listing date.
Return on equity	ROE	Net income divided by total equity

3.3 Event study

Additionally, the event study employed by Hu et al. (2019) was applied in my

research to test the influence of the U.S.-China trade conflict on delisted China Concepts Stock. An event window of 11 days will be used, consisting of five pre-event days, five post-event days, and the event date. The estimation window length is 10, and the number of cumulative abnormal returns to calculate is 3. Besides, market return is derived from S&P 500 Index. Chinese firms which delisted from the American stock market after 2018 and have intact stock price data will be examined because delisted companies before 2018 were not influenced by the U.S.-China trade war. Table 2 and table 3 show the delisted China Concepts Stock and U.S.-China trade policies examined in the event study.

Table 2: Delisted China Concepts Stocks examined

Firm name	Delisting date
China Telecom Corp Ltd.(CHA)	01/08/2021
China Unicom Hong Kong Ltd.(CHU)	01/08/2021
China Mobile Ltd.(CHL)	01/08/2021
CNOOC Ltd.(CEO)	03/04/2021

Table 3: U.S.-China trade policies studied

Date	U.S.-China trade policies
07/06/2018	U.S.-China trade war began while the U.S. imposed 25% tariffs on \$34 billion worth of Chinese goods.
10/07/2019	The U.S. put 8 Chinese high-tech companies and 20 public security bureaus into the Export Administration Regulations Entity List. This sanction meant that they needed to get U.S. authority approval to purchase components from U.S. companies.
12/02/2020	U.S. government started to prohibit imports of cotton products made by the Xinjiang Production and Construction Corps.

4. Results

4.1 Descriptive statistics

Table 4: descriptive analysis for the sample

	mean	sd	median	mad	min	max	range	skew	kurtosis	se
Status*	1.38	0.49	1.00	0.00	1.00	2.00	1.00	0.48	-1.78	0.03
TPU	52.44	36.92	41.68	0.00	16.78	266.00	249.22	3.52	13.65	2.34
Debt Ratio	15.04	16.81	8.50	11.83	0.00	74.70	74.70	1.31	1.15	1.07
ROA	-3.22	19.09	0.50	9.95	-105.55	47.27	152.82	-1.92	6.99	1.21
FCF	316.77	2265.89	-0.03	17.07	-1209.42	29561.29	30770.71	10.19	118.09	143.88
Size	19.06	2.59	19.13	2.66	13.27	26.30	13.03	0.15	-0.21	0.16
Age	1.67	0.83	1.79	0.90	-0.69	3.22	3.91	-0.37	-0.36	0.05

Based on table 4, the Mean Absolute Deviation of TPU is 0, which is small enough, indicating most of the data values in the TPU variable are close to the mean. In addition, the Standard Error of the Debt ratio is 1.07, which is relatively small, showing the sample mean does not deviate from the actual population mean too far, and the sample is representative of the population. The Kurtosis of Debt ratio is 1.15, suggesting that related data have light tails and do not include outliers. Besides, control variables of Size and Age are extremely close to normal distribution based on their kurtosis. However, the Standard deviation of Free cash flow is extremely large, manifesting a big difference between FCFs among different firms.



Figure 1: Number of China Concepts Stock' delisting by year



Figure 2: Trend of China Concepts Stock's IPOs by year

Based on figure 1, there is a significant downward trend for the number of China Concepts Stock's delisting from 2016 to 2018. However, delisting became more frequent again in 2019. According to figure 2, there has been a continuous upward trend for the number of Chinese firms' IPOs in the U.S. stock market from 2014 onwards. However, it suddenly declined from 2016 and reached the lowest point in 2019. Combining these two figures shows that the enthusiasm of Chinese firms listed on the

U.S. exchanges dropped and Chinese companies' willingness to delist from the American exchanges increased in 2018 and 2019. Meanwhile, the U.S.-China trade war broke out, which may be why the phenomena mentioned above. More detailed evidence supporting this opinion will be explored in the following.

4.2 Regression analysis

4.2.1 Regression relationships

Table 5: Results of regression model 1

	Coefficients	St. Error	Z value	Pr(> z)	VIF	[95% Conf. interval]	
(Intercept)	-7.9699	1.4760	-5.400	6.67e-08***		-11.0254	-5.2118
TPU	0.0428	0.0106	4.040	5.35e-05***	1.0466	0.0251	0.0668
Debt Ratio	-0.0206	0.0103	-2.012	0.0442*	1.1445	-0.0416	-0.0014
ROA	0.0139	0.0096	1.445	0.1485	1.0465	-0.0045	0.0335
FCF	-0.0001	0.0001	-1.547	0.1218	1.2565	-0.0004	3.0593e-06
Size	0.2636	0.0726	3.633	0.0003***	1.3244	0.1257	0.4114
Age	0.4110	0.1992	2.063	0.0391*	1.0388	0.0256	0.8098

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Null deviance: 330.11 on 247 degrees of freedom
Residual deviance: 257.07 on 241 degrees of freedom
McFadden's Pseudo R² 0.2213

