# GEOPOLITICAL RISKS AND ASSET PRICES: WEALTH EFFECTS OF DELISTING REGULATION ON CHINESE COMPANIES LISTED ON THE U.S. EXCHANGES

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#### Abstract

This study investigates the shareholder wealth effect of the passage of de-listing regulation on Chinese companies listed on the U.S. stock exchanges. Using a standard event study methodology similar to Dodd and Warner (1983) and Travlos (1987), we study three events leading up to the passage and the signing of the Holding Foreign Companies Accountable Act (HFCAA). The HFCAA mandates companies to provide assurance that they are not owned or controlled by a foreign government. In addition, the law requires that these companies provide access to the U.S. Public Company Accounting Oversight Board (PCAOB) to examine their financial audits. The results of our study show a significant negative wealth effect around three test events for a sample of Chinese companies listed on U.S. stock exchanges. These findings suggest that geopolitical tensions significantly affect firm value, thus affirming the notion that bilateral or multilateral tensions, once translated in to policy changes, do trickle down to the individual firm level, thereby providing direct evidence of the link between geopolitical uncertainty (risk) and asset prices. These results contribute to and extend the growing body of literature (Egger & Zhu, 2020) on geopolitical tensions and stock returns. Our findings have implications for those nations' economies that are, directly or indirectly, a party to similar geopolitical alignments or rivalries.

**Keywords:** Geopolitical Risk, Asset Prices, Economics of Regulation, Financial Markets, Chinese Companies, Delisting, Regulation, U.S. Foreign Policy, Event Study

**Authors' individual contribution:** Conceptualization — W.G. and A.M.; Methodology — W.G. and A.M.; Software — W.G. and A.M.; Validation — W.G. and A.M.; Formal Analysis — W.G. and A.M.; Investigation — W.G. and A.M.; Writing — Original Draft — W.G. and A.M.; Writing — Review & Editing — W.G. and A.M.; Supervision — W.G. and A.M.

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#### **1. INTRODUCTION**

Researchers have developed theoretical models that predict the relationship between geo-political

uncertainty and asset prices (Croce, Kung, Nguyen, & Schmid, 2012; Kelly, Pástor, & Veronesi, 2016; Pástor & Veronesi, 2012, 2013, 2020). In recent years, the heightened tensions between the United States

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and China have managed to dominate the global landscape of defense, politics, culture, and business. This includes, among other stressful events, a simmering balance of military power rivalry, a continuing struggle to carve out spheres of political influence across Asia, Africa, Middle East and South America, and a persistent resolve of China to emerge as a leader in cutting-edge technology within the next three decades. Undoubtedly, this overt tussle between the two largest economies has asset pricing implications not only for the U.S. financial markets and China's financial markets but also for the broader economies of other nations that are directly or indirectly involved in this political and economic power game.

It is of note that these festering hostilities are leading to an ongoing trade war between the U.S. and China (e.g., higher tariffs on some Chinese goods, blacklisting of some Chinese companies, retaliatory measures by China). One recent development motivated by this simmering tension is the signing in to law by President Donald Trump the Holding Foreign Companies Accountable Act (HFCAA) — on December 18, 2020, that earlier passed unanimously by both the House and Senate (Public Law No. 116-222). This law would clear the way to delist all foreign companies (in our case. the Chinese companies) from the U.S. exchanges if the American regulators are not permitted to investigate the financial audits of these companies, thereby, failing to comply with US investor protection laws. The Act states that "...if the board [the U.S. Public Company Accounting Oversight Board] is unable to inspect the issuer's public accounting firm for three consecutive years, the issuer's securities are banned from trade on a national exchange or through other methods". Another key part of the HFCAA mandates companies to provide assurance that they are not owned or controlled by a foreign government. This section clearly points to a nation, that the legislatures had in mind, when drafting the Bill – the Chinese state (Olmem, Thomas, Elder, & Brown, 2021).

The theories that examine the relationship between political uncertainty and asset prices posit that political uncertainty can adversely impact asset prices due to an increase in the discount rate assessed for future cash flows since the political risk is non-diversifiable and investors will demand a risk premium (Croce et al., 2012; Pástor & Veronesi, 2012, 2013). In view of this, we feel that the events leading up to the recent passage of the HFCAA provide us a unique opportunity to test the general predictions of such theories by analyzing the likely economic effect of the Act passage, the associated ongoing U.S.-China tensions, and how the effects of these tensions can be traced back to the firmspecific levels (i.e., firm valuation). We expect that investors demand a higher risk premium because the expectation for adverse political and economic outcomes is much higher due to the ongoing the U.S. and China rivalry. This implies a speed up of the decoupling of the two largest economies.

The purpose of this study is to examine the effect of delisting regulations on the wealth of shareholders of Chinese companies listed on the U.S. exchanges in response to the initiation of the U.S. regulatory actions and their recent passage in to law. More specifically, our paper investigates the stock price reaction around three key events related to the ultimate passage of the HFCAA. Building upon the extant literature, we develop hypotheses regarding the potential impact of this regulation on the stock prices of Chinese firms listed on the U.S. stock exchanges. Using daily stock prices, we employ an event-study methodology similar to that of Dodd and Warner (1983) and Travlos (1987) to investigate the cross-country relationship between geopolitical risks and asset prices. Our study results are consistent with our hypotheses and show that all three test events (introduction of the bill in the U.S. Senate, its passage, and then its subsequent passage by the House of Representatives) negatively impact share prices of the Chinese listed firms on all the U.S. exchanges. This in turn adversely affects the wealth of shareholders of these firms.

Our paper contributes to the literature in at least four main ways. First, the empirical results provide support to existing theoretical models which postulate that geopolitical tensions have adverse valuation consequences for asset prices. Second, our paper points to the importance of overtly recognizing the strong link between geopolitical uncertainty and asset prices and how this link can be traced back to firms that are directly impacted by the resultant policy changes and regulations. Third, the results of our study provide empirical evidence that has a value not only for financial intermediaries but also for political scientists who would like to measure the relationship between geo-political tensions and economics (Chan & Bobrow, 1981). Finally, and more importantly, our findings can inform potential changes in policies and regulations that are being contemplated by the U.S. and by China for the Chinese businesses operating in the U.S. and in the regions allied with the U.S. In addition, our paper contributes to potentially generating more research interest in the seldom studied phenomenon of "cross-country relationship" between geopolitical uncertainty in one country and asset prices of the firms of another country.

