

Hurting without Hitting: The Economic Cost of Political Tension^{*}

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Abstract

Political tension causing diplomatic strains rarely escalates into direct violence or war. This paper identifies the economic effects of such non-violent political tension by examining Taiwan's sovereignty debate. Non-violent events harming the relationship with mainland China lead to an average daily drop of 200 basis points in Taiwanese stock returns. The impact is more severe on firms openly supporting the Taiwanese pro-independence party. Through a series of tests we identify this economic penalty as initiated by mainland authorities, who specifically target political opponents that are economically exposed to mainland China via either investments or exports.

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1 Introduction

While it has been documented that physical violence in political disputes can negatively affect stock prices (e.g. Abadie and Gardeazabal, 2003; Zussman and Zussman, 2006; Guidolin and Ferrera, 2007), other cost factors of political tension have largely been left unexplored. This paper studies the non-violent diplomatic disputes between China and Taiwan to identify the cost of political tension that can be attributed to the use of political power or economic pressure. The study further merges with research on the value of political connections (e.g. Fisman, 2001; Faccio, 2006; Acemoglu, Hassan and Tahoun, 2014) by demonstrating that the cost of conflict is partly attributable to economic and strategic targeting of political opponents.

To elaborate, the paper examines how increased political tension in Taiwan's sovereignty debate has affected stock returns using two different data sources. First, major political events back to 1995 constitute the basis of an event study. Despite none of the events having led to direct physical confrontation or violent actions, the results show that on average Taiwanese stock returns fall by 400 basis points in the course of two days (announcement date and the following trading day), which translates into an average 200 basis point drop in daily returns. Moreover, the adverse effect is long-lasting and suggests a real economic impact of political tension. Second, the analysis also employs survey data available since 2006, where the Taiwanese public is asked about their short-term expectations on political tension with mainland China. This analysis reveals that the cost of political tension is more comprehensive than previously documented as months of increased expected political tension are associated with lower average stock returns of Taiwanese firms. In other words, not only do realized distress events strongly affect stock returns, but increases in expected future tension levels similarly associate with declines in present stock returns.

The paper explores the channels through which political tension affects stock returns. In particular, it reveals that the cost of political tension in part stems from economic pressures targeted at selected companies. As the main political debate in the cross-strait relationship centers on the issue of Taiwan independence, we study the impact of political tension on firms associated with either of the two opposing political axes in Taiwan. We determine a firm's political association by the political connection of its founders and/or managers, which we obtain from online search records that links them to either of the two major opposing political coalitions (e.g. through party membership, close personal ties, public statements, etc.). Using this unique, hand-collected dataset the paper uncovers a differential stock price reaction, where Taiwanese firms politically connected to the pro-independence coalition ('anti-China' firms) are more negatively affected than firms publicly supporting a Chinese national identity ('pro-China' firms). Evidence shows that Taiwanese

firms labeled as ‘unfriendly’ to mainland China see their stock prices suffer disproportionately in times of political distress.

The analysis further shows that these economic pressures on political opponents concentrate on Taiwanese firms with high mainland exposure through either exports or investment. We also examine whether the detrimental effect on exporting firms is likely to stem from the reactions of mainland consumers or mainland authorities. We do not find that firms offering brand-name consumer-products to mainland China are more vulnerable to changes in political tension, which leads us to conclude that Chinese consumers are not actively boycotting Taiwanese products and that the economic impact is more likely to originate from a politically strategic government response.

Lastly, the paper offers three additional results that supplement our main conclusions. First, the negative impact of political tension extends to Chinese stock returns, where the impact is less severe, consistent with the mainland’s economic and military strength vis-à-vis the island of Taiwan. Second, despite all our events are non-violent ex-post, they can still involve a risk of war ex-ante. This creates a separate stock market effect that further adds to the cost of political tension. This cost is separately identified by documenting that firms located relatively close to potential military conflict zones experience a larger drop in stock returns when tension rises. Third, given the detrimental stock market effect of political tension, we also study whether this is due to a reduction in expected cash flows of firms or because it leads to higher risk premia. We find evidence of both as mainland investment and foreign sales of Taiwanese firms drop around tension increasing events and investors simultaneously demand higher yields on Taiwanese government bonds. Overall, our results align with theoretical models of political uncertainty (e.g. Pastor and Veronesi, 2013) and the general conclusion that the impact of uncertainty may not be limited to the financial market, but further feed into the overall macro economy (Baker and Bloom; 2012, Bloom et al., 2012).

The paper differs in three aspects from other studies on political instability and stock market reactions. First, existing studies mostly examine stock market outcomes within violent settings, such as World War II (Frey and Kucher, 1999; Waldenström and Frey, 2006), the war in Iraq (Amihud and Wohl, 2004; Rigobon and Sack, 2005; Wolfers and Zitzewitz, 2009), the Basque conflict in Spain (Abadie and Gardeazabal, 2003), the civil war in Angola (Guidolin and Ferrara, 2007), the Palestinian-Israeli conflict (Zussman and Zussman, 2006; Zussman, Zussman and Nielsen, 2008), the Arab Spring (Acemoglu, Hassan and Tahoun, 2014), etc. In contrast, we propose a framework to assess the impact of non-violent political tension and identify the channels through which the cost occurs. We then go on to examine the case of Taiwan and mainland China through two measures of political tension – obtained from historic events and survey data – that do not cover periods of physical confrontation. Instead, the events include relatively ‘softer’ acts (such

as speeches or statements by political figures) and the surveys capture expected political tension, which offers a relatively subtle measure of the public's political sentiment.¹ Thus, the study focuses on the financial impact of a shift in the general political climate, which offers broader implications as the majority of international political conflicts do not escalate into direct violence.

Second, by measuring political tension by both historic events and public opinion surveys, this paper captures and compares the effects of both realized/current and expected/future political instability. Our results not only show that realized distress events strongly affect stock returns, but expectations on future tension are also associated with a statistically significant and economically relevant decline in average daily stock returns (approx. 25 basis points). Moreover, as the data from public opinion polls covers a relatively stable period in the cross-strait relations, the results additionally reveal that political tension is inherently costly at all times, rather than merely being limited to times of concrete conflict or immediate crisis.

Third, the paper contributes by exploring the mechanism through which political tension ends up being costly, showing that both economic pressure and risk of war are at play. This is possible by examining the heterogeneous effects on firms across political connections, geographical locations and their degree of economic linkage with China. To our knowledge, only Fisman, Hamao and Wang (2014) have previously examined the detailed channels of economic pressure under cross-country tension, but in a setting absent of heterogeneity across political connections.² As described above, evidence shows that the price of political tension originates not only from the threat of military action, but also from economic pressures primarily targeting companies with mainland exposure and considered hostile towards the Chinese authorities. These results are consistent with anecdotal evidence and empirically verify that the political tactics utilized by mainland China align with historical threats made by Chinese officials. To exemplify this, the Taiwan Affairs Office – a Chinese agency responsible for setting and implementing policies related to Taiwan – stated in 2004 that Beijing does not welcome any Taiwanese business people who “make money in the mainland and then go back to the island to support Taiwan independence” (*China Daily*, 2004; *Taipei Times*, 2004a).

¹ This also differs from e.g. Berkman, Jacobsen and Lee (2011), who despite including (but not limiting themselves to) non-violent events, focus on selective and extreme disaster risk. Additionally, rather than studying effects on stock prices, a related literature studies the dynamics of violent conflict (Jaeger and Paserman, 2006, 2008) or examines the impact of military hostility and mistrust on house prices (Besley and Muller, 2012) and international trade (e.g. Martin, Mayer and Thoenig, 2008; Guiso, Sapienza and Zingales, 2009; Glick and Taylor, 2010).

² Their study differs in their objective and approach, i.e. Fisman, Hamao and Wang (2014) study domestic industry effects and compare the results across two nations that vary along cultural dimensions such as language, history and structure, whereas we examine two groups that share a common ethnic and cultural background, but differ primarily in their political ideology. This follows from our alternative objective to measure the effect of purely opposing political views on stock returns, as opposed to the effect of cultural aversion. As such, Fisman, Hamao and Wang (2014) focus on two particularly stormy episodes in the Sino-Japanese relationship, whereas our study also examines relatively stable times absent of immediate crisis.

Our paper also extends the literature on the value of political connection by studying tension across national borders and documenting a value impact arising due to a response from a government other than your own. For example, Fisman (2001) and Acemoglu, Hassan and Tahoun (2014) demonstrate that increased uncertainty about the incumbent's political power adversely affects stock returns of firms connected to the regime. We extend this by showing that the source of the adverse effect can be foreign, as cross-border disputes with China harm Taiwanese firms connected to the local pro-independence party, despite the domestic popular support for the pro-independence party increases with tension.

As such, this paper also relates to numerous highly tense political confrontations arising worldwide, such as the Falkland Islands sovereignty conflict, U.S.' embargo on Cuba, Russia-Belarus gas disputes, Bolivia-Chile sea access debate, strained Sino-Japanese relations, China-Vietnam territorial and oil rights disputes, etc. – all of which are characterized by high tension but no ongoing day-to-day physical confrontation. This paper offers insights into the economic costs – and the channels through which they occur – of such non-violent political disputes.