From table 5, the coefficient of TPU is 0.0428, and there is a positive relationship between TPU and a China Concepts Stock's delisting, indicating the log-odds of a Chinese firm delisting from U.S. exchanges will increase by 0.0428 if TPU Index goes up 1. In other words, a Chinese firm is more prone to delist from U.S. exchanges with an intensified U.S.-China trade friction, which result proves my hypothesis 1. An increasing U.S.-China trade conflict set more barriers on Chinese firms which plan to develop and expand their business in American. A lot of Chinese firms' export revenues

dropped due to the limited tariff and quota. Those Chinese firms that need to purchase core components from the U.S. to finish production must change their business strategy. Those Chinese firms labeled as entity list were forced to compulsorily delist from the U.S. exchanges, meaning that many Chinese enterprises lose the opportunity to raise capital from the largest capital market in the world. Undoubtedly, U.S.-China trade friction restricts the exploration of Chinese firms to the U.S. market. Besides, the coefficient of debt ratio is -0.0206, which manifests a negative relationship between a Chinese firm's financial leverage and its delisting from the U.S. stock market. When a Chinese firm's debt ratio decreases by 1, the log-odds of its delisting from U.S. exchanges will instead rise 0.0206, contradicting with my hypothesis 2 as well as the result of Cai et al. (2018) but conforming to Xue's conclusion (2019). The rules used by general companies cannot explain the relationship between financial leverage and delisting for China Concepts Stock. Information asymmetry is caused by the fact that Chinese firms operate in China but list in the U.S., which led to home bias among most U.S. investors. It is easy to understand because most people prefer to contact what they are already familiar with than the unknown. These investors would rather purchase domestic firms' stocks with high financial leverage than foreign firms' stocks with low financial leverage since they own more channels to gain information about operating conditions for their domestic firms, making foreign firms' investment comparatively riskier.

The standard error column tells us that its values for these variables are small enough to show a high precision of the estimate of the coefficients. Additionally, the

model's p-values of intercept, TPU variable, Debt ratio variable, Size variable, and Age variable are all less than 0.01, demonstrating that their results are statistically significant. However, p-values of the ROA and FCF variables are too large to prove their results are statistically significant; therefore, return on assets and free cash flow do not play an important role in this regression model. Further, null deviance and residual deviance are shown, which are used to calculate Pseudo R-squared. Pseudo R-squared is 0.2213, which usually indicates a good model fitting, and my regression model could predict the outcome well. Also, VIF for these independent variables is all about 1, meaning that those predictors are not collinear with other variables. Furthermore, according to figure 3 below, most Chinese firms which delisted from U.S. exchanges are predicted to have a high probability of delisting. And most Chinese firms which are active are predicted to have a low probability of delisting. Therefore, my logistic regression model did a sound job in what it will predict.

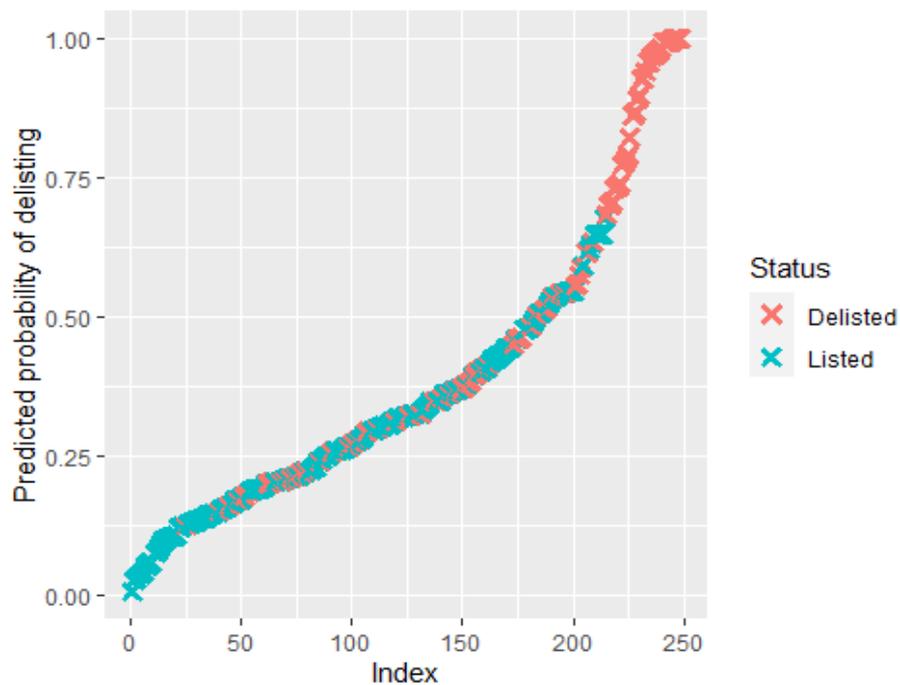


Figure 3: Predicted probability curve

4.2.2 Robustness testing

Table 6: Results of regression model 2

	Coefficients	St. Error	Z value	Pr(> z)	VIF	[95% Conf. interval]	
(Intercept)	-7.9960	1.4770	-5.412	6.23e-08***		-11.0545	-5.2348
TPU	0.0426	0.0153	4.050	5.11e-05***	1.0496	0.0250	0.0665
Debt Ratio	-0.0218	0.0149	-2.074	0.0380*	1.2044	-0.0432	-0.0018
ROA	0.0232	0.0202	1.149	0.2504	4.6096	-0.0163	0.0639
FCF	-0.0001	0.0001	-1.548	0.1217	1.2566	-0.0004	3.1821e-06
Size	0.2652	0.0727	3.649	0.0003***	1.3253	0.1271	0.4133
Age	0.4136	0.1996	2.072	0.0383*	1.0393	0.0275	0.8134
ROE	-0.0050	0.0094	-0.529	0.5966	4.7298	-0.0234	0.0141

