How Much Is Blockchain Related News Worth?

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In the blockchain frenzy, some companies announce to initiate or increase blockchain-related business and/or change their names to include "blockchain" or "bitcoin." The US market reacts with an average cumulative abnormal return of 80.96% for the 2-day window encompassing the announcement day and the very next day. The effect is an average of 9.37% cumulative abnormal return for Mainland China and Hong Kong. After a year, all the US companies remained above pre-announcement levels, yet quite some companies in Mainland China and Hong Kong revert to pre-announcement levels and sometimes even lower; such reversal indicates that previous valuation increase is temporary.

Keywords: blockchain, bitcoin, changing name, announcement, cumulative abnormal return, valuation

INTRODUCTION

> *"Nobody should think it is OK to change your name to something that involves blockchain when you have no real underlying blockchain business plan and try to sell securities based on the hype around blockchain."*
> —Jay Clayton, former SEC Chairman, in 2018 testimony to the Congress

In 2017, bitcoin experienced a 1,500% rally. In this crypto craze, some companies change their names to include "bitcoin" or "blockchain" and/or initiate/increase blockchain-related business. We find that, amid this market frenzy, sample companies in the US increase in valuation by 81.51% during the 2 days including the announcement and its very next day, with the cumulative abnormal return (CAR) being 80.96%. Depending on whether the announcements include changing company names and/or if the corporations plan to increase blockchain related business, the CARs vary from 47.11% to 285.58%.

Examining the phenomenon in Mainland China and Hong Kong, we discover a qualitatively similar pattern. Sample companies overall demonstrate a positive raw return of 9.61% during the 2-day window of announcement and the very next day; the cumulative abnormal return is 9.37%. Both returns are statistically significant. When groups are formed based on if the companies change names and/or increase block-chain related business, CARs for various groups range from 3.0% to 54.06% for the 2-day window.

To assess whether the valuation increase is temporary or permanent, we examine the long run performance and find that, from -60 to 250 trading days around the announcement, sample companies in the US mostly stay near or above increased valuations, which means valuation increase is permanent. The

exceptions are companies that change names without prior blockchain business; they revert to slightly above pre-announcement valuations, indicating value change resulting from announcement is temporary. Very interestingly, although the announcement effect in Mainland China and Hong Kong is positive, the long run performance largely reverses, even below pre-announcement levels. Companies that change names with prior blockchain business are the exceptions that stay above announcement level and experience permanent value increase.

LITERATURE REVIEW

There are existing studies on name changes in corporations and mutual funds. The entire procedure for corporations to change names is consuming and risky. Corporations do it with the expectation of more benefits than costs. Bosch and Hirschey (1989) discover that corporations changing names generate an excess return of 1.62% in the 21 days around announcement. Further, this statistically insignificant return is canceled out by the negative return after announcement. Karpoff and Rankine (1994) document that, in the 2 days around announcements of name changes, companies experience a statistically insignificant excess return of 0.4%.

Some researchers examine specific types of name change. Cooper, Dimitrov, and Rau (2001) find that companies changing names to internet-related names generate an average cumulative abnormal return of 74% in the 10 days around announcement. The absence of return dissipation in the longer term further indicates that the valuation increase is not temporary, but permanent. Cooper, Khorana, Osobov, Patel, and Rau (2005) examine the post-internet period and document both a significant reduction in changing to internet-related names and a swift increase in deleting internet from the names. Such deletion is associated with a cumulative abnormal return of 64%. Related to company name, Bae and Wang (2012) discover that, during the China stock market boom of 2007, Chinese companies listed in the US that have the word "China" in company names outperform those that do not. This is not due to risk, liquidity, etc., but price pressure from increased investor attention.

Espenlaub, Haq, and Khurshed (2017) and Cooper, Gulen, and Rau (2005) investigate name changes of mutual funds. SEC Rule 35d-1 became effective in 2001; it requires registered investment companies invest at least 80% of their holdings in the investment suggested by their names. Cooper, Gulen, and Rau (2005) show that, not only mutual funds that change names to reflect a current hot style do not improve in performance, but those funds experience an average cumulative abnormal flow of 28%. Espenlaub, Haq, and Khurshed (2017) examine the impact of the rule and find that: name changes are mostly driven by managerial incentives, portfolios are not adjusted to reflect the new names, investors increase flows into such funds, and these funds actually underdeliver in returns.