The rest of the paper is organized as follows. The next Section 2 provides the background and hypotheses. Section 3 describes data and research methodology. Section 4 reports empirical results and Section 5 provides discussion and concluding remarks.

#### 2. THEORETICAL BACKGROUND AND HYPOTHESES

#### 2.1. Literature review

In March 2018, the influential global index provider MSCI announced that it would quadruple its weighting of Chinese company shares in one of its products. kev index In December 2018, the Securities and Exchange Commission (SEC) and the Public Company Accounting Oversight Board (PCAOB) jointly warned investors about the reliability of disclosures of the U.S.-listed companies. Chinese The reasons are that the regulators face serious problems when they make an effort to conduct a financial review of the U.S.-listed Chinese companies whose operations are located in China and Hong Kong.



The U.S.-listed companies' audits are routinely inspected by the PCAOB (the auditor of auditors), and overseen by the SEC, whether these companies operate locally or abroad. PCAOB sets auditing standards, conducts inspections of the audits performed by audit firms, and then assesses penalties for audit deficiencies. China, terming it as matters of its national security and state secrecy, has long been creating hurdles for PCAOB to inspect the integrity of the audits of Chinese U.S.-listed companies whether these audits are performed by Big Four accounting firms' local partners or auditing firms based in China. The U.S.-China Economic and Security Review Commission reported a list composed of 156 Chinese companies traded on the largest U.S. exchanges; of which, 11 have significant ownership of Chinese state. The Commission determined the combined market capitalization of these firms be equal to \$1.2 trillion. Since the majority of these Chinese U.S.-listed entities are in internet business, their audit documents "can contain raw data such as meeting logs, user email exchanges information and between companies and government agencies, among other things" (U.S.-China Economic and Security Review Commission, 2019) the sharing of which with a foreign government could compromise state security.

A major event that triggered the U.S. legislatures' resolve to strengthen PCAOB's monitoring role was when on April 2, 2020, Luckin Coffee, Inc., a Chinese upstart and an emerging competitor of Starbucks Inc., (after it achieved a \$12 billion valuation within eight months of its public listing on NASDAQ), disclosed that it has indulged in material accounting shenanigans. Consequently, its swift valuation meltdown, after the disclosure of the financial improprieties, led to massive losses both for institutional and individual investors in the U.S., Europe, and Asia (Yang, 2020).

There are a handful of studies that model the theoretical relationship between government policy uncertainty and asset prices (Pástor & Veronesi, 2012, 2013). Pástor and Veronesi (2012) identify two forms of uncertainties in their equilibrium models: 1) *political uncertainty* – due to any expected change in government policy, and 2) *impact uncertainty* — the potential impact the policy change could have on the future cash flows of the private sector. Their models show that uncertainty surrounding policy change will increase risk (discount rate) assessment regarding the future cash flows of firms, in turn, negatively affecting stock returns. Pástor and Veronesi (2013), in their theoretical model, identify three forms of shocks that strongly influence stock prices - capital shocks, impact shocks, and political shocks. The capital and impact shocks directly impact not only the overall capital but also drive investors revising their of towards assessment the government's ongoing policy. The authors term the combination of capital shock and impact shock as an economic shock. The third, political shock, is linked to the political cost of policy alteration that leads to a revision of investors' assessments and preferences. Their model goes on to link the three shocks to equity risk premiums that the investors demand and the way these shocks affect stock prices. The authors then empirically test their model's theoretical predictions as follows: "political uncertainty should be higher in a weaker economy; stocks should be more volatile and more correlated when political uncertainty is higher; political uncertainty should command a risk premium; the effects on volatility, correlation, and risk premia should be stronger when the economy is weaker" (Pástor & Veronesi, 2013). They find evidence that affirms their predictions.

Some prior empirical studies that test the association between political uncertainty and risk premium include research equity on the relationship between stock prices and international country risk (Erb, Harvey, & Viskanta, 1996), the positive association between elections and stock prices (Li & Born, 2006), and the positive link between equity risk premium and political uncertainty in an international context (Brogaard, Dai, Ngo, & Zhang, 2020; Brogaard & Detzel, 2015). More recently, Brogaard et al. (2020) investigate the impact of global political uncertainty on global asset markets. Using the U.S. election cycle to measure global political uncertainty, the authors show that global political uncertainty leads to a fall in equity returns in fifty non-U.S. equity markets, thereby triggering a rise in market volatilities, depreciation of the local currencies, and an increase in sovereign bond returns. In a related empirical study, Cao, Li, and Liu (2019) examine the effect that political uncertainties may have on cross-border acquisitions between any two countries. The authors use data spanning national elections in forty-seven countries between 2001 and 2013. The authors find that political uncertainty affects the volume and outcome of cross-border acquisitions. The volume of acquisitions declines due to foreign firms' refrain from in-bound acquisitions targeting a country that is about to hold a national election.

Egger and Zhu (2020) examined the wealth effects of the U.S.-China Trade War started by the Trump administration and found adverse wealth impacts not only on shareholders of the U.S. and Chinese firms but also on shareholders of firms of countries that are not directly involved in that conflict. Amiti, Redding, and Weinstein (2019), Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020), Flaaen, Hortacsu, and Tintelnot (2020), and Cavallo, Gopinath, Neiman, and Tang (2021) also investigated the trade war and found varying effects on the supply, demand, and prices of products and services in the economies of the countries involved. On similar lines, Chen, Hope, Li, and Wang (2018) study the link between political uncertainty (as measured by a country's national election cycle) and flight-to-quality, as measured by fund managers shifting their portfolios toward stocks with higher financial reporting quality (FRQ) in an international context (by using internal mutual funds' holdings). They found that international mutual fund managers shift their equity holdings to stocks with higher FRQ during elections when political uncertainty is higher. Such a flight-to-quality effect is more pronounced for elections with tight expected electoral margins (more uncertainty about the election's outcome) and less pronounced for elections with larger expected electoral margins (less uncertainty about the election's outcome).