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Null deviance: 330.11 on 247 degrees of freedom
Residual deviance: 256.79 on 240 degrees of freedom
McFadden's Pseudo R² 0.2221

To test the robustness of the results, a new independent variable, ROE, was added in model 2. For model 2, after adding the ROE variable, intercept, TPU variable, Debt ratio variable, Size variable, and Age variable are still statistically significant. U.S.-China trade conflict is still positively related to the China Concepts Stock's delisting, and the financial leverage is still negatively related to their delisting. The findings in model 2 still match with hypothesis 1 and contradict hypothesis 2. Overall, they are consistent with the findings in Table 5, showing that the research results are not affected by the model applied, and model 1 is robust enough.

4.2.3 Confusion matrix testing

Table 7: Confusion matrix analysis for model 1 and model 2

	Model 1			Model 2		
	prediction	reference		prediction	reference	
		0	1		0	1
	0	135	48	0	134	48
	1	18	47	1	19	47
Accuracy	0.7339			0.7298		
95% CI	(0.6743, 0.7878)			(0.67, 0.7841)		
P-value (Acc>NIR)	6.938e-05			0.0001201		
Kappa	0.4011			0.3933		
Mcnemar's Test P-Value	0.0003575			0.0006245		
Sensitivity	0.8824			0.8758		
Specificity	0.4947			0.4947		
Pos Pred Value	0.7377			0.7363		
Neg Pred Value	0.7231			0.7121		
Prevalence	0.6169			0.6169		
Detection Rate	0.5444			0.5403		
Detection Prevalence	0.7379			0.7339		
'Positive' Class : 0						

Table 7 tells us that I correctly classified 135 China Concepts Stocks as active and incorrectly classified 48 U.S.-delisted Chinese firms as active in model 1. Also, I correctly identified 47 U.S.-delisted Chinese firms and incorrectly classified 18 active China Concepts Stocks as delisted. Therefore, the accuracy of predicting Chinese firms' delisting in model 1 is 73.39%, with a 95% confidence interval of 67.43% and 78.78%. However, although 0.4011 Kappa is relatively low, it represents an acceptable prediction precision when controlling the sample's balance. Additionally, it is evident that p-values for these results are both statistically significant. Moreover, a 0.8824 sensitivity means that model 1 correctly predicted 88.24% of active Chinese firms in U.S. exchanges. A 0.4947 specificity indicates that model 1 could correctly predicted

around 50% of U.S.-delisted Chinese firms from U.S. exchanges. Hence, the rate of type I error is 11.76%, but the rate of type II error is 50.53%. On the predictability of the two models, model 1 has better predictability than model 2 since model 2 has a worse accuracy with 72.98%.

Besides, according to the ROC curve for model 1, it can be found that it is far away from the 45-degree diagonal of the ROC space, which demonstrates good performance of predictive ability. Since the area under the ROC curve is 0.7681, model 1 effectively distinguishes China Concepts Stock that delisted or is active, representing a good separability measure.