METHOD

Our sample includes 47 publicly traded companies in the US, Mainland China, and Hong Kong. Table 1 contains the description. These companies announce between March 2016 and September 2018 that they will pivot more business toward blockchain or change company names or trading symbols to include "blockchain" or "bitcoin." The collection of news is obtained from major platforms such as Bloomberg terminal and Reuters.com. For companies overseas, we conduct additional searches on local media platforms. Announcement date is the earliest day we could identify any blockchain-related news for the company. In the case of name change, it is either the actual announcement day if available or the earliest day that the name change becomes effective. The latter case bias against us.

TABLE 1
SAMPLE STATISTICS

Exchange	Company Name	Announcement Date
US-NASDAQ	Chanticleer Holdings	20180102
US-NASDAQ	ChinaNet Online Holdings, Inc.	20180104
US-NASDAQ	Marathon Patent Group Inc	20171102
US-NASDAQ	Net 1 UEPS technologies	20171122
US-NASDAQ	Net Element International	20171220
US-NASDAQ	NETEASE	20180107
US-NASDAQ	Nova Lifesyle Inc	20170406
US-NASDAQ	Overstock	20180108
US-NASDAQ	Pareteum Corp	20171226
US-NASDAQ	Riot Blockchain Inc	20171004
US-NASDAQ	Seko	20180111
US-NASDAQ	Seven Stars Cloud Group	20171220
US-NASDAQ	Social Reality Inc	20171017
US-NASDAQ	The9 Limited	20180116
US-NASDAQ	Xunlei Limited	20171123
US-NYSE	Digital Power Corp.	20171204
US-NYSE	Eastman Kodak	20180109
US-NYSE	Lightinthebox	20180105
US-NYSE	Renren Inc.	20180103
US-OTC	Bitcoin Service Inc.	20160321
US-OTC	Long Blockchain Corp.	20171221
US-OTC	Longfin Corp.	20171213
US-OTC	On Track Innovations LTD	20171218
China Shanghai	Cashway Fintech Co Ltd	20180110
China Shanghai	Easy Visible Supply Chain Management	20170912
China Shanghai	Shanghai U9 Game Co Ltd	20180108
China Shenzhen	JC Finance & Tax Interconnect Holdings	20180622
China Shenzhen	Jiangsu Akcome Science & Technology	20180111
China Shenzhen	Jiangsu Zhongnan Construction Group	20161108
China Shenzhen	Joyvio Agriculture Development	20180131
China Shenzhen	SGSG Science & Technology Co., Ltd.	20180112
China Shenzhen	Shenzhen Forms Syntron Information	20170228
China Shenzhen	Shunya International Brand Consulting	20180524
China Shenzhen	Xiamen Anne Corporation Limited	20180111
Hong Kong	Blockchain Group Co LTD	20171113
Hong Kong	Chong Sing Holdings FinTech Group LTD	20170126
Hong Kong	Grandshores Technology Group Limited	20180427
Hong Kong	HC Group Inc	20180127
Hong Kong	Hong Kong Exchanges and Clearing	20180320
Hong Kong	Huobi Technology Holdings LTD	20180910

Exchange	Company Name	Announcement Date
Hong Kong	Kingsoft Corp LTD	20180321
Hong Kong	Linekong Interative Group Co LTD	20180328
Hong Kong	Meitu Inc	20180122
Hong Kong	Panda Green Energey Group LTD	20180109
Hong Kong	SMIT holdings LTD	20170731
Hong Kong	Yuxing InfoTech Investment Holdings	20180209
Hong Kong	ZhongAn Online P&C insurance Co LTD	20180321

Displayed above are exchange, company name, announcement date, and whether the news involves a name change, e.g., adding terms such as "blockchain" or "bitcoin" to the company's name. For companies listed in the US, we search for news on major platforms such as Bloomberg terminal and Reuters.com. For companies listed in Mainland China and Hong Kong, we conduct additional searches on local media platforms. Announcement date is when a company first announced a blockchain-related news.

Daily returns for companies and market indexes are from various sources. For the 23 US companies in the sample, 15 are listed on NASDAQ, 4 on NYSE, and 4 on the OTC Bulletin Board. Returns for exchange-traded companies are from the Center for Research in Security Prices (CRSP). For extremely small companies that trade on OTC, we obtain their stock prices from Yahoo finance. For stocks from Mainland China, we get their daily prices from a local data-collection company. For the 13 companies listed in Hong Kong, we obtain their pricing data from Yahoo Finance. Indexes we use are: S&P 500 Index from CRSP for companies listed in the US, the CSI 300 Index from Yahoo Finance (Ticker: ASHR) for companies listed in mainland China, and the Hang Seng Index from Yahoo Finance (Ticker: HSI) for companies listed in Hong Kong, respectively.