Lastly, the results are of wider interest considering China's global economic prominence and their propensity for using economic pressure to voice political displeasure and to silence opposing political views. One example is the conferral of the 2010 Norwegian Nobel Peace Prize to the Chinese human-rights activist Liu Xiaobo, which was not only met with harsh criticism by the Chinese authorities, but also precipitated harsh economic consequences. Specifically, China suspended all on-going talks on a free-trade agreement with Norway and imposed additional restrictions on shipment entries – leading to a 62% drop in sales of the Norway's famed salmon to China.³ Similarly, following the 2014 Hong Kong protests local artists and entertainers had their mainland performances “indefinitely postponed” after publicly showing support of the pro-democracy rallies. Chinese state-run media commented that the celebrities had “violated the principles of ‘one country, two systems,’ [and] challenged the authority of the central party” (*The New York Times*, 2014). The findings of this paper are consistent with such examples, as shifts in the political climate in the Taiwan-China cross-strait relationship not only impact average Taiwanese stock returns, but particularly affect those firms associated with the ‘undesirable views’ of the pro-independence party.

The paper proceeds by outlining the conceptual framework and argumentative structure for testing the primary hypotheses (section 2). Following this overview, we next describe the cross-strait relationship (section 3.1), the data (sections 3.2-3.5) and the identification strategy (section

³ See e.g. *CNN* (2010), *The Independent* (2011) and *The Economist* (2012). The Chinese authorities moreover snubbed Norwegian ministers and suppressed the news in China (*Washington Post*, 2010; *The Economist*, 2012). Norwegians are also the only Europeans not eligible for visa-free visits to Beijing (*Financial Times*, 2012).

3.6). The empirical analysis of the outlined hypotheses follows in section 4. Lastly, section 5 adds an examination of the effects on cash flow and risk premia, and tests theoretical predictions on the impacts of uncertainty shocks, while section 6 concludes.

2 Conceptual Framework

Consider a setting of a relatively peaceful world where violent conflicts are rare among governmental entities. However, strains in bilateral diplomatic relationship are unavoidable, which creates fluctuations in political tension, characterized by threats of economic or even military measures.

In such a setting, the question in which we are interested is whether seemingly mild political tension between two governmental entities has any impact on economic outcomes, and through which channels this might occur. Compared to the well-documented effects of war, it is not obvious that such disputes between two governments should have a significant impact on economic activity. It can, however, be argued that such political unrest raises the risk of war. Additionally, is not unusual to observe threats or actual measures of economic sanctions in such a setting.

To measure the costs associated with political tension, a good measure of economic value is necessary. While the average citizen may be indifferent to political tension or perhaps emotionally one-sided (e.g. due to patriotism), financial markets are likely to be relatively unbiased but yet responsive to the intensification of political tension. Albeit imperfect, firm stock prices therefore serve as our primary proxy for economic value. Moreover, firms are heterogeneous in their exposure to potential war, economic sanctions, consumer boycotts, etc. Thus, studying possibly heterogeneous stock price reactions across firms offers a tractable setting to measure the cost of political tension as well as to diagnose the mechanism through which it appears.

Within this framework, Figure 1 outlines our testable hypotheses and the logical progression of the paper. The first issue of interest is whether political tension, even in the absence of violent confrontation, has a detrimental effect on the stock market.

Hypothesis H1: Non-violent political tension affects stock returns

This hypothesis can be tested by measuring the average announcement effect of non-violent events identified as having increased political tension, as well as the cumulative impact of such events over subsequent periods. Additionally, we explore how stock returns react to political tension measured by public poll data. The event and survey data, which constitutes our two measures of political tension, is described in section 3.3 and the empirical results on the average effect is presented in section 4.1. We also detail the possible endogeneity issues of the two measures and provide solutions.

If results show that non-violent political tension negatively affects stock returns, the next task is to understand through which mechanism this happens. We focus on two possible channels: the threat of war and economic punishment of political opponents (cf. Figure 1).

Hypothesis H2: Stock price drops due to risk of war

Firms may face heterogeneous degrees of war risk resulting from their different geographical location and distance to the relevant ‘border’. Therefore, one may test the hypothesis by comparing stock returns across firms’ geographical locations. In our study, even though none of the events led to physical confrontation ex-post, it does not imply that there is no risk of war ex-ante. We thus examine whether firms close to potential areas of military warfare are more strongly affected by increased political tension than others in more distant areas (these geographical areas are detailed in section 3.4).

Since the increased probability of military invention is likely to be destructive through various channels, this approach will also capture the broader costs of potential warfare. To give an example, there could be an expectation that ports close and transportation slows down as military forces mobilize into conflict zones. In other words, the estimated costs associated with the risk of war are not only limited to damaged infrastructure or loss of life, but will also incorporate a more general disruption of economic activities due to military invention.

Hypothesis H3: Stock price drops due to targeted economic pressure

Although it may be tempting to attribute all the negative effects of political tension to the increased risk of warfare, other forces may be at work. As economic pressure can be used more discriminatively than warfare, one can test hypothesis H3 by exploring if and how the impact of political tension differs across the political connections of firms (Test A of hypothesis H3 in Figure 1).

The current political tension between Russia and the West constitutes a recent example of such targeted economic pressure, where the U.S. and the E.U. have imposed financial sanctions on a shortlist of business tycoons with close ties to the Kremlin. Similarly, China appears to exploit its economic importance and influence in international political conflicts. The aforementioned Nobel Peace Prize disagreement with Norway and recent Hong Kong protests constitute only two such examples. Another high-profile example is the on-going territorial dispute in the South China Sea between China and the Philippines (among others), which has been associated with sudden restrictions on all banana imports from the Philippines to China, in addition to Beijing issuing a travel advisory that portrays the Philippines as anti-China (*Washington Post*, 2012). Thus, we attempt to examine whether China has asserted selective economic pressures on Taiwanese

businesses that can be classified as anti-China (identified and discussed in section 3.5). We hypothesize that Taiwanese firms are hurt more by increased tension if they are considered uncooperative by the Chinese government, e.g. because of their association to political parties or public statements made by senior management.

As an additional test of this hypothesis, one can explore whether firms with a high degree of economic exposure are more severely affected. In general, if targeted economic pressure is imposed on political opponents, one would expect the detrimental effects to be felt more by those economically exposed to the conflict. For example, the conflict between Russia and the West is more likely to impact politically connected companies in Russia with economic relationships in the West, compared to companies operating primarily domestically or in other geographical regions.

Thus, in this setting, we additionally examine whether the detrimental impact varies with the degree of Taiwanese firms' business exposure to mainland China (Test B of hypothesis H3 in Figure 1). If the detrimental effect originates from targeted economic pressure, one would expect anti-China firms with high mainland dependence and economic vulnerability to be more severely affected.

Hypothesis H4: Mainland consumers are not responsible

A negative economic impact on politically connected businesses may in principle be driven by a consumer response, rather than merely by economic pressures imposed by the opposing government. To determine the origin of the cost of political tension we propose investigating the effect on firms offering brand name consumer products.

As a general example, the economic impact of the Russian conflict could in principle be driven by Western consumers boycotting Russian products, as opposed to being driven solely by government actions. Similarly, in our setting the economic impact could stem directly from consumer choices of the Chinese public, rather than being (only) a consequence of actions undertaken by the mainland authorities. Considering anecdotal evidence (cf. the quote on page 5 on pro-independence businessmen being unwelcome to the mainland), we hypothesize that the effect is not driven by mainland consumers. We test the hypothesis by examining the effect on anti-China firms selling well-known consumer products in mainland China.

To elaborate, it may appear reasonable to assume that a consumer boycott will hit consumer products more severely than products sold directly to businesses. A complication, however, is that perhaps the opposing government is also more likely to target consumer goods compared to business-to-business products. Thus, to reliably test whether the economic cost of political tension stems from either a consumers or government reaction, it is not sufficient to compare only consumer and business-to-business products. As a more fruitful approach, we propose that a boycott

will hit companies with recognizable consumer brands more severely compared to companies offering less known products. Thus, in our setting, when Taiwanese exports to the mainland are decomposed into brand name consumer products and other (non-brand) consumer products, a consumer boycott will lead to a stronger effect on producers of branded consumer goods independent of the government's action.⁴ The definition of brand name products and the hypothesis testing is presented in section 4.4.

3 Data and Identification

3.1 Background and Setting

Taiwan's sovereignty has long been disputed, with mainland China claiming ownership of the island. To provide a brief historical background of the setting, the Chinese Civil War was fought in 1927-1949 between the Communist Party of China and the governing party of the Republic of China. The war ended with mainland China being taken over by the Communist Party and establishing present day People's Republic of China. The receding government resettled to the island of Taiwan, which formally still bears the name Republic of China. No peace treaty has ever been signed and mainland China still claims the island of Taiwan (and vice versa). The cross-strait relations in the post-war era have accordingly been characterized by periodic political crises and occasional threats of military action.

The present day political landscape in Taiwan consists of two dominant party coalitions that disagree on whether to move towards increased independence or, alternatively, strengthen mainland integration. On one side is the Pan-Green Coalition, led by the Democratic Progressive Party (DPP), which primary political axis involves Taiwan independence over Chinese reunification. On the other side is the Pan-Blue Coalition, led by the Kuomintang (KMT), literally meaning the Chinese National People's Party, which favors a Chinese national identity over a separate Taiwanese one.

⁴ More specifically, if the government takes no targeted action but *only consumers* target brand name consumer products, we can conclude that a negative impact on those producers is initiated by mainland consumers (and if there is no measurable effect, then there is no consumer reaction). Similarly, if *also the government* specifically targets brand name consumer products we would similarly observe a larger impact on firms selling brand name consumer products (i.e. the stronger effect is independent of government actions). In this latter case, however, we cannot distinguish between a consumer or government driven effect. But this does not become an issue since the results (in Table 4) show no incremental effect on consumer brand producers, implying no consumer reaction (neither is there government reaction targeted only on consumer brands). Thus, based on these results the only assumption needed (to conclude that consumers do not react) is that the negative effect of a potential consumer boycott is not being cancelled out by government actions directly aimed at assisting anti-China firms offering brand-name consumer products in mainland China.