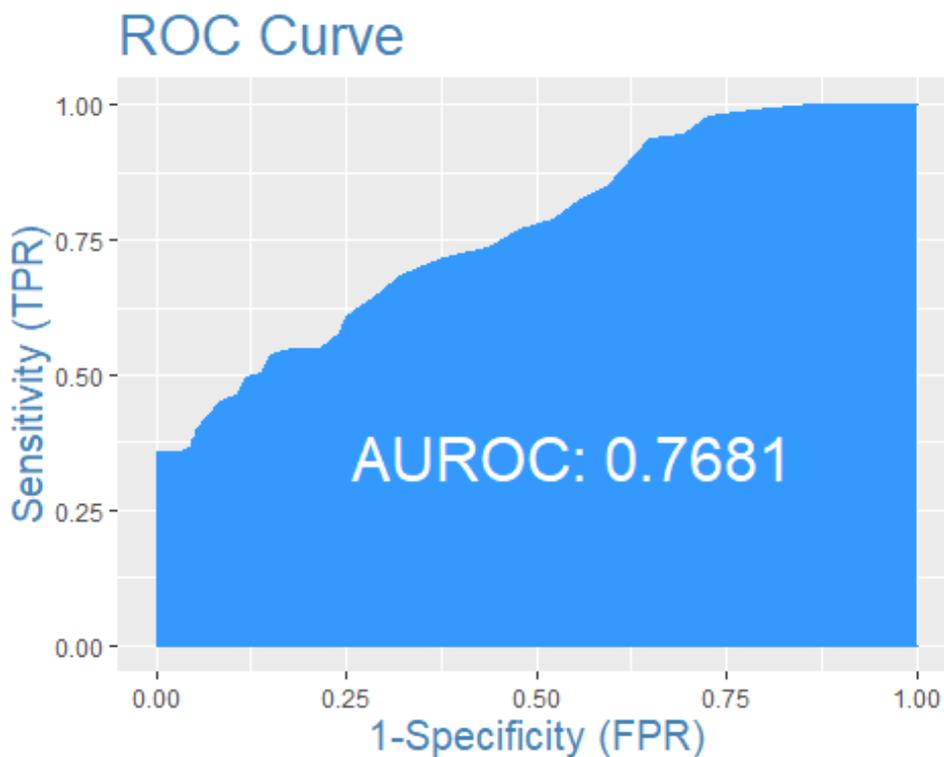


Figure 4: ROC curve for model 1

4.3 Event study analysis

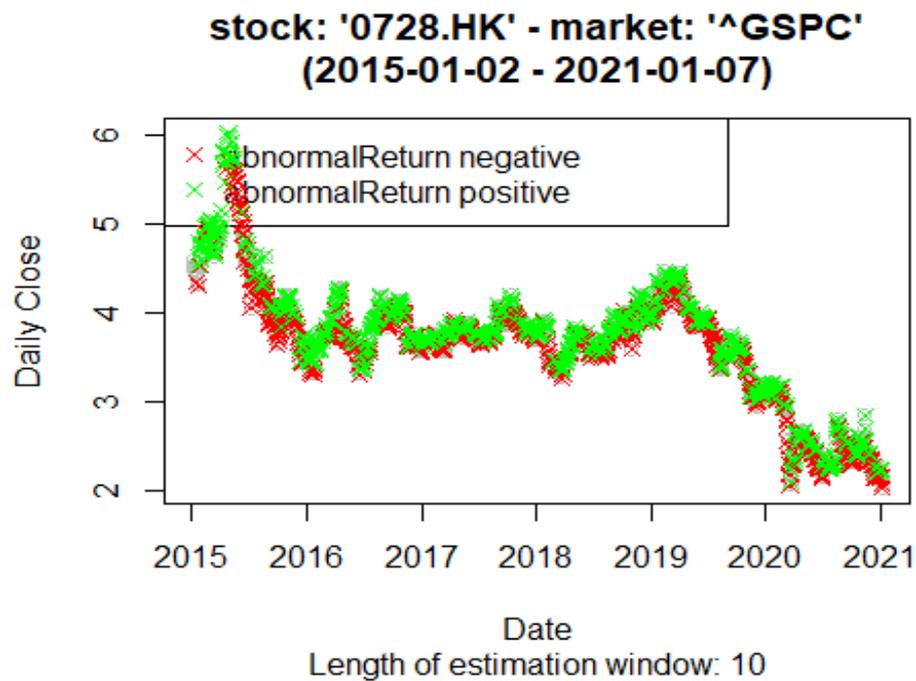


Figure 5: Stock price trend for China Telecom

Figure 5 manifests abnormal returns and the changing stock price trend for China Telecom Corp. Ltd. (CHA) from 2015 to the year before it was delisted. The same types of graphs for China Unicom Ltd. (CHU), China Mobile Hong Kong Ltd. (CHL), and CNOOC Ltd. (CEO) are attached in the section of the appendix. It can be seen that China Unicom presented a decreasing pattern in its stock price after 2018, and there was also a turning point in 2019 in which the other three companies all started to appear a declining stock price. Thus, events in 2018 and 2019 may affect their stock prices and significantly influence and forebode their delisting. Also, the U.S.-China trade war broke out simultaneously, and whether the falling stock price is due to trade conflicts will be examined in the following part.

Table 8: Event analysis for China Telecom on Jul. 6, 2018 as well as Dec. 2, 2020

Days	Date	Abnormal return	Cumulative abnormal return	Stock return
-5	2018-06-27	0.0927	0.3571	3.59
-4	2018-06-28	0.1131	0.5291	3.67
-3	2018-06-29	0.0886	0.4036	3.67
-2	2018-07-03	0.0381	0.3328	3.64
-1	2018-07-05	0.0743	0.3143	3.65
0	2018-07-06	0.0712	0.2724	3.62
1	2018-07-09	0.1137	0.2975	3.65
2	2018-07-10	0.0421	0.3013	3.65
3	2018-07-11	-0.0831	0.1440	3.56
4	2018-07-12	-0.0863	-0.0136	3.54
5	2018-07-13	-0.0393	-0.1667	3.56
-5	2020/11/24	0.09033	-0.28488	2.41
-4	2020/11/25	0.05054	-0.12111	2.42
-3	2020/11/27	0.07067	0.118224	2.43
-2	2020/11/30	-0.0686	0.142915	2.34
-1	2020/12/1	-0.0821	-0.02948	2.33
0	2020/12/2	-0.0236	-0.10357	2.36
1	2020/12/3	-0.008	-0.18225	2.37
2	2020/12/4	-0.0158	-0.12942	2.35
3	2020/12/7	-0.0722	-0.11959	2.29
4	2020/12/8	-0.091	-0.18706	2.24
5	2020/12/9	-0.1279	-0.30694	2.21

Combining my results in table 8 with figure 6 and figure 7 shows negative abnormal returns and cumulative abnormal returns for China Telecom after intensifying U.S.-China trade conflicts. Likewise, the same graphs with similar results for the other three firms are attached in the appendix. These results conclude that intensified U.S.-China trade frictions from 2018 contributed factors for China Concepts Stock's delisting. In other words, trade conflicts between U.S. and China that occurred on these dates create negative value on U.S.-delisted Chinese firms and negatively affect their

stock price. Hence, my hypothesis 1 could be substantiated with the results from the event study.