While some announcements clearly describe the company's prior involvement in blockchain, others merely indicate the company's interest in developing and/or applying such technologies in the future. One example for the latter case is a beverage company, Long Island Ice Tea Corp. The company announced on December 21, 2017 that it was changing its name to Long Blockchain Corp. and would pivot to blockchain business. However, according to several credible news platforms, the company remains focusing on producing ice tea and other juice beverages.

Recognizing the differences in the content of the announcement, we partition the companies in our sample into 4 mutually exclusive groups, which will enable us to determine what types of companies are most affected by blockchain related news and why.

	No prior involvement in blockchain technology	Some prior involvement in blockchain technology
Announcement does not involve a name change	Group 1	Group 3
Announcement does involve a name change	Group 2	Group 4

Group 1: Companies have no prior involvement in blockchain related business and the announcements do not involve name changes.
Group 2: Companies have no prior involvement in blockchain, but announce to change their names.
Group 3: Companies have some prior involvement in blockchain, but the announcements do not involve name changes.
Group 4: Companies have some prior involvement in blockchain and announce to change their names to better reflect that.

We use event study methodology. All raw unadjusted returns are percentage changes of daily closing price from $t-1$ to t. Time stamp t is the number of trading days from the announcement date. Abnormal

return for company i on date t, denoted by $AR_{i,t}$, is the raw unadjusted return in excess of the raw unadjusted return of a market index that we describe earlier. Thus, $AR_{i,5}$ is the abnormal return for company i on the 5th trading day after the event.

For each company i, we calculate the cumulative abnormal returns (CAR) between t_1, t_2 as $CAR_i[t_1, t_2] = \sum_{t=t_1}^{t_2} AR_{i,t}$. We then average the CAR across i to make statistical inference. The methodology and formula for calculating standard errors over a variety of event windows can be found in Brown and Warner (1985) and MacKinlay (1997). Empirically, we compute the CARs in 7 symmetric windows around the announcement date:

> Pre-announcement: [-60, -30], [-29, -15], and [-14, -1]
> Announcement: [0, +1]
> Post-announcement: [+2, +14], [+15, +29], [+30, +60]

To examine the long run effect, we also compute CAR from 61 to 250 trading days. Long term: [+61, +250].

RESULTS

Is -Blockchain-Related News Associated With Abnormal Returns?

Table 2 reports the results from us implementing the standard event study methodology. It can be seen that, during the 2-day period of the announcement and the very next day, [0, 1], sample companies in the US on average earn cumulative raw returns of 81.51% with a significant t-statistics of 12.33. On the basis of cumulative market adjusted abnormal returns, the result remains essentially the same, 80.96% with a t-statistics of 12.04.

TABLE 2
CUMULATIVE RAW AND ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN THE US (FULL SAMPLE)

Event Window	Cumulative Raw Returns		Cumulative Abnormal Returns	
	Mean	**T-Stat**	**Mean**	**T-Stat**
[-60,-30]	-3.13	-2.89	-4.75	-4.4
[-29,-15]	6.9	7.05	5.06	5.35
[-14,-1]	43.68	11.51	42.79	11.3
[0,1]	81.51	12.33	80.96	12.04
[2,14]	18.73	4.53	16.88	3.46
[15,29]	8.46	3.14	8.23	3.21
[30,60]	2.37	1.01	2.67	1.17
[61,250]	-23.78	-4.64	-24.56	-4.86

Daily stock and index returns are computed from data on CRSP and Yahoo Finance. Cumulative abnormal returns in different event windows are reported in percentage (%) and associate t-statistics are reported in the next column.

In addition to the [0, 1] window, positive reaction occurs in almost all the event windows we examine except the earliest and latest 2 windows. On the basis of cumulative raw returns, positive reactions range from 43.68% for the [-14, -1] window to 2.37% for the [30, 60] window, yet negative reactions are -3.13% and -23.78% for the [-60, -30] and [61, 250] windows, respectively. In terms of cumulative market adjusted abnormal returns, i.e., CARs, positive reactions range from 42.79% for window [-14, -1] to 2.67% for window [30, 60]; at the same time, negative reactions are -4.75% for window [-60, -30] and -24.56% for window [61, 250].

What Kind of Firms Experience Large Reactions?

Given the overall significance of the announcement event, it would be interesting to know whether the announcement effect is homogenous across firms and, if not, what kind of firms experience a bigger impact than others. To that end, we partition the firms into 4 mutually exclusive groups based on whether they change company names and/or have prior business in blockchain. Then we further investigate (1) whether name change itself makes a difference, irrespective of a firm's involvement in blockchain related business; (2) whether a firm's change in blockchain related business makes a difference, regardless if it changes its name.