In summary, there are only a few studies that model the theoretical relationship between government policy uncertainty and asset prices. Researchers have identified two forms of policy uncertainties - viz., political uncertainty and impact uncertainty. These uncertainties recalibrate the assets' risk premiums thereby impacting the prices of the assets located within the host country or located in any other country or countries that the host country has political and economic relationships with - whether cordial or hostile. Our study is an effort to test the "impact uncertainty" component of the model, which, to our knowledge, has been empirically tested by only a few studies (Brogaard et al., 2020; Brogaard & Detzel, 2015). Also, ours is the first study - to the best of our knowledge - to investigate what we would like to relationship the cross-country call between geopolitical uncertainty and asset prices — whereby one country's economic policy uncertainty can impact another country's asset prices. Our paper will be one of the first to address this important but overlooked gap in the literature.

#### 2.2. Test events

Table 1 contains dates and events leading up to the passage of the Bill that may lead to the delisting of Chinese companies from the U.S. exchanges. This Bill was later signed in to law by President Trump on December 18, 2020.

 Table 1. Event horizon

Event date	Event							
June 5, 2019, (Day 0)	Introduction of the Ensuring Quality Information and Transparency for Abroad- Based Listings on our Exchanges (EQUITABLE) Act in the Senate							
May 20, 2020, (Day 0)	The Senate passage of the Holding Foreign Companies Accountable Act							
December 2, 2020, (Day 0)	The House of Representatives passage of the Holding Foreign Companies Accountable Act							

## 2.2.1. Event 1: Introduction of the EQUITABLE Act in the U.S. Senate (June 5, 2019)

On June 5, 2019, Senators — Marco Rubio (Republican, Florida), Bob Menendez (Democrat, New Jersey), Tom Cotton (Republican, Arizona) and Kirsten Gillibrand (Democrat, New York) introduced the Ensuring Quality Information and Transparency for Abroad-Based Listings on our Exchanges (EQUITABLE) Act in the U.S. Senate (Office of Senator John Kennedy, 2020).

This legislation would require the government of China to provide the U.S. regulators, such as the SEC and the PCAOB, full access to examine the complete audit reports of publicly traded companies that are based in mainland China and in Hong Kong and that are traded on the U.S. stock exchanges. Currently, the Chinese government refuses to provide access to these companies' audited books. The purpose of this legislation is to send a credible signal to China to change its unacceptable stance. Investors will greatly benefit from the EQUITABLE Act in that its implementation will make investors more informed about their vulnerability to financial risks. In case of non-compliance, Act would delist issuers of securities, and ban those Chinese and other foreign firms to raise capital from the U.S. markets, that do not adhere to regulatory requirements applicable for all listed U.S. companies. Consequently, investors would expect significant economic costs accruing for the Chinese listed companies after the passage of the Act by the Senate. This in turn will adversely impact the value of these firms around this event. Hence, we hypothesize that:

H1: The introduction of the EQUITABLE Act in the Senate will have a significant negative effect on the prices of Chinese companies listed on the U.S. exchanges.

#### 2.2.2. Event 2: The Senate passage of the Holding Foreign Companies Accountable Act (May 20, 2020)

The Bill, titled Holding Foreign Companies Accountable Act, introduced by Senator John Kennedy, a Republican from Louisiana, and Chris Hollen, a Democrat from Van Maryland, unanimously passes the Senate. The purpose of this bill is to safeguard American investors' wealth "from foreign companies that have been operating on U.S. stock exchanges while flouting Securities and Exchange Commission (SEC) oversight" (Office of Senator John Kennedy, 2020). Another key provision of the bill stipulates that if the PCAOB is prevented from auditing the company for three consecutive years in order to assess if the company is controlled by a foreign government, then the company's securities would be prohibited from listing on any of the U.S. stock exchanges. We expect that the passage of the HFCAA sends a strong signal to the market about the sentiments that prevail in the halls of the Congress against Chinese efforts to raise capital in the U.S. markets by dogging compliance with existing listing requirements. Given such sentiments, investors expect that this Act would surely sail through the House, in turn, adversely impacting the share prices of Chinese U.S.-listed firms, thereby leading to the formulation of our second hypothesis:

*H2: The passage of the Holding Foreign Companies Accountable Act in the Senate will have a significant negative effect on the price of Chinese companies listed on the U.S. exchanges.* 

#### 2.2.3. Event 3: The House of Representatives passage of the Holding Foreign Companies Accountable Act (December 2, 2020)

On December 2, 2020, the House of Representatives passed a bill, titled the Holding Foreign Companies Accountable Act that could prevent Chinese companies from trading their shares on the U.S. exchanges, thereby barring them access to capital of the U.S. investors. President Donald Trump, on December 18, 2020, signed in to law the HFCAA passed earlier unanimously by both the House and Senate. This Act would clear the way to delist Chinese companies from the U.S. exchanges if the American regulators are not permitted to examine the financial audits of these companies (Michaels, 2020).

This bill's purpose is to make sure that the PCAOB is allowed to monitor the auditing of foreign companies' books if those companies intend to seek access to the U.S. equity and debt capital markets. It is noteworthy that all companies that are publicly traded on the U.S. exchanges comply with PCAOB's overseeing function except the Chinese companies. The HFCAA also mandates companies to provide assurance that they are not owned or controlled by a foreign government. In addition, these foreign domiciled companies should provide access to the U.S. PCAOB to examine their financial audits. In light of the above, the following directional hypothesis is formulated:

H3: The passage of the Holding Foreign Companies Accountable Act in the House of Representatives will have a significant negative effect on the price of Chinese companies listed on the U.S. exchanges.