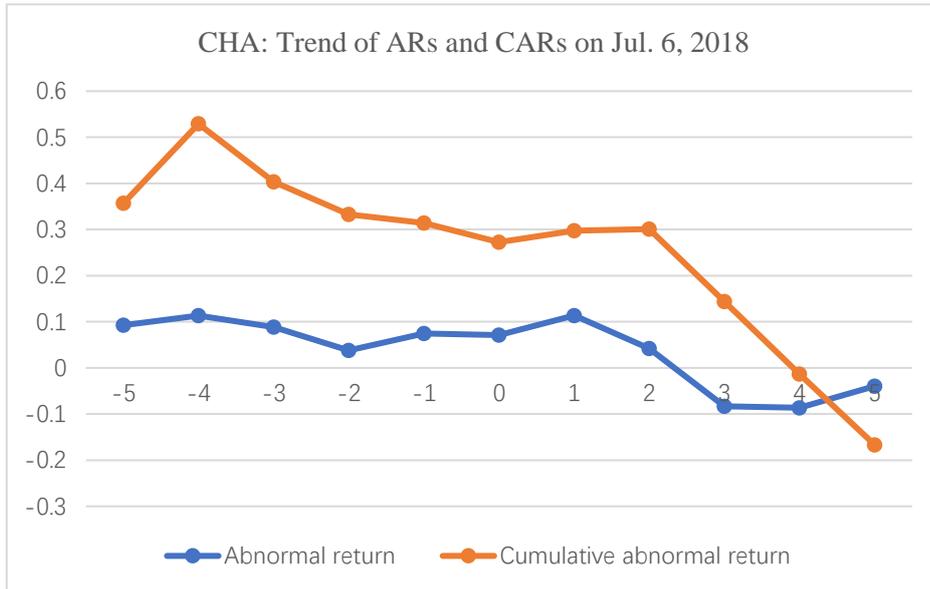


Figure 6: The trend of ARs and CARs for China Telecom on Jul. 6, 2018

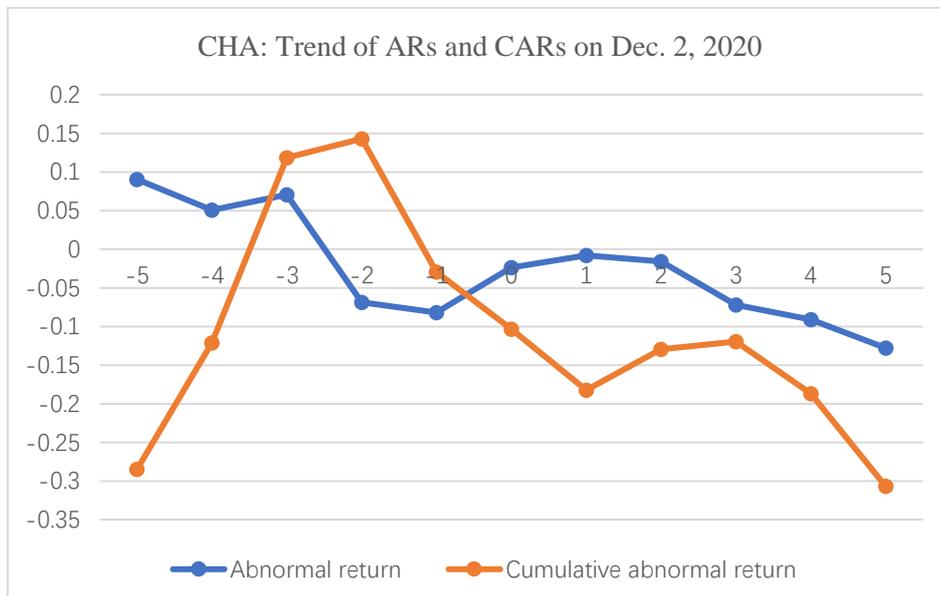


Figure 7: The trend of ARs and CARs for China Telecom on Dec. 2, 2020

5. Conclusion

Most firms globally have recognized IPOs in the U.S. stock market as the best choice to raise capital and expand the business. Nevertheless, an increasing number of Chinese firms delisted from the world's largest capital market. In order to understand this trend, this research explored the reasons for China Concepts Stock's delisting from 2014 to 2022 based on a logistic regression model and event study.

The result shows that U.S.-China trade frictions positively influence Chinese firms' delisting from the American exchanges. Passive effects especially can be shown in the declining stock price and negative abnormal returns. Along with the intensified trade conflicts, the American government enacted many policies to restrict the development of Chinese firms in the U.S. market, which disadvantageous policies pose higher costs and lead to lower revenues on Chinese firms. Especially the setting of entity list and sanctions to Chinese firms with a military background, like China's big three state-run businesses in the telecommunication industry, directly intercept their financings in the U.S. market. Prohibition targeted to Huawei for importing core hardware from the U.S. market also stimulates Huawei to research and develop those high-tech components. Overall, the trade war between U.S. and China did harm to China Concepts Stock's benefits.