Table 3 presents the results for various groups. As can be seen, for the 2-day window [0,1], the 4 different groups demonstrate a wide dispersion of reactions: group 4, with prior blockchain business and name change, demonstrates the largest positive reaction of cumulative raw return of 286.63%. Group 1, with no prior blockchain business and no name change, comes second with 106.97% of return. Then group 2, with name change and no prior blockchain business, follows with 80.26% return. Finally, group 3 shows 47.66% return for firms with some prior blockchain business and no name change.

Interesting results also emerge when we examine the impact of name change, irrespective of whether firms have prior business in Blockchain, i.e., Group 1 + Group 3 v. Group 2 + Group 4. In Table 3, column 5 and 6 show that, without name change, companies with or without prior blockchain business, i.e., Group 1 and Group 3, demonstrate an average of 71.39% return in the [0, 1] window. In contrast, companies announcing name change with or without prior blockchain business, i.e., Group 2 and Group 4, show 149.05% return, more than double their counterparts that do not announce name change. So, changing names alone does make a significant difference in market perceptions of the companies' prospects.

In the other dimension, significant results also show when we investigate if increasing blockchain related business makes a difference, regardless if companies change names, i.e., Group 1 + Group 2 v. Group 3 + Group 4. The rightmost 2 columns of Table 3 have the results. Regardless of whether companies change names, those without prior blockchain business, i.e., Group 1 and Group 2, exhibit a return of 101.63% in the [0, 1] window. In the meantime, companies that have prior blockchain business, i.e., Group 3 and Group 4, return 66.05%. Both returns are statistically significant. Thus, companies increasing blockchain related business during the sample period indeed experience a valuation increase upon announcement.

The positive results for window [0, 1] mostly persist in other windows we examine, but there are negative results as well, which motivate us to examine the long run performance to ascertain the overall impact. When we further adjust the returns by contemporaneous market performance, CARs show a pattern similar to those from raw returns.

TABLE 3
CUMULATIVE RAW AND ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN THE US (BY GROUPS)

Event Window	Group 1 No Prior Blok No Name Chg	Group 2 No Prior Blok Name Chg	Group 3 Some Prior Blok No Name Chg	Group 4 Some Prior Blok Name Chg	Group 1+3 No Name Chg	Group 2+4 Name Chg	Group 1+2 No Prior Blok	Group 3+4 Some Prior Blok
				Cumulative Raw Returns				
[-60,-30]	3.76*	-0.43	-8.92***	9.7	-3.58***	-0.29	2.92	-8.17***
[-29,-15]	6.27**	3.72	3.42**	56.67	4.62***	21.37**	5.76***	7.85***
[-14,-1]	16.21***	43.01*	58.67***	100	40.79***	62.01***	21.57***	62.11***
[0,1]	106.97***	80.26	47.66***	286.63	71.39***	149.05***	101.63***	66.05***
[2,14]	-13.1	2.92	43.18***	11.67	20.67***	5.84*	-9.90***	40.75***
[15,29]	5.77	-30.60**	11.16*	78.51	8.89***	5.77	-1.50	16.77***
[30,60]	-13.67	102.61	-6.91**	32.58	-9.76***	79.27***	9.58	-3.62
[61,250]	12.27	-167.64**	-44.88	207.53	-20.81**	-42.58**	-23.71***	-23.84***
				Cumulative Abnormal Returns				
[-60,-30]	1.54	-2.88	-10.98***	9.7	-5.71***	1.31	0.66	-9.26***
[-29,-15]	4.49	1.77	1.98	50.02	3.04***	17.85*	3.95*	5.98***
[-14,-1]	13.67***	41.69*	58.61***	103.9	39.69***	62.43***	19.28***	62.38***
[0,1]	106.43***	79.84	47.11***	285.58	70.84***	148.42***	101.12***	65.45***
[2,14]	-14.7	0.7	40.87***	14.05	18.64***	5.15	-11.62***	38.81***
[15,29]	6.2	-28.33**	10.3	74.79	8.58***	6.04	-0.70	15.68***
[30,60]	-11.67	99.51	-5.63	15.11	-8.18***	71.38***	10.56	-3.90
[61,250]	16.23	-171.69**	-43.67***	153.49	-18.44***	-63.29***	-21.34***	-27.24***

Sample companies listed in the US are partitioned into 4 mutually exclusive groups. Group 1: Companies have no prior involvement in the blockchain technology and the announcement does not involve a name change. Group 2: Companies have no prior involvement in the blockchain technology but announce to change their names. Group 3: Companies have some prior involvement in the blockchain technology and the announcement does not involve a name change. Group 4: Companies have some prior involvement in the blockchain technology and announce to change their names to better reflect that. Daily stock and index returns are from CRSP and Yahoo Finance. Cumulative raw and abnormal returns in different event windows are reported in percentage (%). Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively.