The latter standpoint accordingly implies a softer cross-strait policy and increased economic linkage with mainland China.⁵

3.2 Data

The study covers political events occurring since 1995 and is further supplemented with survey data available since 2006 (see full description in section 3.3). Daily stock market data and annual financial statement data is compiled from the Thomson One Banker platform, which incorporates Thomson Financial databases such as Datastream and Worldscope. Additionally, industry level data on exports and investments of Taiwanese firms in mainland China is obtained from the Taiwanese Bureau of Foreign Trade and the Taiwan Stock Exchange. Table 1 shows the summary statistics of the key variables used in the econometric analysis.

As shown in Table 1, the study includes approximately 700 publicly listed Taiwanese firms and twice as many Chinese firms, where the exact number varies across the two data samples and time periods (cf. panels A and B). The summary statistics are broken down across those Taiwanese firms that support either of the two political parties (pro- vs. anti-China views, cf. section 3.5). Similarly, the table separately summarizes the sub-sample of Chinese firms that are geographically close to Taiwan compared to those that are not (South-East coastal firms vs. the rest). As detailed in section 2.4 the study examines the costs associated with the risk of a cross-strait war by examining the differential stock market outcomes across these two geographic regions.

3.3 Measures of Political Tension

The study offers two types of measures of political tension. First, major political events in history are recorded and constitute the basis of an economic event study. Second, the analysis also employs survey data, which offers a repeated monthly measure of the expected political tension among the general Taiwanese public.

A. Events: Sudden and Unexpected Elevation of Tension

The International Crisis Group (ICG) records political events across the world and documents them in their regular Crisis Watch reports. The ICG describes each event and why it has increased political tension. Events that deteriorate the political climate between Taiwan and China are recorded by ICG back to 2003. Additionally, we collect historical data by compiling events listed on the Chinese-language Wikipedia page “The Timeline of Cross-Strait Relations” back to 1995. During the post-2003 period, the major events reported by the two sources are the same. Since 1995

⁵ In more detail, the Pan-Green Coalition is an informal political alliance consisting of the Democratic Progressive Party, Taiwan Solidarity Union and the minor Taiwan Independence Party. The Pan-Blue Coalition is a political alliance consisting of the Kuomintang, the People First Party and the New Party.

there are eight events reported across the two sources and thus constitute the basis of our event analysis. All events are sparked by controversial statements or actions involving the political status of Taiwan (e.g. pro-independence sentiments, description of ‘state-to-state’ or ‘one-country-on-each-side’ relations, etc.), but where no actual physical confrontation materializes.

The events are fully detailed in Appendix A. Both sources list the original news reports of each event, allowing us to identify the date when the event first appeared in the press. However, there are two exemptions. First, the ICG records a deteriorating cross-strait relationship in November 2003 as “Chinese officials responded sharply to Taiwanese President’s calls for a new constitution and right to hold referendums” (*CrisisWatch*, 2003, p. 6). This event is neither abrupt nor unexpected, as the call for a new constitution came at least several weeks earlier. Thus, as this sequence of events is not clearly timed it cannot reliably be included in the event study analysis. Second, in August 2006 tensions rose as “China continued negotiations with three Taiwan allies for oil/gas exploration” (*CrisisWatch*, 2006, p. 7). As this similarly constitutes a continuation of a prolonged action where the event date cannot be clearly defined (we have no records of when the talks started) we again have no choice but to exclude it. This process therefore leaves us with six notable and well-defined events that are described in Appendix A, where the starting point of our sample is marked by the so-called 1995-96 Taiwan Strait Crisis, and the sample ends with the last event covered noted by ICG in early 2006.⁶

B. Survey Data on Tension Expectations

The Taiwanese “Global Views Survey Research Center” has since 2006 conducted regular surveys on locals’ views on the cross-strait relationship. The center is a member of the Commonwealth Publishing Group (including member companies such as Harvard Business Review – Chinese Edition) and is accepted in Taiwan as both a credible and neutral source (*Taipei Times*, 2011), resulting in regular citations by foreign media and research institutes.⁷ In each survey 1,000 people in Taiwan above 20 years old are contacted via computer-assisted telephone calls, which matches the sample size traditionally used in nationwide Gallup polls in the U.S. (*Gallup*, 2014). The representativeness of the sample is checked in each survey by using information on gender, age and education by residential areas from the population census (*Global Views*, 2014). Although the surveys on cross-strait relations are only conducted between June 2006 and September 2011, they are repeated every month during this period and provide a unique indication of the public’s short-

⁶ Upon an email inquiry of why there are no tension increasing events documented after 2006 (such as the March 2014 protests against a trade deal with China), the ICG replies that “Our publication is mainly designed to alert readers to situations where there is particular risk of new or significantly escalated conflict ... there have been no significant developments recently that have warranted the inclusion of the Taiwan Straits.”

⁷ These include Bloomberg, Businessweek, Financial Times, Hoover Institution, LexisNexis, Reuters, The Brookings Institution, The Wall Street Journal, etc. See expanded list with links to citing articles here: <http://www.gvsrc.net.tw/dispPageBox/GVSRCCP.aspx?ddsPageID=CITE&>.

term expectations on the political climate towards mainland China. More precisely, the survey asks: “In general, what is your opinion on the relationship between Taiwan and the mainland next month comparing with this month?” The research center aggregates the responses and we consistently construct a month-by-month dummy variable capturing the expected tension over the June 2006 – September 2011 period, i.e. taking the value of 1 for months in which tension is expected to rise, 0 otherwise. Out of the 63 months in the 2006-11 period, there are a total of 30 months (widely scattered) in which the tension level is expected to rise (cf. Figure A.1 in an online appendix).

The survey data offers a unique supplement to the event data as it captures changes in expected political instability, rather than changes caused by actual realized events. In other words, rather than being solely based on major moments in history, the survey data offers a more subtle ‘day-to-day’ measure in the political attitude of the general public. Additionally, as no events harming the cross-strait relationship are documented after 2006, this measure provides additional evidence of the cost of political tension in relatively stable times. Thus, one can expect a relatively lower impact of political tension on stock returns using this 2006-2011 measure of political tension.

3.4 Data on Geographical Location (Risk of War)

We hypothesize that firms close to potential areas of military warfare will be more strongly affected by increased political tension than firms in more distant areas. However, as the island of Taiwan is relatively small, such a comparison is not meaningful among Taiwanese firms. Instead, we examine Chinese firms close to the island of Taiwan compared to Chinese firms headquartered in other more distant parts of the mainland. The geographical location of firms is based on their local province as stated in their financial accounts. The firms classified as close to Taiwan are those nearby the South-East coast of China, i.e. firms located in the provinces of Fujian, Guangdong, and Zhejiang, and the Municipality of Shanghai. A map of Taiwan and these mainland provinces is provided in Appendix B. All of the gray-colored coastal provinces are within reach of the Taiwanese mobile land-attack cruise missile system, which is one of the primary defense systems available to Taiwan (Thim, 2013; Wendell, 2013). Furthermore, in case of military warfare the involvement of this particular coastal region is enhanced by the U.S. being a *de facto* ally of Taiwan and historically having ordered U.S. aircraft carriers to be present in this conflict zone (BBC, 2014).

3.5 Data on Political Connection (Targeted Economic Pressure)

We determine a firm’s political association according to the political connection of its founders or managers who represent the firm. A firm is classified as ‘anti-China’ if its founder or manager publicly supports Taiwan independence or has close ties to the DPP (or other parties in the Pan-

Green Coalition). Conversely, if the founder/manager supports reunification with the mainland, the KMT or other Pan-Blue Coalition parties, the firm is defined as ‘pro-China’.

In order to gather this information we first hand-collect a list of founders and managers of the firms that are listed on the Taiwan Stock Exchange. We then use the Google search engine to find news reports on the political connections of every name on our list. The key words in the search are a combination of the names of the founder (who often is also the chairman), the manager, the name of the firm, one of the names of leaders of the major parties (Chen Shui-bian, Lee Teng-hui, Lien Chan, Ma Ying-jeou, Soong Chu-yu, Tsai Ing-wen) and one of the terms “Democratic Progressive Party”, “Kuomintang”, “Taiwan Independence” or “referendum”. We read through the top 30 search results (first 3 pages) and repeat every search for each combination of key words in both simplified Chinese and traditional Chinese.⁸ When filtering the search results we ignore articles from personal blogs, unless we find the same information from other formal sources. Also, we attempt to find the same information from both Taiwanese and Chinese media and limit ourselves to classifying only cases where there is no disagreement across media outlets on the political connection of firms.

Using this information, political connection is established through either observed party ties or public statements. First, the political connection can be established if the founder/manager of a firm is a member of a given party, has ever been an officer in the government or an associated organization of the party, or has a close personal relation with the main leaders of the party. Second, business executives in Taiwan sometimes make public statements to express their supports towards Taiwan independence, the referendum on Taiwan’s UN membership, and/or one of the political parties. If a business executive has been making consistent statements over the sample period, his/her political connection is classified accordingly. In the end, this process results in 28 firms classified as anti-China and 41 firms as pro-China (the sample with full data availability varies across regressions). This sample size of 69 politically connected firms is on par with studies on the value of political connection, cf. Fisman (2001) who examines 79 firms connected to the Indonesian Suharto regime and Acemoglu, Hassan and Tahoun (2014) who study stock returns during the Arab Spring among 63 firms identified as politically connected to the Egyptian authorities. The detailed connections of all our political firms and the corresponding sources are outlined in Appendix C.⁹

⁸ Based on about 20 randomly selected searches, the search results on page four and beyond are either irrelevant or repetitions of those on the first three pages.