#### **3. RESEARCH METHODOLOGY**

Our initial sample is based on a list of all the companies domiciled in China and listed on any of the top three U.S. stock exchanges (NASDAQ, New York Stock Exchange, and NYSE American), as compiled by the U.S.-China Economic and Security Review Commission dated February 25, 2019 (U.S.-China Economic and Security Review Commission, 2019). From this initial list of 156 firms, we dropped firms for which financial data were not available. This resulted in our final sample of 129 firms. Of these 129 firms, 9 firms have reported significant ownership (30 percent or more) by the Chinese Government.

Researchers, notably Ball and Brown (1968), Beaver (1968), and Fama, Fisher, Jensen, and Roll (1969)laid the foundation of event-study methodology currently a widely accepted technique in the field of finance to measure the value-relevance of a capital market' test event. There are generally four main models that prior researchers have used to estimate the true (theoretical) stock return under the assumption that the test event had not occurred (Delattre, 2007). According to the seminal work of Fama (1970), the event study methodology assumes that financial markets absorb new information with relative speed and hence reflect a semi-strong form of market efficiency. This methodology further postulates that firms' share prices are 'unbiased indicators of firm value'. This framework tests a selected event that may or may not contain security price moving information. If investors interpret the test event as a value-relevant event then, for the sample firms we expect to observe a statistically significant security price reaction. This methodology has since been used across many different academic fields, for example, economics (Binder, 1998), management (Byrd, Martin, & Rath, 2010; Lambertides, 2009); marketing (Ghani & Childs, 1999; Sorescu, Warren, & Ertekin, 2017); finance (Bash, Alsaifi, & Al-Awadhi, 2021; Capelle-Blancard & Laguna, 2010; Chen & Siems, 2004; Tee & Tessema, 2019; Wang & Chen, 2017).

The four abnormal return (AR) estimation models employed in prior research are the *meanadjusted model* (Cable & Holland, 1999), the *marketadjusted model* (Cooper, Dimitrov, & Rau, 2001), the *control portfolio model* (Bhushan, 1994), the *market model* (Agrawal & Kamakura, 1995). Evidence of these models' limitations documented in prior research include: the mean adjusted model does not adjust for market-wide factors and is less robust (Chandra, Moriarity, & Willinger, 1990; Klein & Rosenfeld, 1987), whereas the market-adjusted model suffers from the drawback that its abnormal returns are susceptible to being biased in the direction of the stock's beta (Binder, 1998). In case of the control portfolio model, it is difficult to isolate factors that may have also impacted the control sample firms (Lubatkin & Shrieves, 1986). Finally, the market model is found to be susceptible to event-date clustering. This in turn makes the abnormal return estimator biased (Binder, 1998). While each of the above models has its own pros and cons (Corrado, 2011; Delattre, 2007), we have chosen to use the market model - one of the most widely used models in finance research as our research method since the model is shown to be robust and to incorporate both idiosyncratic and systematic risks (Brown & Weinstein, 1985; Chandra et al., 1990).

Since we use daily stock prices, we employ an event-study methodology similar to that of Dodd and Warner (1983) and Travlos (1987). We retrieved end-of-day stock prices for our sample companies using Yahoo! Finance. We use this source since it provides the data updated up to the previous trading day as opposed to data the Center for Research in Security Prices (CRSP) provides, which are updated only annually. This enables us to run our event studies up to any date needed, as opposed to being constrained to the previous end-of-year period. We wrote custom Python code to extract the end-of-day stock prices for our sample companies from Yahoo! Finance. We then ran our own code in SAS to load them into a format usable in Eventus® (Eventus® software runs in the SAS system), and then we run our custom SAS code to conduct our event studies inside the Eventus® software.

A detailed description of the methodology and the statistics reported in this paper can be found in the user guide of Eventus<sup>®</sup>. Our single index model uses the S&P 500 index returns as the market returns. The market model is given by:

$$R_{it} = \alpha_i + \beta_i \times R_{mt} + \varepsilon_{it} \tag{1}$$

where,  $R_{it}$  denotes the return of security *i* on day *t*,  $\alpha_i$  is the intercept of the security characteristic line (SCL) thus representing the security's idiosyncratic excess returns over the market, whereas,  $\beta_i$  is the sensitivity of the returns of security *i* to the returns of the market, and  $R_{mt}$  is the market's return on day *t*.

The coefficients of the model are estimated using an ordinary least squares (OLS) regression model over the estimation period. We use an estimation period of 120 trading days. We keep 21 days of separation between the start of our days surrounding our event date (day -10, 0, +10) and the end of the estimation period, to act as a separation window in order to ensure that the estimated model does not contain any effects of leakage of the event before it becomes public. We then use the estimated model to generate the expected returns for a stock over a period spanning 10 trading days prior to the event (day -10), the event date (day 0), and 10 trading days after the event (day +10). This is depicted in Figure 1 below where day '0' represents the date of a de-listing announcement event.

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Figure 1. Model estimation and event window

-150 -31		-10	0	+10
Estimation window 120 day	Separation window 21 days	Ever	nt win	dow

Using the expected returns estimated from the market model above, we calculate the abnormal returns of a stock over the event window by taking the difference between the model estimated expected returns and the actual returns, as shown in equation (2) below:

$$AR_{t} = \frac{1}{N} \sum_{i=0}^{n} [R_{it} - \alpha_{i} - \beta_{i} R_{mt}], t = -10...0...+10$$
(2)

where,  $AR_t$  is the average abnormal returns for period *t*,  $R_{it}$  is the return of security *i* over period *t*,  $\alpha_i$  and  $\beta_i$  are the parameters from the OLS estimates of the market model, and  $R_{mt}$  is the return of the market portfolio (value-weighted) over period *t*.

The values of the cumulative average abnormal returns (CARs),  $AR_t$ , are calculated by cumulatively adding the ARt's over different event intervals ranging from -10 to +10 from the event day. The values of the ARs and CARs are expected to be zero, and any statistically significant non-zero values point to the presence of significant effects of the event resulting in abnormal returns (positive or negative).