The Phenomenon in Mainland China and Hong Kong

Having discovered the huge magnitude and significance of the effect in the most developed financial market, the US, we would like to further examine its counterpart in Mainland China and Hong Kong. The market in Mainland China is one of the fastest growing markets in the world and the one in Hong Kong has been one of the financial centers in Asia and the world.

The results of our analysis are in Table 4. For all the companies together, the unadjusted raw returns are 9.61% with a t-statistics of 10.24. The magnitude is much smaller than that in the US. This is quite interesting because Chinese financial markets are well known to be populated with many not very sophisticated participants and they tend to trade based on folklore or hearsay. At the same time, the trade-off could be that information such as announcements do not immediately reach such participants. The overall effect is economically and statistically meaningful, just not as comparable as those in the US. The pattern in the US of smaller effect in other windows we examine largely exists in Mainland China and Hong Kong, with more occurrence of negative returns.

TABLE 4
CUMULATIVE RAW AND ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN MAINLAND CHINA AND HONG KONG (FULL SAMPLE)

	Cumulative Raw Returns		Cumulative Abnormal Returns	
Event Window	**Mean**	**T-Stat**	**Mean**	**T-Stat**
[-60,-30]	1.71	1.92	-2.38	-2.55
[-29,-15]	-1.68	-3.45	-1.22	-2.35
[-14,-1]	2.76	6.07	0.31	0.74
[0,1]	9.61	10.24	9.37	10.07
[2,14]	-3.31	-6.12	-4.49	-7.02
[15,29]	-2.21	-5.66	-0.6	-1.72
[30,60]	3.44	3.58	3.95	4.23
[61,250]	-20.96	-17.04	-17.16	-13.84

For sample companies listed in Mainland China, we obtain their daily pricing data from a local data-collection company. For stocks traded in Hong Kong, the daily pricing data is from Yahoo Finance. Cumulative abnormal returns in different event windows are reported in percentage (%) and associate t-statistics are reported in the next column.

Table 5 further demonstrates the results by groups. For the [0, 1] window, irrespective of whether the companies change names or have prior blockchain-related business, every group of companies show uniformly positive returns, ranging from 3.56% for no name change and no prior blockchain business firms, to 52.19% for name change and with prior blockchain business corporations.

We also investigate if name change matters, unconditional on if firms have prior business in Blockchain, i.e., Group 1 + Group 3 v. Group 2 + Group 4. The results show that, despite varying degrees of prior blockchain business, companies without name change demonstrate an average of 7.36% return in the [0, 1] window. In the meantime, companies announcing name change, i.e., Group 2 and Group 4, show 34.37% return, almost 4 times that of their counterparts that do not announce name change. So, similar to the results in the US, changing names indeed remarkably influences market perceptions of the companies' potential growth.

The 2 rightmost columns of Table 5 show our discovery from examining if changing the proportion of blockchain related business makes a material difference. Group 1 + Group 2, i.e., companies without prior blockchain business, return an average 5.01% in the [0, 1] window. Group 3 + Group 4, i.e., companies that have prior blockchain business, return 12.38%. Both returns are economically and statistically meaningful for a 2-day window. Such positivity in window [0, 1] also appear in other windows we examine; admittedly,

negative returns also show. Adjusting the returns by contemporaneous market returns, CAR, produces similar results.