⁹ A small sample of 14 firms are observed to have switched from anti-China to pro-China in the sample period, while there is no switch in the reverse direction. This occurs if managers or founders have unexpectedly changed their statements. In principle this makes an interesting data set, but it is far too small for statistical analysis and it is not feasible to determine an accurate switching date. Thus, these firms are instead excluded from the analysis of politically connected firms in order to produce results that are purely based on sharp and uncontested identification of political connectedness. When analyzing politically connected firms, we further exclude government operated firms since they

3.6 Empirical Strategy and Identification

In the event study, the basic regression equation is of the following form:

$$y_{ite} = \beta_1 TensionEvent_{te} + FirmControls_{ite} + \alpha_i + \gamma_e + \varepsilon_{ite}, \quad (1)$$

where y_{ite} is daily percentage return for stock i on day t of event e . Each event window spans 20 weekdays before and after the event day, where all other dates are excluded from the sample, and thus t constitutes the time period $[-20, 20]$. We focus on the effects of each event across two days, i.e. the event dummy $TensionEvent_{te}$ equals to 1 on each announcement day and the following trading day, and 0 otherwise. Thereby we incorporate potentially lagged reactions and take into account that an announcement may arrive late in the day when markets have (almost) closed.¹⁰ In all specifications, we control for firm fixed effects (α_i) and event fixed effects (γ_e) that respectively filter out the average return of each firm and the average return of all firms within each event window. Thus, the estimated coefficients report the impact of political tension on stock returns above and beyond the average return in the corresponding event period. As such the specification captures abnormal returns associated with increases in political tension.¹¹ We further include various firm level controls, such as the corresponding time-varying market beta of each firm in order to capture abnormal returns, as suggested by Acemoglu, Hassan and Tahoun (2014). These betas are obtained by regressing the daily stock returns of each firm on a constant and corresponding stock index return (Taiwan, Shanghai or Shenzhen) for the time period $[-100, -20]$ prior to each of the six tension increasing events, which results in six beta estimates per firm. Other firm controls include firm size, leverage, and return on assets, as defined in Table 1. Also, in all firm-level regressions we allow the error term (ε_{ite}) to be correlated both across time for any given firm and across firms within the same day of each event. Regression (1) is run separately for all Taiwanese and all Chinese firms.

The identifying assumption in this specification is the exogeneity of each event, which creates an unexpected, sudden, and one-time increase in political tension. Hence, for each event – excluding the announcement day and the following trading day from the event window – the average return during the remaining 38 weekdays provides a measure of normal returns for each

may switch sides with new election outcomes (likely with a lag, again making it infeasible to time the switch accurately).

¹⁰ Given the sheer mass of possible news outlets in both China and Taiwan, it generally infeasible to pinpoint the exact timing of when a news announcement first appeared within each day.

¹¹ It is worth noting that additionally controlling for market returns when estimating the effect on the firm sample would not be valid. Specifically, since harmful political events also affect the overall stock market (as verified in regressions 2, 4, 6 and 8 in Table 2), the effect of political tension on each stock would not be fully captured by the event dummy if the market return is also included as a control. Instead, and arguably more appropriately, we include period fixed effects (a dummy for each event window) to filter out average returns, implying that the event dummies measure the effect of political tension beyond the average market performance within the event period.

stock. Although in principle tension may either ease or build up after the first two days, no other major events occur within each event window. Besides, as is documented in the next section, within the 40-weekday window most of the stock price impact is realized on the event day and the following trading day.

When investigating heterogeneous effects of political tension, e.g. effects on Taiwanese firms by political connections, we further expand the above regression into the following form:

$$y_{ite} = \beta_1 TensionEvent_{te} + \beta_2 (TensionEvent_{te} \times AntiChina_i) + FirmControls_{ite} + \alpha_i + \gamma_e + \varepsilon_{ite}. \quad (2)$$

In this case, we run regressions only for politically connected Taiwanese firms, where $AntiChina_i$ is equal to 1 if the firm is connected with pro-independence parties and 0 if it is connected with the pro-unification parties. Similar specifications are adopted when exploring the effects on Taiwanese firms along other dimensions and on Chinese firms by geographical location. To make causal inference, the additional identifying assumption is that the events do not affect location and political connection directly. This assumption may be violated if firms migrate or change political connection upon seeing negative effects of the events. Although there is no evidence showing that Chinese firms move away from the South-East coastal area, it is true that some Taiwanese firms have switched from anti-China to pro-China (cf. footnote 9). However, this switching possibility should mitigate the long-run negative effects of political tension, as firms that have more to lose due to their political connection (anti-China firms) are more likely to switch. Thus, despite the 40-weekday event window partially addressing this potential bias, the estimates should nonetheless be viewed as conservative lower bounds, as further discussed in section 4.3.

One may still be concerned that political connection of non-switching firms is endogenous, i.e. firms self-select their political connections based on expected stock returns. However, by including firm fixed effects any time-invariant factors are controlled for. Furthermore, this logic of self-selection suggests that the sample of pro-China firms should consist of firms expecting a larger benefit of such a connection compared to average firms; and similarly self-proclaimed anti-China firms anticipate a milder negative effect of supporting pro-independence parties compared to average firms. This would not automatically bias our estimates of the effects on anti-China firms relative to pro-China ones since the selection would go in the same direction for both groups (i.e. more positive for pro-China and less negative for anti-China). Besides, such an endogeneity issue would be further mitigated by the specifics of Taiwan's politics, i.e. tension-increasing events boost the popularity of anti-China parties (cf. Table A.5 in the Appendix) and thereby increase the likelihood of them being in power – and firms benefit by being connected with the party in power (cf. Table A.6 in the Appendix). Thus, tension-increasing events partially work in favor of anti-

China firms, again tilting towards conservative estimates of the cost of tension. We elaborate on this in section 4.3 where the estimates are discussed.

Finally, with monthly survey data on political tension, the main regression specification is:

$$y_{im} = \beta_1 TensionExpectation_m + FirmControls_{im} + GDP_m + (DPP\ in\ power)_m + \alpha_i + \gamma_1 m + \gamma_2 m^2 + \varepsilon_{im} \quad (3)$$

where the outcome variable is the average daily return of stock i in month m and the main explanatory variable, $TensionExpectation_m$, is constructed from monthly survey data from June 2006 to September 2011. Using public opinion polls conducted by a Taiwanese research center (cf. discussion in section 2.3), we define this month-by-month binary dummy as taking a value of 1 in months in which the Taiwanese public expects the political tension with mainland China to rise over the next month, and 0 otherwise. The identifying assumption here is that the tension expectation measure is exogenous conditional on other controls included in the regressions. This assumption will be violated if an omitted variable correlates with both tension expectations and stock returns, which we partially address by including a wide range of plausible explanatory variables and a quadratic time trend.¹² Specifically, the same set of firm controls is included as before, in addition to the quarterly GDP growth rate (multiplied by 100) and the average stock return under different regimes is filtered out by including a binary dummy ($DPP\ in\ power$) that equals 1 whenever the pro-independence DPP party is in power in Taiwan, and 0 otherwise (in contrast, there is no variation in this variable within any of the event windows in the event-study regressions). Lastly, when exploring heterogeneous effects (similarly to equation 2 above) we interact the variable of interest ($TensionExpectation$) with the political connection of Taiwanese firms, geographical location of Chinese firms, and/or other firm characteristics. The additional identifying assumption becomes similar to the one in the event study, i.e. that a change in tension expectations does not change firms' location or political connection.

4 Empirical results

4.1 Testing H1: Average Effect

Following our conceptual framework (cf. section 2 and Figure 1), we test hypothesis H1 by measuring the average effect of political tension on stock returns. Table 2 presents the results. The table first reports in regressions (1)-(4) the event-study estimates of consequential events harming the political relationship between China and Taiwan (events are detailed in Appendix A). The remainder of the table (regressions 5-8) reports the estimates associated with increases in expected

¹² In principle, we could add higher order functions of time to control for time trends. However, given the sample size and the limited variation in our tension expectation measure, a higher order time trend is likely to absorb all the variation in the tension measure.

future tension levels, as evaluated by public opinion polls among the Taiwanese public. In both the analyses the estimates are reported separately for Taiwanese and Chinese listed firms, where in each case the effect is examined on both the underlying firm sample and the local value-weighted stock index.

Regression (1) in Table 2 reports the first key result of the paper, showing that tension-increasing events are on average associated with a drop in stock returns of 2.03 percentage points for Taiwanese firms, which cumulatively amounts to 4.06 percentage points during the announcement date and the following trading day. The decline is strongly significant and, compared to existing literature, economically large. For example, Berkman, Jacobsen and Lee (2011) use a comparable methodology to ours to study a broader sample of international political crises over 1918-2006 and find a more modest 0.12 percentage points reduction in monthly world stock returns. More related to our study, Fisman, Hamao and Wang (2014) report that the Nikkei 225 Index fell following an adverse shock to Sino-Japanese relations in 2005 by cumulatively 6.1% over the following month (in comparison, our cumulative 20-day effect is -10.9% as discussed below). Lastly, studies focusing exclusively on the effects of violent conflicts document a relatively smaller response. Wolfers and Zitzewitz (2009) estimate a 1.50% decline in U.S. stock price in the run-up of the Iraq invasion in 2003 and Zussman and Zussman (2006) relate assassinations of senior political targets to a 0.71 - 1.11% daily drop in the Israeli stock index. Thus, considering that the underlying events in our sample do not entail any reports of property damage or loss of life (even though they may involve implicit threats thereof), the estimate in regression (1) is comparatively large. The impact of political tension is further verified in regression (2), which reports a strongly significant 1.67 percentage point drop in the value-weighted Taiwanese stock index (TAIEX), or 3.34 percentage points cumulatively over the announcement date and the following trading day. Together with regression (1), this establishes the overall detrimental impact of political tension on Taiwanese firms.