The CARs are calculated by summing the abnormal returns over the interval from day -10 to day +10. Again, we assume there is no leakage of

the decision before the public announcements and thus are interested in the (-1, +1) window.

$$CAR_{(-1,+1)} = \sum_{t=-1}^{+1} [AR_t]$$
(3)

where,  $CAR_t$  is the cumulative abnormal return for the period (-10 to +10).

#### 4. RESULTS AND ANALYSIS

As discussed in the previous section, we use the market model to estimate the ARs and the CARs for our test events. Table 2a reports event 1 results based on ARs and the percentage of negative ARs around the introduction of the EQUITABLE Act in the U.S. Senate (days -10, 0, +10), for a full sample of 129 Chinese firms listed on the U.S stock exchanges. It also presents the ARs of a subsample of nine state-owned Chinese firms. Table 2b results, based on the full sample, show that Chinese listed firms experience highly significant negative stock price reaction for event-day, day 0 (-2.19%; 0.001 level) and for day +1 (-1.21%; 0.001 level). Similarly, for state-owned firms' subsample, we find a highly significant negative market reaction for day 0 (-1.37%; 0.01 level). In addition, for the state-owned subsample, a higher proportion (78%) of firms show a negative reaction on the event day (day 0). The results, based on ARs, are consistent with hypothesis H1 and document a negative wealth effect at the time when the EQUITABLE Act is introduced in the Senate.

 Table 2a. Event 1 — Introduction of the EQUITABLE Act in the Senate (June 5, 2019):

 Average abnormal returns (AARs)

Day relative	Comb	ined/Full sample (N	l = 129)	Companies with significant Chinese govt. ownership (N = 9)			
to announcement date	AARs	Negative AARs	Generalized Sign. Z	AARs	Negative AAR	Generalized Sign. Z	
-10	0.00%	0.31	1.312\$	1.38%	0.00	2.838**	
-9	-0.23%	0.48	-1.506\$	-0.87%	0.89	-2.504**	
-8	-1.50%	0.42	-3.091***	-2.36%	1.00	-3.172***	
-7	-0.65%	0.52	-0.097	0.57%	0.44	0.167	
-6	0.84%	0.48	3.249***	1.79%	0.33	0.835	
-5	-0.58%	0.66	0.431	0.25%	0.44	0.167	
-4	-0.25%	0.71	0.079	-0.35%	0.67	-1.168	
-3	0.25%	0.52	0.608	-1.37%	0.89	-2.504**	
-2	-1.04%	0.40	-1.330\$	1.28%	0.11	2.170*	
-1	-0.93%	0.35	-1.506\$	-0.41%	0.78	-1.836*	
0	-2.19%	0.56	-6.085***	-1.37%	0.78	-2.504**	
1	-1.21%	0.60	-4.500***	0.00%	0.44	0.167	
2	-0.26%	0.77	0.784	1.07%	0.11	2.170*	
3	-0.14%	0.40	1.488\$	-0.78%	0.89	-2.504**	
4	0.86%	0.58	3.073**	1.66%	0.11	2.170*	
5	-1.15%	0.59	-2.915**	-1.60%	0.89	-2.504**	
6	-0.05%	0.47	-1.330\$	0.12%	0.44	0.167	
7	-1.07%	0.41	-2.562**	-0.64%	0.89	-2.504**	
8	0.15%	0.43	0.96	-0.08%	0.56	-0.501	
9	1.03%	0.33	3.954***	2.35%	0.11	2.170*	
10	-0.19%	0.54	-1.154	-0.25%	0.44	0.167	

Note: Average abnormal returns (AARs), cumulative average abnormal returns (CARs), generalized sign. Z, and percent negative for the entire sample of 129 Chinese companies listed on the U.S. stock exchanges, followed by the CARs and the generalized sign. Z for different intervals. \* significant at the 0.05 level, \*\* significant at the 0.01 level, \*\*\* significant at the 0.01 level.

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Intervals	Combined/Full sample (N = 129)			Companies with significant Chinese govt. ownership (N = 9)		
	CARs	Negative CARs	Generalized Sign. Z	CARs	Negative CARs	Generalized Sign. Z
(-5, 0)	-4.74%	0.72	-4.852***	-1.97%	0.78	-1.836*
(-4, 0)	-4.17%	0.71	-4.676***	-2.22%	0.78	-1.836*
(-3, 0)	-3.91%	0.71	-4.500***	-1.87%	0.67	-1.168
(-2, 0)	-4.16%	0.77	-5.909***	-0.50%	0.78	-1.836*
(-1, 0)	-3.12%	0.78	-6.085***	-1.78%	0.89	-2.504**
(0, +1)	-3.39%	0.04	-6.965***	-1.38%	1.00	-3.172***
(0, +2)	-3.66%	0.03	-6.789***	-0.31%	0.56	-0.501
(0, +3)	-3.80%	0.77	-5.909***	-1.09%	0.89	-2.504**
(0, +4)	-2.94%	0.69	-4.147***	0.57%	0.44	0.167
(0, +5)	-4.09%	0.76	-5.732***	-1.04%	0.78	-1.836*

Table 2b. Event 1 — Introduction of the EQUITABLE Act in the Senate (June 5, 2019):Cumulative average abnormal returns (CARs)

Note: Cumulative average abnormal returns (CARs), generalized sign. Z, and percent negative over different intervals for 129 Chinese companies listed on the U.S. stock exchanges. \* significant at the 0.05 level, \*\* significant at the 0.01 level, \*\*\* significant at the 0.001 level.

Table 2b shows results for event 1 based on CARs for various selected intervals surrounding days (-10, 0, +10). These results show a highly significant and negative wealth effect around the introduction of the EQUITABLE Act in the U.S. Senate for various CAR intervals similar to the AR results reported for both full and subsamples in

Table 2a. For example, both the intervals (-5, +5) and (-5, 0) are significant and negative for the full and the subsample of firms around event day 0. These results support our hypothesis *H1* that the U.S. shareholders experience significant wealth loss around event 1 when initially the EQUITABLE Act is introduced in the Senate.