TABLE 5
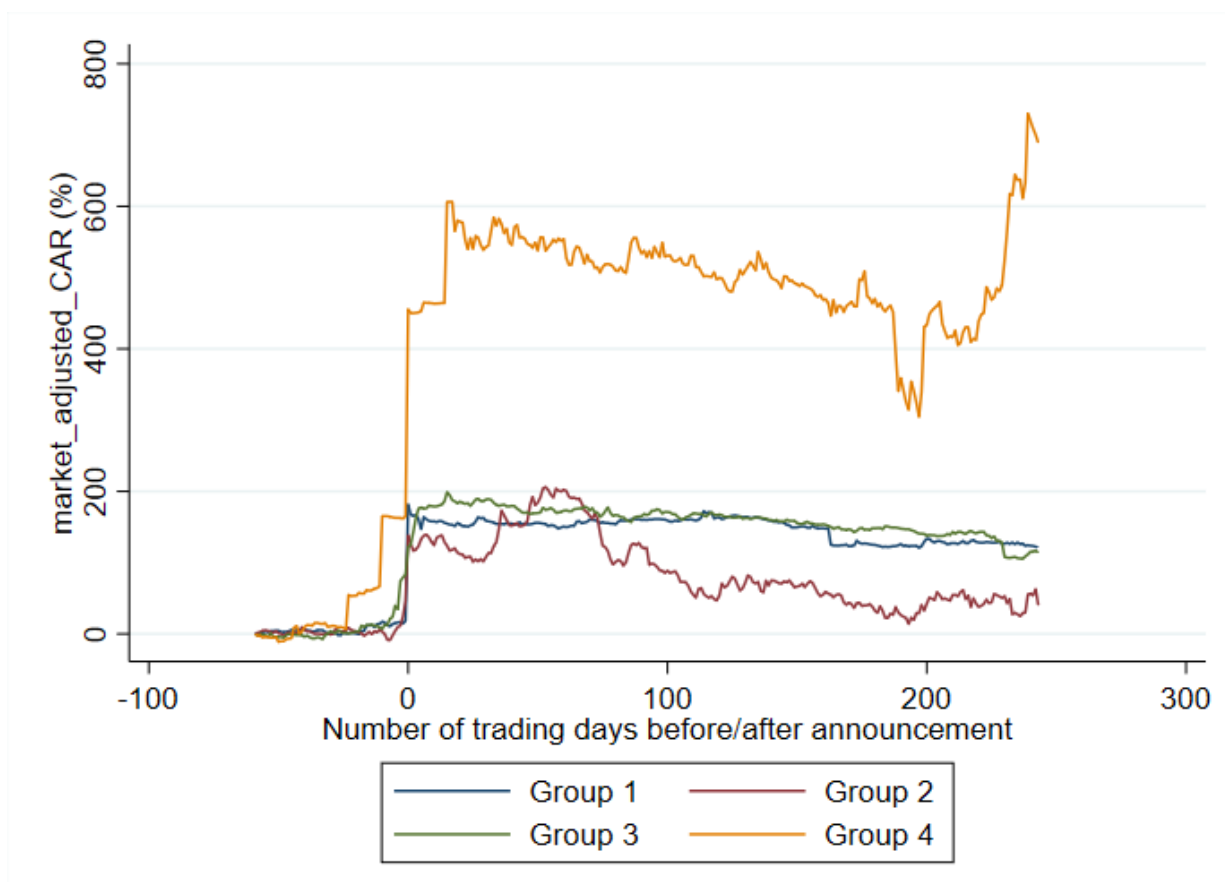**CUMULATIVE RAW AND ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN CHINA AND HONGKONG (BY GROUPS)**

	Group 1	Group 2	Group 3	Group 4	Group 1+3	Group 2+4	Group 1+2	Group 3+4
	No Prior Blok No Name Chg	No Prior Blok Name Chg	Some Prior Blok No Name Chg	Some Prior Blok Name Chg	No Name Chg	Name Chg	No Prior Blok	Some Prior Blok
Event Window				**Cumulative Raw Returns**				
[-60,-30]	-13.80***	-16.02	12.20***	-3.46	2.75***	-9.74**	-14.05***	11.16***
[-29,-15]	-5.17***	10.68	-2.28***	22.43	-3.33***	16.55***	-3.41**	-0.64
[-14,-1]	1.15*	3.26	3.92***	-0.96	2.91***	1.15	1.38***	3.59***
[0,1]	3.56**	16.55	9.54***	52.19	7.36***	34.37***	5.01***	12.38***
[2,14]	-8.34***	11.08	-0.67	-14.70	-3.46***	-1.81	-6.18***	-1.60*
[15,29]	-1.69	-10.42	-2.46***	5.40	-2.18***	-2.51	-2.66***	-1.93***
[30,60]	1.01	-6.75	6.15***	-4.73	4.28***	-5.74***	0.14	5.42***
[61,250]	-27.69***	-70.26	-14.75***	-4.84	-19.46***	-37.55	-32.42***	-14.09***
				Cumulative Abnormal Returns				
[-60,-30]	-17.41***	-28.13	7.62***	3.78	-1.48	-12.17	-18.60***	7.36***
[-29,-15]	-5.64***	15.44	-1.42***	20.25	-2.96***	17.85***	-3.30	0.02
[-14,-1]	-3.75***	2.27	2.53***	-0.36	0.25	0.95	-3.08***	2.34***
[0,1]	3.00**	16.64	9.31***	54.06	7.01***	35.35***	4.51***	12.29***
[2,14]	-7.42***	13.48	-3.42***	-13.96	-4.88***	-0.24	-5.10***	-4.12***
[15,29]	1.66	-10.48	-2.15***	12.90	-0.76**	1.21	0.31	-1.15**
[30,60]	2.13	-5.55	6.58***	-8.75	4.96***	-7.15***	1.28	5.56***
[61,250]	-22.39***	-56.18	-11.81***	-11.18	-15.66***	-33.68**	-26.15***	-11.77***