Additionally, the result manifests that a negative relationship between financial leverage and Chinese firms' delisting from the U.S. exchanges, which is contradicted with the conclusion made by Balios et al. (2015), Cai et al. (2018), and Fidanza et al. (2018). Many Chinese firms are undervalued in the American financial market due to

home bias which the American investors are more prone to purchase their domestic stocks (Hu et al., 2019). As a result, those Chinese firms with an excellent financial condition and low financial leverage are more likely to go to another stock exchange seeking a more fair stock price and more favorable financing environment. Meanwhile, since the listing condition in mainland China is stricter than in the U.S., some Chinese firms that did not fulfill the listing condition in the domestic generally conducted IPOs in U.S. exchanges. Driven by this reason, U.S.-delisted Chinese firms with low financial leverage have more chances to go public in China.

5.1 Limitations

In fact, some limitations need to be improved in the future study. Firstly, the sample used in the regression model is not perfect enough since there is a limited way to distinguish firms with a strategic delisting or a compulsory delisting. Some companies may go private to pursue better development, and this part of the sample should be excluded from this research. Combining internal and external news to evaluate how to classify delisting decisions may overcome this limitation. In addition, for those Chinese firms still active in the U.S. exchanges, there is no distinguishable TPU Index among themselves since they do not have an exact delisting date. Thus, the TPU Index assigned to them is the index in 2021, showing that they are still in the U.S. financial market. Future researchers need to find a more accurate expression for quantifying trade conflicts between countries to address this limitation. Moreover, the events examined in my event study are finite due to the limited time, so that there is no way to construct a regression and conduct a more advanced analysis regarding this topic. In future

exploration, researchers may gather more related events building a more comprehensive event study model.

5.2 Contributions

Even though this research has some limitations, it will still contribute a lot to the study of delisting decisions, especially focusing on China Concept Stocks. On one side, those active Chinese firms in the American market need to consider how many profits they can continue to earn from that market and what risks they may suffer in the future. On another side, for those Chinese firms which have not been listed in the U.S. market but planned to do so, they need to consider and compare that whether it is a better choice to conduct IPO in the American market rather than other markets. Thus, my study will have referential value for those confusing companies, provide valuable suggestions for their IPO decisions, and fill the gap existing in the previous studies.