Regressions (3) and (4) in Table 2 repeat this analysis for Chinese firms and find that political tension is costly to Chinese firms as well. On average, each tension event leads to a daily drop of 0.72 – 1.19 (or cumulatively over two days 1.42 - 2.38) percentage points in Chinese stock returns, where the stock index refers to the Shanghai Composite Index of all A-shares. Thus, compared to Taiwanese firms, the impact of a strained cross-strait relationship is statistically weaker and economically more modest for the Chinese sample, which intuitively conforms with the economic and military strength of mainland China vis-à-vis the island of Taiwan. Consistently, the results are both qualitatively and quantitatively similar for the Shenzhen stock index, which covers China's second largest stock market (not reported, but available in Table A.1 in an online appendix).

The second half of Table 2 offers evidence on the negative effects of expected tension on stock returns. The binary dummy (*TensionExpectation*) takes the value of 1 in months in which the Taiwanese public expects the political tension with mainland China to increase over the next month, and 0 otherwise. This variable is available in 2006-2011, and as no major events occur in this period (cf. Appendix A) one may expect a relatively lower impact on stock returns compared with the results of the event study. Overall, despite the methodological differences across the two approaches, the results using survey data align with those of the event study, indicating a negative impact of increased political tension (cf. column 5 reporting a 27 basis points drop in average daily returns among Taiwanese firms in months where expected tension rises, which corresponds to a 27×20 weekdays = 5.4 monthly percentage point drop). As expected, the daily magnitudes are generally lower compared to the event study and the effect is weaker on Chinese firms compared to Taiwanese firms.

In addition to offering supporting evidence to previously established event study results, these results are of interest in their own right as they show the existence of a detrimental effect of expected increases in political tension, even if no major events may realize (as is true for the 2006-2011 period). In other words, these results indicate that ‘day-to-day’ changes in the political climate have a significant economic impact even in relatively politically stable times.

Overall, results in Table 2 offer strong support for hypothesis H1 in that not only do non-violent political events negatively affect stock returns, but so do changes in the political atmosphere that are not accompanied by any particular or concretely defined political events. Thus, the overall cost of political tension is likely to be more extensive and far-reaching than previously documented in the literature.

Cumulative Impact

Before turning to the mechanism through which political tension causes drops in stock returns, we study its cumulative impact and find evidence of a long lasting impact. We apply the standard event-study methodology with a constant mean return model (MacKinley, 1997), where abnormal returns over a [-20,+59] event window are defined as the realized return on each stock minus its average return over the prior 80 weekdays.¹³ Figure 2 reports the cumulative abnormal return (CAR) across all Taiwanese firms. The figure reveals that the immediate impact is quite strong, i.e. around 2.0 to 2.5 percentage points drop per day during the first two days, remarkably consistent with estimates in Table 2 considering the methodological differences. In the following three weeks

¹³ As an alternative approach to predict the normal return, we also estimate a market model following MacKinley (1997) where realized stock returns are regressed on market returns for the preceding time period [-100,-21]. The results are available in Figure A.2 in an online appendix and are similar to those presented in Figure 2. However, for the methodology to be valid, it must be assumed that overall market returns are unaffected by the individual events, which is violated (cf. regression 2 in Table 2).

(until weekday 15), CAR stays relatively stable within the range of -5.0 to -6.8 percentage points. Further drops during days 15-20 lead CAR to reach -10.9 percentage points on day 20, although CAR is measured less precisely as we move further away from the event day.¹⁴ Beyond the first month (weekday 20), the effect is furthermore persistent and long-lasting with no clear sign of immediate reversal. To provide confidence bounds we further regress CAR on 10-day-period dummies to establish the average CAR within each sub-period and the confidence interval thereof. The confidence bounds naturally widen over time as the event date becomes more distant, but the tension effect nonetheless remains significant after 2 months (around 50 weekdays). In summary, the political tension has a sizeable stock market impact, which is also long-lasting.

Lastly, these results suggest that increased political tension has real effects rather than only affecting investor sentiment. More precisely, if the effect is purely sentiment driven and has no impact on the real economy, then the effect would be temporary and prices would soon revert to prior levels reflecting only fundamentals. Alternatively, if political tension has real effects then no immediate return reversal should occur, i.e. the impact of increased political tension would be permanent. As Figure 2 depicts a long-lasting effect without immediate reversal, it suggests real detrimental effects of political tension that are not merely sentiment driven. In section 3.4 this result is further supported with evidence of a disproportionate decline in stock returns among Taiwanese firms economically exposed to mainland China through either exports or mainland investment. This topic is also revisited in section 4.

4.2 Testing H2: Risk of War across Geographical Locations

To test hypothesis H2 on the effect of war risk (cf. Figure 1), we report differential effects by geographical location in regression (1) of Table 3. As previously described in section 3.4, Chinese firms located closer to the island of Taiwan, i.e. in the South-East coastal provinces, are more likely to be influenced by an increased risk of war, compared with those situated elsewhere in mainland China (cf. the map in Appendix B). The results show that the negative impact of political tension is stronger for South-East coastal firms, who experience an additional 27 basis points decline in stock returns per day – or 54 points cumulatively in two days – relative to more distant firms, who are less exposed to military conflict between China and Taiwan. This result is further supported by the analysis of survey data in regression (2).

Additional tests further identify risk of war as the plausible cause for these results. First, it could be argued that Chinese firms close to Taiwan on average do more business with Taiwanese firms,

¹⁴ The sudden drop in CAR on days 0 and 1 and its relative stability on other days provide a justification for our identification assumption. That is, the events cause an unexpected one-time increase in political tension on days 0 and 1, while tension is relatively constant on other days in the [-20, 20] event window. Furthermore, as noted in section 2.6, if tension still builds up after the first two days, our approach provides a lower bound of the actual effect.

thereby explaining this geographical pattern. However, after further controlling for investment and export by Taiwanese firms to industries of the Chinese firm sample, the geographical pattern remains (results are available in Panel A of Table A.3 in an online appendix). Thus, these geographical results cannot be explained by trade links. Second, the effect of geographical proximity dilutes as we consider the next layer of provinces. For example, adding a separate control for the next set of coastal provinces closest to Taiwan (Hainan, Guangxi and Jiangsu) does not return a significant effect on firms located in those areas, which rules out a more general coastal effect (regr. 2 and 5 in Panel B of Table A.3. in an online appendix). Similarly, a control dummy for a broader uninterrupted layer of (inland) provinces (i.e. Hainan, Guangxi, Hunan, Jianxi, Anhui and Jingsu) does not pick up a significant effect, nor does it affect the estimates for the closest coastal provinces (cf. regressions 3 and 6 in Panel B of Table A.3). Simply stated, these results show that the effect of geographical proximity dies out as we move further from Taiwan.

Taken together, the results do not reject hypothesis H2 and suggest that the risk of war in the cross-strait region contributes to the cost of political tension. Furthermore, since mainland China dwarfs Taiwan in terms of military power, this is a particularly notable result. Specifically, despite the relatively lower risk and weaker impact of a Taiwanese attack, Chinese firms are nonetheless adversely affected. Accordingly – although it cannot be established with a similar geographical analysis for the relatively small island of Taiwan – it is reasonable to presume that the threat of military action is even costlier for Taiwanese firms.

4.3 Testing H3: Economic Pressure across Political Connection

We next test hypothesis H3 on targeted economic pressure by exploring firms' political connection. As previously noted, the primary debate across Taiwanese political parties involves the issue of Taiwan independence versus eventual unification with China. Thus, we classify firms as either pro-China (KMT and/or eventual unification supporters) or anti-China (DPP and/or independence supporters) based on party ties or public statements made by senior management, as described in section 3.5 and fully documented in Appendix C. We correspondingly define the binary dummy variable *AntiChina* to take the value of 1 for anti-China firms and 0 for pro-China firms.