Sample companies from Mainland China and Hong Kong are partitioned into 4 mutually-exclusive groups. Group 1: Companies have no prior involvement in the blockchain technology and the announcement does not involve a name change. Group 2: Companies have no prior involvement in the blockchain technology but announce to change their names. Group 3: Companies have some prior involvement in the blockchain technology and the announcement does not involve a name change. Group 4: Companies have some prior involvement in the blockchain technology and announce to change their names to better reflect that. For sample companies listed in Mainland China, we obtain their daily pricing data from a local data-collection company. For stocks traded in Hong Kong, the daily pricing data is from Yahoo Finance. Cumulative abnormal returns in different event windows are reported in percentage (%) and associate t-statistics are reported in the next column. Cumulative raw and abnormal returns (CAR) in different event windows are reported in percentage (%) . Significance at 1%, 5%, and 10% levels are indicated by ***, **, and *, respectively and associate t-statistics are reported in the next column.
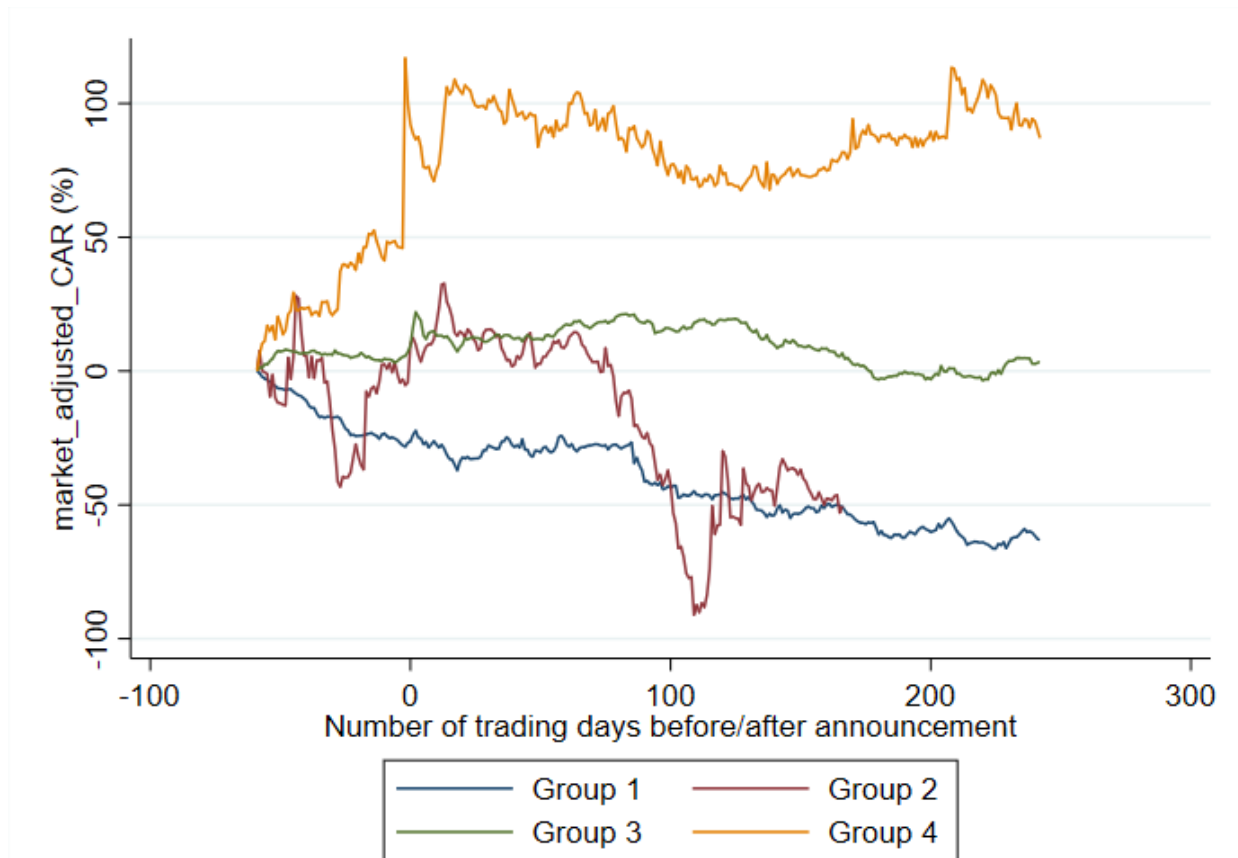
Overall Performance in the Long Run