Figure 2. Event 1— Introduction of the EQUITABLE Act in the Senate (June 5, 2019)



Note: CARs for firms with significant Chinese government control and for all firms combined.

Figure 2 presents CARs for event 1 that begin on day -10 and then these cumulated abnormal returns follow the path that track days leading to event day 0 and then ending on day +10. As shown in Figure 2, the CARs for the combined sample kept moving toward the negative directions so much so that they touch roughly negative 9% on day +8. We do find that the subsample's (the one that reports significant state ownership) CARs also take a negative path after event day 0 and then, for most of the subsequent days, the CARs stay in the negative territory. The overall results suggest a significant wealth loss for shareholders of Chinese listed firms when the EQUITABLE Act is introduced in the Senate — event 1.

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Days relative	Combined/Full sample (N = 129)			Companies with significant Chinese govt. ownership $(N = 9)$		
date	AARs	Negative AARs	Generalized Sign. Z	AARs	Negative AARs	Generalized Sign. Z
-10	1.26%	0.31	4.332***	0.15%	0.44	0.356
-9	0.57%	0.48	0.458	-0.79%	0.78	-1.644
-8	1.13%	0.42	1.867*	0.80%	0.33	1.022
-7	0.58%	0.52	-0.423	0.28%	0.22	1.689*
-6	0.60%	0.48	0.458	0.33%	0.56	-0.311
-5	-1.22%	0.66	-3.592***	-0.20%	0.78	-1.644
-4	-1.39%	0.71	-4.649***	-1.68%	1.00	-2.978**
-3	-0.86%	0.52	-0.423	-1.35%	1.00	-2.978**
-2	1.19%	0.40	2.219*	3.19%	0.11	2.356**
-1	1.59%	0.35	3.451***	-0.13%	0.56	-0.311
0	1.02%	0.56	-1.303	0.22%	0.33	1.022
1	-0.60%	0.60	-2.184*	-2.15%	0.89	-2.311*
2	-2.88%	0.77	-6.058***	-4.31%	1.00	-2.978**
3	1.88%	0.40	2.219*	2.61%	0.11	2.356**
4	0.03%	0.58	-1.831*	-0.96%	0.78	-1.644
5	0.46%	0.59	-2.007*	-0.20%	0.67	-0.978
6	-0.90%	0.47	0.81	0.15%	0.33	1.022
7	0.53%	0.41	2.043*	0.12%	0.33	1.022
8	0.85%	0.43	1.690*	1.25%	0.22	1.689*
9	2.64%	0.33	3.980***	1.17%	0.22	1.689*
10	-0.13%	0.54	-0.951	-0.11%	0.56	-0.311

### Table 3a. Event 2 — The Senate passage of the Holding Foreign Companies Accountable Act (May 20, 2020):Average abnormal returns (AARs)

Note: Average abnormal returns (AARs), cumulative average abnormal returns (CARs), generalized sign. Z, and percent negative for the entire sample of 129 Chinese Companies listed on the U.S. stock exchanges, followed by the CARs and the generalized sign. Z for different intervals. \* significant at the 0.05 level, \*\* significant at the 0.01 level, \*\*\* significant at the 0.001 level.

Table 3b. Event 2 — The Senate passage of the Holding Foreign Companies Accountable Act (May 20, 2020)	)):
Cumulative average abnormal returns (CARs)	

Intervals	Combined/Full sample (N = 129)			Companies with significant Chinese govt. ownership $(N = 9)$		
	CARs	Negative CARs	Generalized Sign. Z	CARs	Negative CARs	Generalized Sign. Z
(-5, 0)	0.34%	0.53	-0.599	0.05%	0.33	1.022
(-4, 0)	1.56%	0.46	0.986	0.25%	0.33	1.022
(-3, 0)	2.94%	0.40	2.395**	1.93%	0.22	1.689*
(-2, 0)	3.80%	0.36	3.275***	3.28%	0.11	2.356**
(-1, 0)	2.61%	0.39	2.571**	0.10%	0.33	1.022
(0, +1)	0.42%	0.60	-2.184*	-1.93%	0.89	-2.311*
(0, +2)	-2.46%	0.71	-4.649***	-6.24%	1.00	-2.978**
(0, +3)	-0.57%	0.66	-3.592***	-3.63%	0.78	-1.644
(0, +4)	-0.54%	0.71	-4.649***	-4.59%	0.89	-2.311*
(0, +5)	-0.09%	0.67	-3.768***	-4.79%	0.78	-1.644

Note: Average abnormal returns (AARs), cumulative average abnormal returns (CARs), generalized sign. Z, and percent negative for the entire sample of 129 Chinese Companies listed on the U.S. stock exchanges, followed by the CARs and the generalized sign. Z for different intervals. \* significant at the 0.05 level, \*\* significant at the 0.01 level.

Table 3a shows results of average ARs and percentage of negative ARs around (days -10, 0, +10) for regulatory event 2 (that is, when the EQUITABLE Act is passed in the Senate) for a combined sample of 129 Chinese firms listed on the U.S stock exchanges. It also reports the ARs of a subsample of 9 state-owned Chinese firms. Table 3a results, based on the full sample, show that Chinese listed firms show highly significant positive stock price reaction two days before event 2, that is, for day -2 (1.19%; 0.05 level) and day -1 (1.59%; 0.001 level). In contrast, the ARs turn negative on event day (day 0) and then turn even more negative and statistically significant after the event day, that is, for day +1 (-0.60%; 0.05 level) and for day +2 (-2.88%; 0.001 level). Similarly, for the state-owned subsample of 9 firms, we find highly significant (statistically) negative market reaction on day +1 (-2.15%; 0.05 level) and for day +2 (-4.31%; 0.001 level). In addition, a higher proportion (89%) of state-owned firms show a negative reaction subsequent to event day (day +1). The results suggest that investors expected a positive outcome leading up to the Senate vote, but the passage of the Act and the sentiments expressed during the Senate hearing must have led investors to significantly revise their

expectations downward regarding the Chinese U.S.-listed firms' future standing in the U.S. capital markets.