The results show heterogeneous effects across political connections of firms, where anti-China firms are on average hurt more by increased political tension. This is presented in Regression (3) in Table 3, which interacts measures of political tension with political party ties (cf. equation 2 in section 2.6). More precisely, anti-China (pro-independence) firms experience an additional 21-basis-point fall in daily stock returns compared with pro-China firms favoring mainland unification. This accumulates to 42 basis points over the course of the announcement day and the following

trading day. The 2006-2011 survey measure of Taiwanese tension expectations produces consistent results, as reported in regression (4).¹⁵

The differential effect across political party ties is both economically and statistically significant. For example, in comparison Acemoglu, Hassan and Tahoun (2014) report that during the 2011 Arab Spring in Egypt a turnout of 500,000 protesters in Cairo on average lowered daily stock returns of firms politically connected to the incumbent party by 80 basis points relative to other firms. Thus our estimated effects are arguably large when considering that the data sample solely contains events absent of property damage, injuries or death (cf. hundreds of casualties during the protests in Egypt). Moreover, for the following two reasons, the estimates in Table 3 are likely to represent a lower bound of the detrimental effect. First, while increased political tension may induce economic pressures targeted towards political opponents of mainland China, it also increases the probability that the Taiwanese pro-independence party comes to (remains in) power. In other words, as political tension rises, so does the probability of having a Taiwanese government that is friendlier towards anti-China firms (defined as those publicly supporting it).¹⁶ As increased political tension thereby also positively affects anti-China firms, the estimates in Table 3 merely represent the *net* effect of these two counteracting channels. Second, since senior management of anti-China firms are likely to be aware of some of the political risks associated with their pro-independence sentiments, they may already have taken measures to dampen any detrimental effects. For example, one can imagine that anti-China firms may already be hedging their political risks by reducing their relative economic exposure to mainland China. Thus, the empirical analysis only picks up the non-hedged effect of political tension, which further implies that the estimates in Table 3 represent a lower bound of the total costs of political tension to anti-China firms.

¹⁵ Furthermore, an extended placebo analysis shows that these results are unique to events harming the cross-strait relationship. Specifically, we repeat the analysis using three events that do not relate to the conflict, i.e. i) the 21 September 1999 earthquake in Taiwan, ii) the 9/11 terrorist attacks in 2001 and iii) increased tension in Japan-Taiwan relations following the 'Lianhe fishing boat incident' on June 10 2008, where a Taiwanese fishing vessel collided with a Japanese patrol vessel in disputed territorial waters claimed by both sides. This placebo event study shows no indication of an amplified negative effect on anti-China firms (in fact, the effect is non-significantly positive), thereby ruling out that the results in Table 3 merely reflect a more general return differential across political parties in times of distress. This analysis is available in Table A.4 of the online appendix.

¹⁶ This is verified in two ways. First, we take the change in the popularity of the two parties (measured by so-called Kuomintang Trust Index and Democratic Progressive Party Trust Index) and regress that on the *TensionExpectation* dummy. The results show that increased tension expectations are associated with a statistically significant increase in support of the DPP pro-independence party in 2006-2011, while support for the KMT decreases. Second, using the events of the presidential election in Taiwan in 2004 (DPP won) and 2008 (DPP lost), we see that DPP winning (losing) the elections is associated with relatively higher (lower) returns of firms politically connected to the DPP. These supplementary results are available in Tables A.5-A.6 in the online appendix.

4.4 Testing H3 & H4: Pressure across Economic Exposure

The More Mainland Exposure of Anti-China Firms, the More They Are Hurt

If the negative effect of supporting Taiwan pro-independence originates from economic pressures, one would expect anti-China firms with high mainland dependence to be more severely affected. This corresponds to Test B of hypothesis H3 (cf. Figure 1).

Taiwanese firms' exports to mainland China is the most direct measure available on mainland exposure. However, firm-level export data is unavailable and likely to be endogenous in any case, since firms may have endogenously chosen export levels by considering the likelihood of being targeted by economic pressure. Instead, data on annual exports by industry to mainland China is obtained from the Taiwanese Bureau of Foreign Trade, where each firm's economic exposure is defined as the total exports of its industry to mainland China (in the calendar year prior to each event), normalized by total exports to all countries during the same period. Using industry averages can further mitigate endogeneity concerns by providing a proxy for the counterfactual export level of politically connected firms in the absence of potential economic and political pressure (after all, the industry averages are taken across all firms, most of which are not politically connected and thus less exposed when choosing their export level). To analyze the relationship between the cost of political tension and export intensity to mainland China, regression (1) in panel A of Table 4 reports the results of interacting this measure with tension events and firms' political party ties.

The results show that an unexpected increase in political tension is not costlier to anti-China firms than to pro-China ones if firms have no exports to mainland China (non-significant coefficient -0.06). This intuitively follows from those firms being less vulnerable to the economic pressures imposed by the mainland, while at the same time these firms may still benefit from the pro-independence party being more likely to take power as tension increases (cf. discussion in section 4.3), resulting in a cancellation of the two counteracting effects. Instead, the negative impact concentrates on anti-China firms with mainland exports (-0.03*). Thus, economic pressures are most severe among anti-China firms that the mainland can most easily target, which provides consistent evidence for hypothesis H3.

Regression (1) in panel A of Table 4 yields three additional results. First, heterogeneous effects by exposure suggest that the drop in stock returns following increased political tension represents a true impact on the real economy, rather than solely a sentiment driven stock price movement. This aligns with the long-lasting effect of increased tension previously established in Figure 2 and is further verified in section 4.¹⁷ Second, the effect on anti-China firms is not a result of potential

¹⁷ One may alternatively argue that investors merely expect Taiwanese exporters supporting pro-independence to be particularly hurt, which in principle is sufficient to drive down stock prices even in the absence of any real effects on

targeted bombing. More exactly, if there was a risk that military actions by mainland China were specifically directed towards their political opponents, then the negative effect of political tension would not be restricted only to those anti-China firms who export to the mainland. This result therefore reinforces the role of economic pressure, underlining that the costs go beyond those attributable to the risk of war. Third, the estimates show that pro-China firms benefit from exporting to China when keeping political tension constant (0.01*), while anti-China firms in the same industry do not enjoy this positive effect (0.01-0.01=0). This indicates that impact on anti-China firms is not merely a result of industry targeting (e.g. targeting industries with many anti-China firms), but is more selective and strategic than that.

The results in regression (1) can be further verified by another measure of mainland exposure, namely the amount of mainland investment undertaken by Taiwanese firms. This measure is motivated by Imai and Shelton (2011), who show that stock prices of Taiwanese firms with mainland investment are sensitive to the electoral outlook of the 2008 Taiwanese presidential elections. However, it should be emphasized that this investment measure captures a different aspect of mainland exposure than exports, as mainland investments may not necessarily translate into goods or services offered to the mainland market (for example, the Taiwanese firm Foxconn has factories in China producing iPhones that are sold not only in China, but worldwide). This investment data is obtained from the Taiwan Stock Exchange and gives the total cumulative investment (without depreciation) in mainland China by all listed firms in a given industry, which we normalize by the total asset value of all listed firms in that industry.

Regression (2) in Table 4 applies this measure of mainland exposure and confirms previous results.¹⁸ As before, among firms without mainland exposure, increased political tension does not adversely affect anti-China firms more than pro-China ones, consistent with non-investing firms being less vulnerable to economic pressures from the mainland. The results further confirm that the extra negative effect on anti-China firms centers entirely on those with mainland exposure (-0.46***). In contrast, for pro-China firms the negative impact of tension is mitigated when having mainland investment (by an amount of 0.16***). This differential effect across political parties increases with the level of mainland investment.

exports. However, it is unlikely that investors hold on to such beliefs for extended periods without any supporting evidence. Indeed, tension between Taiwan and the mainland has created numerous incidences (including the six major events in our paper) from which investors can easily learn and adjust their expectations. It is thus doubtful that investors systematically form erroneous expectations. Besides, real declines in exports following political tension are likely and have been documented in Fuchs and Klann (2011), who show that countries whose leaders met with the Dalai Lama, the exiled Tibetan leader, suffered a swift decline of 8.1% - 16.9% in exports to China.

¹⁸ The investment measure is not available before 1998 (at which time its disclosure became mandatory), but to allow for inclusion of the events occurring in the pre-1998 period, the time-constant average of this measure is applied (explaining why some terms drop out in regressions due to firm fixed effects).

While the above results do not identify whether economic pressures are induced by either the Chinese government or the Chinese public, they nonetheless suggest the former. Specifically, in order for the negative economic impact on anti-China firms to be a consumer reaction, the Chinese public would not only have to be fully aware of the political connections of Taiwanese firms, but also be able to identify those anti-China firms investing in mainland China (which is non-obvious if they are not selling their products in China). This information is more likely to be documented by Chinese government identities that serve to both monitor and react to tensions in the cross-strait conflict. To test this more carefully, we next examine whether the negative impact on anti-China firms is more severe for those offering well-known consumer products to the Chinese public.

It's Not the Consumer, it's the Government

As argued in section 2, to test hypothesis H4 and study whether a reaction of mainland consumers or the mainland government drives the detrimental effect, we examine the stock price effect on firms offering brand name consumer products. The reasoning is that if the detrimental effect is driven by consumer boycotts, we would expect a stronger impact on firms selling branded consumer goods that are more likely recognized as Taiwanese by the mainland public.

Anecdotal evidence suggests that mainland consumer hostility towards Taiwanese businesses occasionally results in boycotts of brand name goods and services, although it is unclear whether this has a sizeable empirical effect (in particular compared to e.g. government blacklisting). To give an example, in 2004 a Taiwanese star-singer (Chang Hui-Mei) sang the national anthem of the Republic of China (Taiwan) at the inauguration of the Taiwanese pro-independence president (Chen Shui-bian). This sparked protests in mainland China and online boycotts were signed to express discontent and warnings that pro-independence artists were not welcome (*BBC*, 2004; *Taipei Times*, 2004b). Following this public response a Taiwanese firm (Tingyi), whose beverage products featured the singer, removed her image from its products. However, it remains unclear whether such consumer reactions are on average detrimental to pro-independence Taiwanese brand name businesses (which would suggest that consumer boycotts drive our empirical results) or if the negative impact is concentrated more broadly on all Taiwanese products offered in the mainland (which would suggest a government response directed at all anti-China firms, regardless of their star-status).