For the countries in the sample, across various event windows, returns fluctuate between negative and positive, making it interesting to assess whether the overall impact is positive or negative. Figure 1 shows the results for the US. As can be seen, all the 4 groups experienced significant spikes upon announcements, as aforementioned. Further, up to a year later, all the groups remain above pre-announcement level, some tremendously above announcement levels. Figure 2 depicts the effect for Mainland China and Hong Kong. The results are more diverging. Half of the groups drop below their pre-announcement levels. However, there are groups remaining at or above previous levels. Collectively, although the evidence varies by groups, they are consistent in that the dramatic swings are evidence refuting market efficiency.

FIGURE 1
CUMULATIVE ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN THE US

Sample companies listed in the US are partitioned into 4 mutually exclusive groups. Group 1: Companies have no prior involvement in the blockchain technology and the announcement does not involve a name change. Group 2: Companies have no prior involvement in the blockchain technology but announce to change their names. Group 3: Companies have some prior involvement in the blockchain technology and the announcement does not involve a name change. Group 4: Companies have some prior involvement in the blockchain technology and announce to change their names to better reflect that. Daily stock and index returns are from CRSP ad Yahoo Finance. Cumulative abnormal returns around announcement date are graphed above.

FIGURE 2
CUMULATIVE ABNORMAL RETURNS FOR SAMPLE COMPANIES LISTED IN MAINLAND CHINA AND HONG KONG

Sample companies from Mainland China and Hong Kong are partitioned into 4 mutually-exclusive groups. Group 1: Companies have no prior involvement in the blockchain technology and the announcement does not involve a name change. Group 2: Companies have no prior involvement in the blockchain technology but announce to change their names. Group 3: Companies have some prior involvement in the blockchain technology and the announcement does not involve a name change. Group 4: Companies have some prior involvement in the blockchain technology and announce to change their names to better reflect that. For sample companies listed in Mainland China, we obtain their daily pricing data from a local data-collection company. For stocks traded in Hong Kong, the daily pricing data is from Yahoo Finance. Cumulative abnormal returns in different event windows are reported in percentage (%) and associate t-statistics are reported in the next column. Market-adjusted cumulative abnormal returns around announcement date are graphed above.

SUMMARY

Our research makes two contributions to the literature and has important implications for both academics and policy makers. First, prior scholars examine name changes for corporations or mutual funds; we investigate a specific kind of corporate name change: including "blockchain" or "bitcoin" into companies' names. Second, we add evidence to the literature on investor behavior and its impact on financial markets, in both short- and long-term.

REFERENCES

Bae, K., & Wang, W. (2012). What's in a "China" name? A test of investor attention hypotheses. *Financial Management*, *41*, 429–455.

Bosch, J., & Hirschey, M. (1989). The valuation effects of corporate name changes. *Financial Management*, *18*, 64–73.

Brown, S.J., & Warner, J.B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, *14*, 3–31.

CNBC. (2018). *CNBC investigates public company that changed its name to Riot Blockchain and saw its shares rocket*. Retrieved from https://www.cnbc.com/2018/02/16/public-company-changes-name-to-riot-blockchain-sees-shares-rocket.html

Cooper, M.J., Dimitrov, O., & Rau, P.R. (2001). A rose.com by any other name. *Journal of Finance*, *56*, 2371–2387.

Cooper, M.J., Gulen, H., & Rau, P.R. (2005). Changing names with style: Mutual fund name changes and their effects on fund flows. *Journal of Finance*, *60*, 2825–2858.

Cooper, M.J., Khorana, A., Osobov, I., Patel, A., & Rau, P.R. (2005). Managerial actions in response to a downturn: Valuation effects of names changes in the dot.com decline. *Journal of Corporate Finance*, *11*, 319–335.

Espenlaub, S., Haq, I., & Khurshed, A. (2017). It's all in the name: Mutual fund name changes after SEC Rule 35d-1. *Journal of Banking and Finance*, *84*, 123–134.

Karpoff, J.M., & Rankine, G. (1994). In search of a signaling effect: The wealth effects of corporate name changes. *Journal of Banking and Finance*, *18*, 1027–1045.

MacKinlay, A.C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, *35*, 13–39.