Table 3b reports the cumulative average abnormal returns (CARs) for various selected intervals surrounding days (-5, 0, +5). It is of note that pre-event CARs are positive and statistically significant whereas, post-event CAR intervals, show a highly significant negative market reaction. That is, CARs for (0, +1), (0, +2) (0, +3) (0, +4), and (0, +5), all intervals are negative and are significant at 0.05 levels or greater. Similarly, for the subsample (that is, firms having significant Chinese state ownership) results show a highly significant positive price movement pre-event, whereas, we observe negative and statistically significant wealth effect for CAR intervals (0, +1), (0, +2), for event 2. These results suggest that market participants had expected a non-passage of the Senate bill leading up to the event day 0. Once the bill passes and goes against the market's optimism, then the market participants react highly negatively resulting in the surrender of profits earned prior to event 2, day 0 for our test samples. These results are consistent with hypothesis H2.





Figure 3. Event 2 — The Senate passage of the Holding Foreign Companies Accountable Act (May 20, 2020)

Note: CARs for firms with significant Chinese government control and for all firms combined.

We provide a tracking chart in Figure 3 showing CARs that begin on day -10 for event 2 and cumulate the abnormal returns by following the path that includes day 0 and that ends at day +10. As shown in Figure 3, the full sample kept moving in the positive directions leading up to the event day (day 0). After day 0, Figure 3 shows a pronounced drop in CARs for both samples. More importantly,

the CARs of the subsample (firms that report Chinese state ownership) touch around negative 5% on day +3. The overall results based on the movement of CARs suggest a significant wealth loss for shareholders of Chinese listed firms immediately after the passage of the EQUITABLE Act in the Senate.

 Table 4a. Event 3 — The House of Representatives passage of the Holding Foreign Companies Accountable

 Act (December 2, 2020): Average abnormal returns (AARs)

Days relative	Comb	ined/Full sample (N	l = 129)	Companie	Companies with significant Chinese govt. ownership (N = 9)		
date	AARs	Negative AARs	Generalized Sign. Z	AARs	Negative AARs	Generalized Sign. Z	
-10	-0.15%	0.50	0.809	1.12%	0.22	1.865*	
-9	-0.06%	0.54	-0.074	0.54%	0.56	-0.139	
-8	1.63%	0.45	2.046*	-0.24%	0.67	-0.807	
-7	0.57%	0.42	2.752**	0.26%	0.56	-0.139	
-6	3.27%	0.40	3.282***	1.98%	0.33	1.197	
-5	0.66%	0.50	0.986	1.65%	0.44	0.529	
-4	1.35%	0.53	0.103	-0.42%	0.67	-0.807	
-3	0.54%	0.44	2.223*	1.00%	0.33	1.197	
-2	-1.50%	0.67	-2.900**	-2.04%	0.78	-1.475\$	
-1	-1.86%	0.66	-2.723**	0.91%	0.44	0.529	
0	-0.70%	0.58	-0.957	0.14%	0.67	-0.807	
1	1.22%	0.49	1.163	0.17%	0.56	-0.139	
2	-1.29%	0.69	-3.430***	-1.04%	0.89	-2.143*	
3	-1.09%	0.64	-2.193*	-1.14%	0.89	-2.143*	
4	-0.36%	0.61	-1.664*	-2.07%	1.00	-2.811**	
5	-1.61%	0.72	-4.136***	-0.84%	0.78	-1.475\$	
6	0.60%	0.40	3.282***	0.50%	0.22	1.865*	
7	-0.62%	0.62	-1.840*	-0.47%	0.67	-0.807	
8	-0.60%	0.57	-0.78	0.32%	0.33	1.197	
9	0.50%	0.62	-1.840*	-0.82%	0.89	-2.143*	
10	0.03%	0.42	2.752**	-0.74%	0.67	-0.807	

Note: Average abnormal returns (AARs), generalized sign. Z, and percent negative for the entire sample of 129 Chinese companies listed on the U.S. stock exchanges, followed by the CARs and the generalized sign. Z for different intervals. \* significant at the 0.05 level, \*\* significant at the 0.01 level, \*\*\* significant at the 0.001 level.

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Interval	Combined/Full sample (N = 129)			Companies with significant Chinese govt. ownership (N = 9)		
	CARs	Negative CARs	Generalized Sign Z	CARs	Negative CARs	Generalized Sign Z
(-5, 0)	-1.50%	0.64	-2.193*	1.22%	0.33	1.197
(-4, 0)	-2.17%	0.65	-2.547**	-0.42%	0.56	-0.139
(-3, 0)	-3.52%	0.72	-4.136***	0.00%	0.67	-0.807
(-2, 0)	-4.06%	0.74	-4.490***	-0.99%	0.67	-0.807
(-1, 0)	-2.56%	0.67	-2.900**	1.05%	0.22	1.865*
(0, +1)	0.52%	0.53	0.103	0.31%	0.44	0.529
(0, +2)	-0.76%	0.57	-0.78	-0.73%	0.44	0.529
(0, +3)	-1.85%	0.65	-2.547**	-1.87%	0.67	-0.807
(0, +4)	-2.21%	0.66	-2.723**	-3.94%	0.89	-2.143*
(0, +5)	-3.82%	0.74	-4.666***	-4.78%	1.00	-2.811**

Table 4b. Event 3 — The House of Representatives passage of the Holding Foreign Companies AccountableAct (December 2, 2020): Cumulative average abnormal returns (CARs)

Note: Cumulative average abnormal returns (CARs), generalized sign, Z, and percent negative over different intervals for 129 Chinese companies listed on the U.S. stock exchanges. \* significant at the 0.05 level, \*\* significant at the 0.01 level, \*\*\* significant at the 0.001 level.