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7. Appendixes

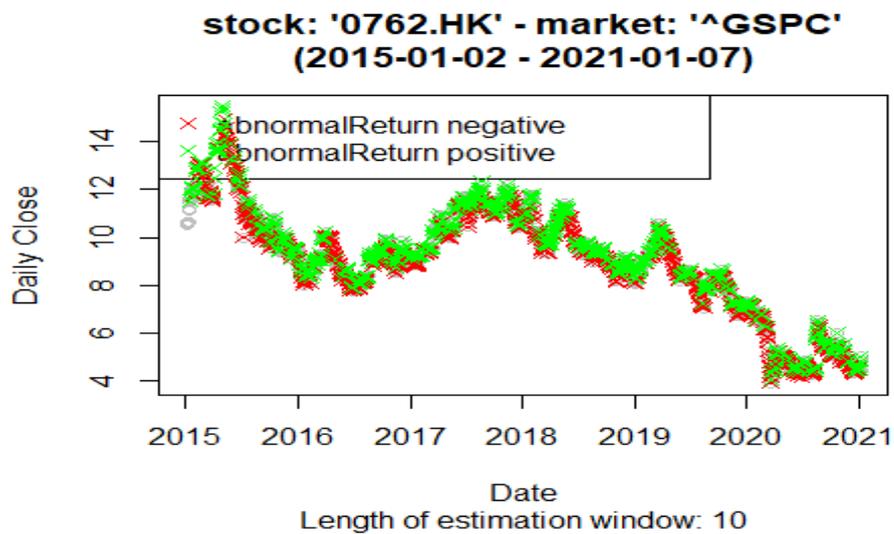


Figure 8: Stock price trend for China Unicom

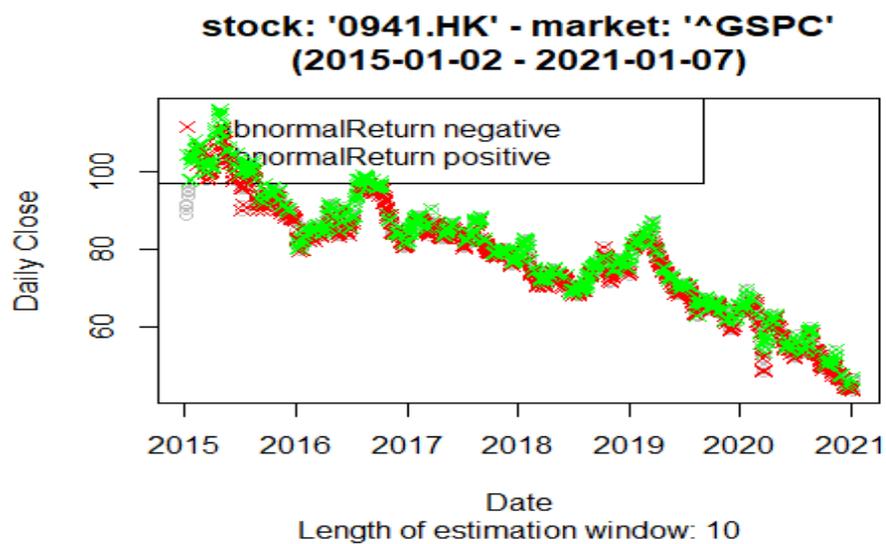


Figure 9: Stock price trend for China Mobile

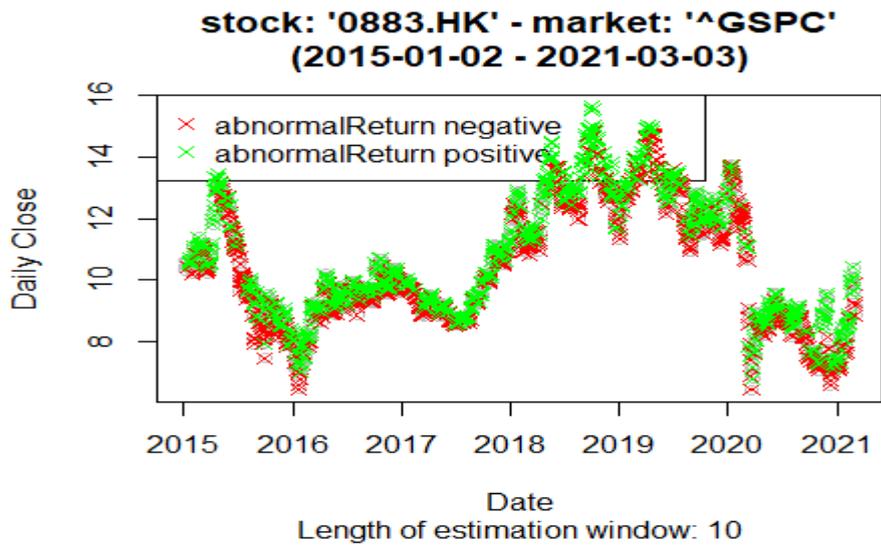


Figure 10: Stock price trend for CNOOC

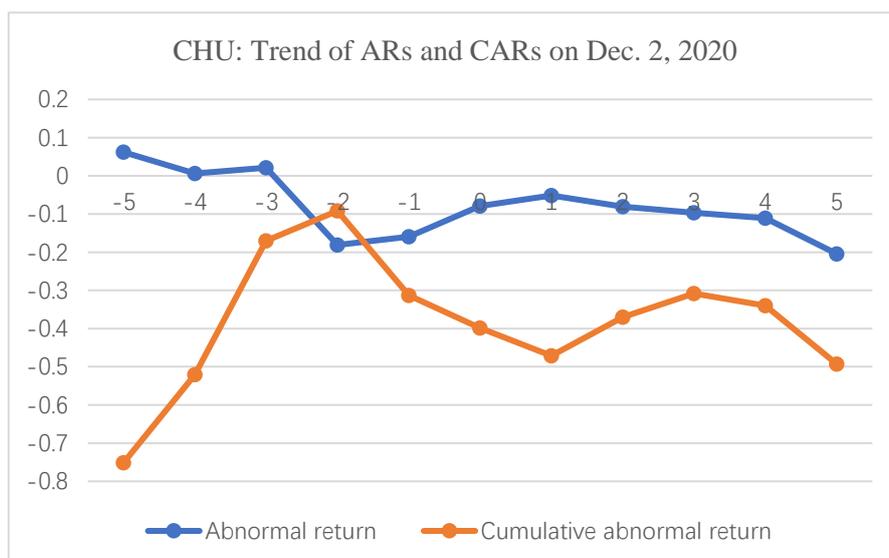
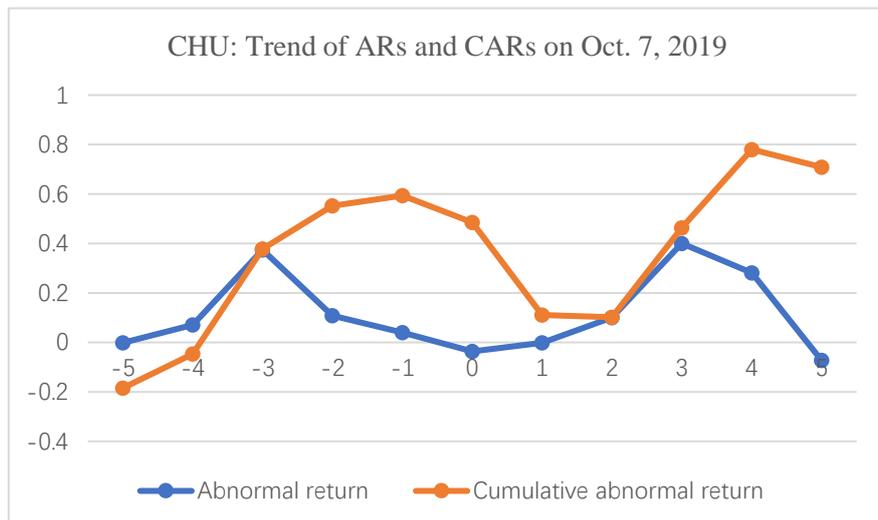