To test whether Taiwanese firms offering brand name products are more adversely affected, we collect additional information to categorize the products of every firm. Two dummy variables, *ConsumerBrand* and *ConsumerNonBrand*, are defined, taking the value of 1 if they belong to the corresponding category and zero if a firm mainly produces business-to-business products. To do this, we first identify consumer-focused firms as those for which the largest fraction of revenue

comes from the sales of consumer products. For each year of operation this information is obtained from firms' annual reports and the Taiwan Stock Exchange, where we allow for the possibility that a firm changes categories over the sample period by using the information in the previous calendar year to determine a firm's category at each point in time. We then further classify consumer focused firms as selling brand name products if they appear in publicly reported lists of the top 100 Taiwanese brands as classified by 'BrandingTaiwan.org', which is a website established by the Taiwanese Bureau of Foreign Trade.¹⁹ This breakdown across product types is shown in regressions (3)-(4) in Table 4. As we explicitly control for both the brand and non-brand consumer dummies in the regression analysis, the underlying benchmark category consists of firms producing business-to-business products.

Focusing solely on the estimates that directly test hypothesis H4 (highlighted in bold), regression (3) reveals that the incremental adverse effect of political tension on anti-China firms is not present among firms exporting business-to-business products (the interaction term *Exposure * AntiChina * TensionEvent* produces a non-significant coefficient of 0.00). The targeted-economic-pressure effect must therefore concentrate on anti-China firms exporting (either brand or non-brand) consumer products. The results indicate that in times of increased tension only non-brand consumer firms with anti-China ties are more adversely affected compared to their pro-China counterparts (-0.12**). More to the point, the results in no way indicate that brand name consumer products are more severely affected in times of political distress (-0.03), implying that the negative impact on anti-China firms is unlikely to be driven by a consumer reaction. Instead, the non-significant impact on brand name exporters rather suggests a government response.

Similar to regression (3), the detailed breakdown for the mainland investment variable is carried out in regression (4). However, it should be re-emphasized that this measure of mainland exposure is silent on whether investment outcomes are actually being offered to the Chinese public or not (cf. iPhone example, where only a fraction of the investment output is offered for retail sale in China). Hence, as the mainland investment variable offers a relatively opaque channel to Chinese consumers, the results cannot offer a fully conclusive interpretation. Keeping this caveat in mind, the key message of regression (4) is again that anti-China firms investing in the production of brand name products are not more severely affected compared to their business-to-business counterparts (0.86).

Lastly, the full analysis is repeated in panel B of Table 4 for the more subtle survey measure of political tension covering the relatively peaceful 2006-2011 sub-period. Perhaps unsurprisingly, this data does not offer enough variation in political tension to identify a differential effect in times of

¹⁹ The top 100 brand names in e.g. 2011 are available at <http://100.brandingtaiwan.org/files/winner.pdf>

distress (cf. non-significant zero coefficients in regressions 1 and 2 of panel B, respectively). A further breakdown in regressions (3)-(4) similarly (and consistently to panel A) does not produce a more negative reaction for anti-China firms exporting or investing in brand name consumer goods.

To summarize, not rejecting hypotheses H3 and H4 in Figure 1 implies that economically exposed and politically connected firms are adversely affected by a strategic and economic response of the opposing government. In practice, the mechanism through which this happens can vary, e.g. ranging from explicit import restrictions (cf. China's salmon dispute with Norway) to indirect regulations or restraints (e.g. sanity issues raised with bananas from Philippines). According to the chairman of the 'Taiwan Businesspeople Association', other measures include stricter tax inspection, cutting down on loans available for Taiwanese business people and launching cumbersome investigations into their personal background and affiliations (*Taipei Times*, 2004b). The results of this paper align with such anecdotal evidence and additionally support existing research on the political tactics of mainland China. Most notably, Fisman, Hamao and Wang (2014) study the impact of recent adverse shocks to the Sino-Japanese relationship and similarly find that Japanese firms with high Chinese exposure suffer disproportionate declines in stock returns. They also show that the effect on Japanese firms is concentrated in industries competing with Chinese state-owned enterprises, which suggests that the economic cost of political tension originates from government-induced restrictions that damage the competitive environment of Japanese firms.²⁰

5 Additional Results: Cash flows, risk premia & uncertainty shocks

5.1 Cash flow or risk premia?

Given the detrimental stock market effect of political tension, a natural question to ask is whether this is due to a reduction in expected cash flows of firms or because it leads to higher risk premia. Although the data does not allow for fully disentangling the two, this section provides indicative evidence by studying outcome variables other than stock returns.

Investment and foreign sales

A challenge in such an analysis is the both the lack of data (e.g. no firm-level export data is available) and the general paucity of accounting and cash flow figures. However, to gauge at long-term trends around tension events we regress i) accumulative investment in mainland China and ii)

²⁰ Moreover, the Sino-Japanese relationship has been more strongly characterized by consumer hostility than the Chinese-Taiwanese one. To exemplify this, as of November 25, 2012, a search on Google.com using the key words 'boycott' and 'Taiwanese products' (*dizhi taiwan huo*) in simplified Chinese, gives 4.25 million hits, whereas combining the words 'boycott' and 'Japanese products' (*dizhi rihuo*) results in 10.2 million hits. Thus, considering that research shows no indication that Chinese consumers systematically boycott Japanese products, it is non-surprising that the same applies to Taiwanese products.

foreign sales of Taiwanese firms on quarterly/annual dummies and plot the corresponding dummy coefficients. More specifically, we run

$$y_{ite} = \sum_{k=-T}^T \beta_k D_{kte} + \sum_{k=-T}^T \delta_k (D_{kte} \times AntiChina_i) + FirmControls_{ite} + \alpha_i + \gamma_e + \varepsilon_{ite} \quad (4)$$

where y_{ite} is either (change in) quarterly investment in mainland China or (change in) annual foreign sales. Corresponding to the data frequency, the variable D_{kte} is either quarterly or annual time dummies (equals one if $k=t$, zero otherwise). Time $t=0$ is the time period including the event date of event e , while changes in an outcome variable in period t are measured as the increase/decrease from its level in period t and to that in $t+1$. Other variables are defined as before. The quarterly/annual coefficient estimates are plotted in Figure 3 and show the evolution of investment and foreign sales two years before and after the tension increasing events (for full regression results see Table A.7 in the online appendix).

First, Figure 3 reveals a break in the trend of mainland investment among anti-China firms following increased tension in the cross-strait relationship. In contrast to pro-China firms, where mainland investment continues to accumulate at a steady rate, anti-China firms reduce mainland investment following increased tension and then follow a more modest trend thereafter. The same applies to foreign sales, where pro-China firms experience relatively steady growth compared to the fast-paced growth in foreign sales among anti-China firms, which then suddenly halts as tension increases. Taken together, these results suggest a fundamental and persistent effect of political tension. The observed breaks are also apparent when regressing changes in investment (foreign sales) on quarterly (annual) dummies and plotting the coefficient differences among the two politically connected groups in the latter half of Figure 3 (where estimates at $t=0$ denote the change between period 0 and 1). Both mainland investments and foreign sales drop as tension increases at $t=0$, where the drop in foreign sales is statistically significant at the 5% level (reported in regression 4 in Table A.7 in the online appendix).

Effects by industry

The above results suggest that the previously documented drop in stock prices reflects (at least partially) a reduction in expected cash flows. As further suggestive evidence of this, we study the stock market reaction of firms in industries with particularly high international exposure. As the manufacturing industry has the highest ratio of foreign sales to total sales among all industries in Taiwan (26.8%), we rerun the benchmark regressions equations (1) and (2) with an added manufacturing dummy. This reveals that manufacturing firms suffer a greater stock return loss relative to other firms, as reported in regression (1) in Table 5 (this does not hold for other less

exposed industries, not reported). Moreover, breaking the results down across political connections, regression (2) in Table 5 reveals that this industry effect concentrates fully on anti-China firms. These results are consistent with there being a link between the stock market response and the documented cash flow effects.

5.2 Risk premia

In addition, the detrimental stock market effect may not only relate to reduced cash flows, but also be due to higher risk premia. To investigate this we collect yields-to-maturity on five-year Taiwanese sovereign bonds and regress those yields on our tension increasing event dummies. If increased political tension in the cross-strait relationship demands a higher risk premium this should be reflected in lowered demand for Taiwanese government bonds, which would lower government bond prices and increase yields. Consistently, regression (3) in Table 5 reveals that Taiwanese government bond yields rise by 0.86% during months of increased political tension with mainland China.²¹ We therefore conclude that the detrimental stock market effect documented in previous sections is likely to be explained by both a reduction in expected cash flows and higher risk premia.

5.3 Theoretical predictions on impact of uncertainty shocks

The overall results of our paper indicate that increased political tension has both real and financial effects. This aligns with recent literature studying the impact of uncertainty shocks. In a seminal paper, Bloom (2009) offers a structural framework to analyze the impact of these uncertainty shocks, after observing that uncertainty appears to jump after major shocks like the Cuban Missile crisis and the assassination of John F. Kennedy. Baker and Bloom (2013) and Bloom et al. (2012) further show that uncertainty shocks can drive business cycles and significantly reduce GDP. Among the sources of uncertainty shocks, political/policy uncertainty is an important one. For example, Baker, Bloom and Davis (2012) find that increases in economic policy uncertainty foreshadow declines in output, employment and – consistent with our results – investment. Julio and Yook (2012, 2014) also empirically show that firms tend reduce investment as political uncertainty increases in election years – and the effect is more pronounced for foreign direct investment. More related, the impact of uncertainty shocks originating from political government actions has been examined on financial markets. For example, Kelly, Pastor and Veronesi (2014) study the option market to estimate the protection value against political risk, finding that options whose lives span political events (elections and global summits) tend to be more expensive, in particular amid higher political uncertainty.