Table 4a reports results of average abnormal ARs and percentage of negative ARs around the passage of the Holding Foreign Companies Accountable Act for the test period (days -10, 0, +10), for a full sample of 129 Chinese firms listed on the U.S stock exchanges. It also presents the ARs of a subsample of nine Chinese firms that report significant state ownership. Table 4a results, based on the full sample, show that the U.S.-listed Chinese firms experience highly significant negative stock price reaction leading up to event-day (day -2; -1.50%; 0.05 level), for day -1 (-1.86%; 0.01 level), respectively. These negative ARs are persistent till day +5. Similarly, for 9 firms' sub-sample, that reports state ownership, we find a highly significant negative market reaction for days +2, +3, and +4. These results are consistent with hypothesis H3.

Table 4b reports the cumulative average abnormal returns (CARs) for various selected intervals surrounding days (-5, 0, +5) for event 3 when the Holding Foreign Companies Accountable Act is passed in the House of Representatives. These results show a highly significant and negative wealth effect around most event days for various CAR intervals similar to the ones reported for both full and subsamples' ARs in Table 4a. For example, the intervals (-5, +5), (-4, +4), (-3, +3), (-2, +2) and (-1, +1) are highly significant and negative for the full sample around event day 0. These results support our hypothesis H3 that the U.S. shareholders experience significant wealth loss around event 3 when the U.S. House passed the Holding Foreign Companies Accountable Act.

**Figure 4.** Event 3 — The House of Representatives passage of the Holding Foreign Companies Accountable Act (December 2, 2020)



Note: CARs for firms with significant Chinese government control and for all firms combined.

Figure 4 presents CARs in the pictorial form. An interesting shape of CARs emerges leading up to event day 0 and then subsequent to day 0. The CARs (for both samples) moved significantly higher reaching almost 8% positive (combined sample) around day -3 and then taking a dive in to the negative territory that never much recovered later. The overall results suggest that the market expected a positive outcome of the House vote but as event day gets nearer, it appears that negative outcome-related news starts leaking in to the market. This pushes the sentiment in the negative direction and later it never recovers due to the passage of the Holding Foreign Companies Accountable Act by the House resulting in significant wealth loss for shareholders of Chinese listed firms.

Our results above are consistent with the findings of prior studies which report that policy uncertainty has a statistically significant relationship with equity prices (Arouri, Estay, Rault, & Roubaud, 2016; Balli, Uddin, Mudassar, & Yoon, 2017; Brogaard & Detzel, 2015; Chen et al., 2018; Liu & Zhang, 2015; Li, 2017; Pástor & Veronesi, 2013). For example, Pástor and Veronesi (2013) show that political uncertainty leads to an increase in the risk premium, thereby affecting the stock prices; Li (2017) finds that Chinese stocks with higher economic policy uncertainty betas command positive equity premiums. Our findings are also consistent with the results of Chen et al. (2018) who find strong time-series variation in the expected returns of the Chinese stock market and China's economic policy uncertainty. Our results extend the prior studies in that while the above research primarily focuses on policy uncertainty, our paper focuses on impact uncertainty. Also, our results shed some light on the seldom studied phenomenon of the "cross-country relationship" between one country's geopolitical risks and another country's asset prices.

#### **5. CONCLUSION**

This study investigates the shareholder wealth effect of the recent passage of the de-listing regulation on Chinese companies listed on the U.S. stock exchanges. Using standard event study methodology, we examine the behavior of average abnormal stock returns and cumulative average abnormal stock returns around expected value relevant events. Hence, we study three events that follow the path leading up to the passage of the HFCAA by both Houses of the Congress. The HFCAA mandates companies to provide assurance that they are not owned or controlled by a foreign government. In addition, the law requires that these companies provide access to the U.S. PCAOB to examine their financial audits.

The results of our study show that all three test events (introduction of the bill in the U.S. Senate, its passage, and then its subsequent passage by the House of Representatives) adversely impacted share prices of the Chinese firms listed on the U.S. exchanges. These results support existing theoretical model predictions and the empirical findings that geopolitical uncertainty and government policy changes have adverse valuation consequences for asset prices. The significant finding of adverse wealth effect for shareholders of Chinese firms also points to the importance of recognizing this strong link, thus affirming the notion that bilateral or multilateral tensions do trickle down to the individual firm level, thereby providing direct evidence of the link between geopolitical tensions and asset prices.

Our study contributes to the literature on geopolitical uncertainty and asset prices, thereby adding another political uncertainty event to the state of the current body of knowledge regulatory policy uncertainty and its impact on investors' behavior. It is widely argued that investors arrive at economic decisions subject to expectations regarding the future economic policy environment (Antonakakis, Chatziantoniou, & Filis, 2013; Arouri et al., 2016; Brogaard et al., 2020; Brogaard & Detzel, 2015). Extant literature has established that the uncertainty regarding government economic policies in the realms of fiscal, monetary, and regulatory settings leads to risk factors that cannot be diversified away, thus impacting asset prices (Bernanke & Kuttner, 2005; Bomfim, 2003; Chatziantoniou, Duffy, & Filis, 2013; Hollmayr & Matthes, 2015). Prior literature documented studies that used a few subsets of political uncertainty events faced by investors, viz. elections and summits (see more in Pástor and Veronesi, 2013). We focus on studying and establishing the existence and the nature of wealth effects of this kind of political uncertainty on investors' sentiments regarding equity prices.

Our paper investigates a scarcely studied phenomenon international of geopolitical uncertainty whereby one country's economic policy uncertainty can impact another country's asset prices. To our knowledge, ours is the first study that contributes to addressing this important but overlooked gap in the literature. Our findings have implications for nations that are directly or indirectly involved in similar geopolitical alignments and rivalries. One of the limitations of our study is that, although we find that the wealth impact of geopolitical risk directly trickles down to the firmspecific level, we have not studied the crosssectional relationship between the geo-political risk and firm-specific drivers of value (nature of the business, industry, market capitalization, etc.). Another limitation of our research is that it has not established the linkage through which the wealth effects manifest and how they transmit through the financial markets' micro and macro structures. Future research can address these limitations by investigating the relationship and the mechanism through which the effects transmit themselves into asset prices. More studies are needed to increase our understanding of the role cross-border regulatory uncertainty plays in determining the risk premium, future cash flows, and the resultant price changes of financial assets.

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