Figure 11: The trend of ARs and CARs for China Unicorn

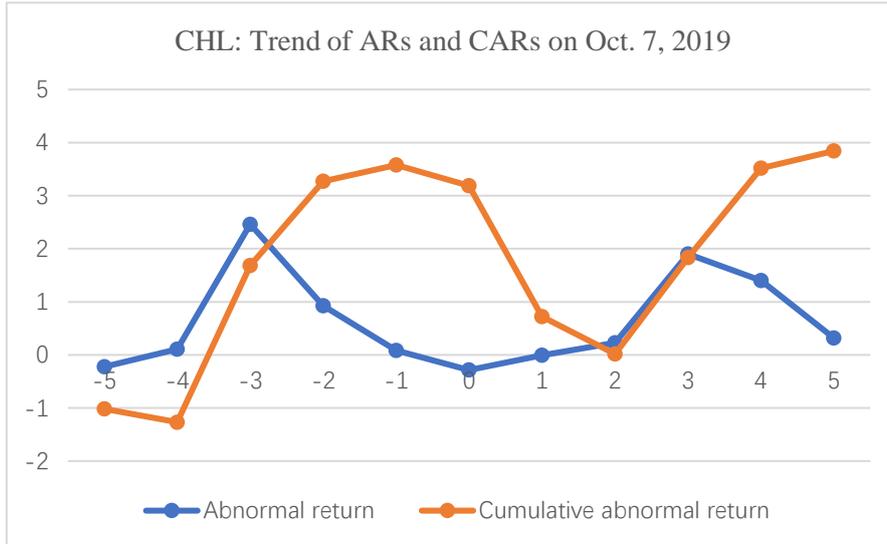


Figure 12: The trend of ARs and CARs for China Mobile

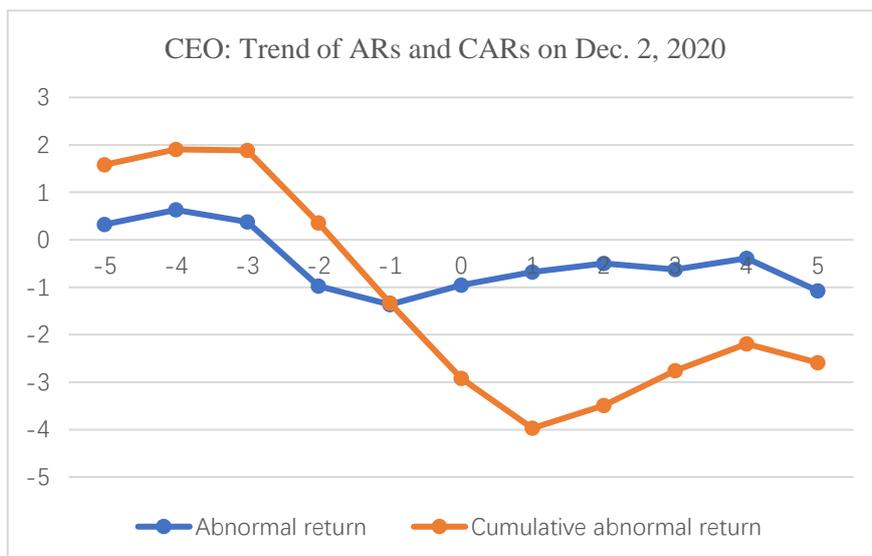
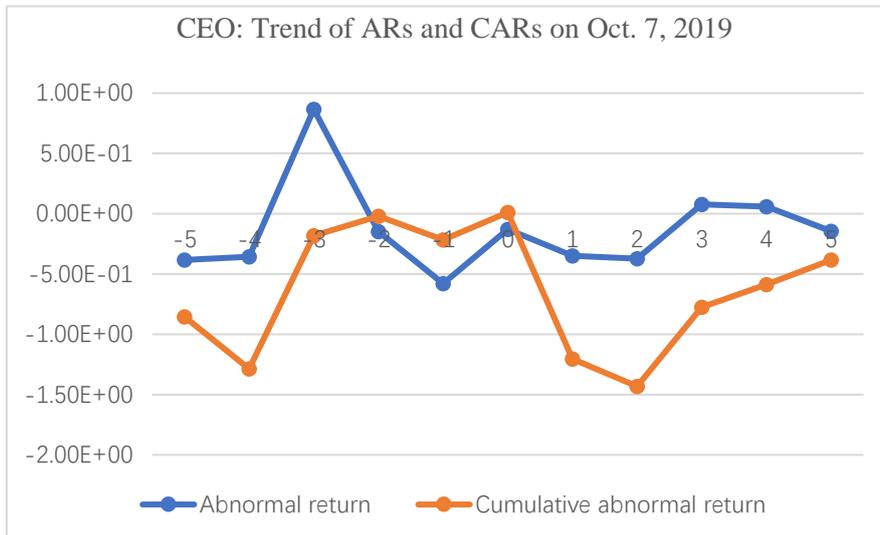


Figure 13: The trend of ARs and CARs for CNOOC