²¹ Simultaneously, stockholders are likely to shift to relatively safer government bonds, which raises bond prices and lower yields. Thus, the estimation picks up the net effect of these two counter-acting responses, implying that 0.86% represents a lower bound of the risk premia increase.

As a final exercise – and as a direct relation of our paper to existing work on (political) uncertainty shocks – we empirically test the theoretical predictions of Pastor and Veronesi (2013) who model stock market reactions to signals on future government actions. The model makes several testable predictions, most notably that political uncertainty should associate with i) higher risk premia, ii) more volatility and iii) higher stock return correlation.²²

First, consistent with Pastor and Veronesi (2013) our results indicate that increased political tension results in higher risk premia (cf. previously described regression 3 in Table 5). Second, regression (4) in Table 5 reports the relationship between increased tension and stock volatility, measured as standard deviation of returns over the past 20 weekdays. Volatility rises with tension and the effect amplifies for anti-China firms, but neither coefficient is statistically significant. Third, in regression (5) value-weighted average percentage correlation is calculated within every 20 weekday period and regressed on tension event dummies. The results show increased correlation among stocks in times of tension (non-significant) and the effect is stronger for anti-China firms (5.19*). Thus, it appears that loadings on the government variable (tension) differ across political connections. Overall, we conclude that our results are consistent with the theoretical predictions of Pastor and Veronesi (2013).

6 Concluding remarks

In this paper we study the economic cost of relatively ‘soft’ political tension by examining the dispute between Taiwan and mainland China. This is among the first papers to study the cost of non-violent political tension and to identify the channels through which firms are affected. We show that this cost is not only limited to significant escalation in tension caused by consequential events, but it is also substantial even when the expected tension mildly varies, which has not been previously established in the literature.

In other words, the paper reveals that the cost of political tension is more comprehensive than previously documented. First, even non-violent and relatively mild political tension is associated with a sizeable drop in the stock market. Second, not only do realized distress events strongly affect stock returns, but increases in expected future tension levels are also associated with declines in present stock returns. Third, the negative stock market impact is not solely driven by threat of violence, but is supplemented by economic penalties targeted at selected businesses. These financial costs, which are both centrally organized and politically strategic, are shown to have significantly

²² Pastor and Veronesi (2013) provide two additional predictions, i.e. that i) political uncertainty should be higher when economic conditions are worse and ii) the effects of political uncertainty on risk premia, volatility and correlation should be stronger in a weaker economy. These two predictions are not testable within our framework since our tension increasing events never occur in a weak economic state (the GDP growth ranges from 4.7% to 6.4% during our event windows).

damaging and long-lasting effects. Lastly, this detrimental stock market effect associates with both a reduction in expected cash flows (investment and sales) and higher risk premia. While the focus of our paper is on Taiwan and mainland China, there is reason to believe that the results apply to a broader set of highly tense, yet non-violent, political disputes worldwide. In support of this, a small body of cross-country literature associates political crisis risk with adverse stock market outcomes (Diamonte, Liew and Steven, 1996; Berkman, Jacobsen and Lee, 2011). Hence, empirically documenting the sizeable distress costs in the absence of physical confrontation has wider implications, since this characterizes the majority of international political conflicts. Furthermore, demonstrations and political unrest in democratic countries as are similarly unlikely to generate an outright war, but they could be related to volatile stock prices and economic pressure on political opponents.

The results of the paper are inevitably of interest given the growing worldwide influence and economic muscle of China (and other autocratic emerging countries). Evidence indicates that mainland China uses this to its advantage by directly targeting Taiwanese political opponents that are economically exposed to the mainland. Our econometric analysis thereby supports the more casual observation that China systematically punishes their political adversaries. The analysis further reveals that these economic penalties do not stem from consumer boycotts of well-known products, but are rather initiated by the Chinese authorities.

Such strategic targeting of political opponents, who are not directly under the control of the Chinese government, raises questions about the government's effectiveness in promoting its political views. On the one hand, fewer Taiwanese firms have become anti-China as they have abandoned their open pro-independence stand (cf. footnote 9). On the other hand, when tension increases, the public popularity of the pro-independence parties in Taiwan increases (cf. Table A.5), consistent with the effects of violence on public opinions (Jaeger et. al., 2012). These differential effects on firms vis-à-vis the public were also observed in the 2014 Hong Kong protests. Although the pro-democracy goals mobilized hundreds of thousands of protesters, the involvement of public figures such as firm executives was rather limited (*The New York Times*, 2014). Our results on the economic costs of political tension therefore call for further investigation to better understand its associated political consequences.

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Figure 1. Framework for Analyzing the Cost of Political Tension

The figure outlines the key hypotheses tested in the paper and simultaneously gives an overview of the progression through which the paper proceeds. Brief descriptions of the accompanying tests are given for each hypothesis and a reference to the corresponding sections of the paper.

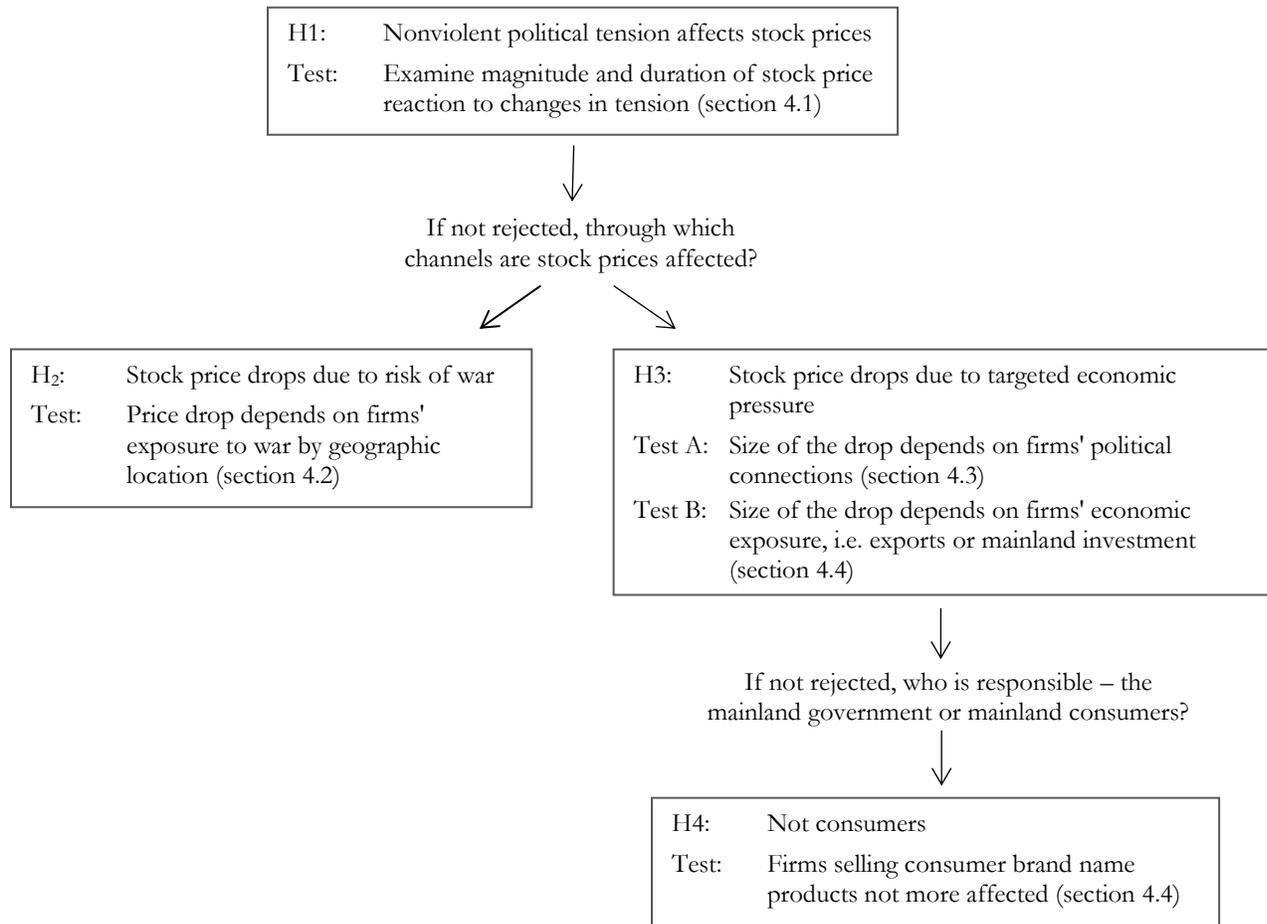


Figure 2. Cumulative Abnormal Returns

The graph presents the evolution of cumulative abnormal returns (CAR) for Taiwanese stocks during the pooled event window of all events. The abnormal return is calculated as the realized return beyond the average return during the 80 weekdays prior to the event window, i.e. days [-100, -21]. This calculation of returns is at the firm-event level, i.e. for each firm in each event we calculate a different normal return based the average return during the estimation window. The confidence intervals are established around 10-day average CARs, which are obtained by regressing CAR on period dummies (one for each interval [-20, -11], [-10, -1], ... , [50, 59]) and estimating firm-day clustered standard errors thereof. When calculating the confidence intervals we assume that normal returns are estimated without error, cf. MacKinley (1997). Detailed regression results are available in an online appendix (Table A.2).

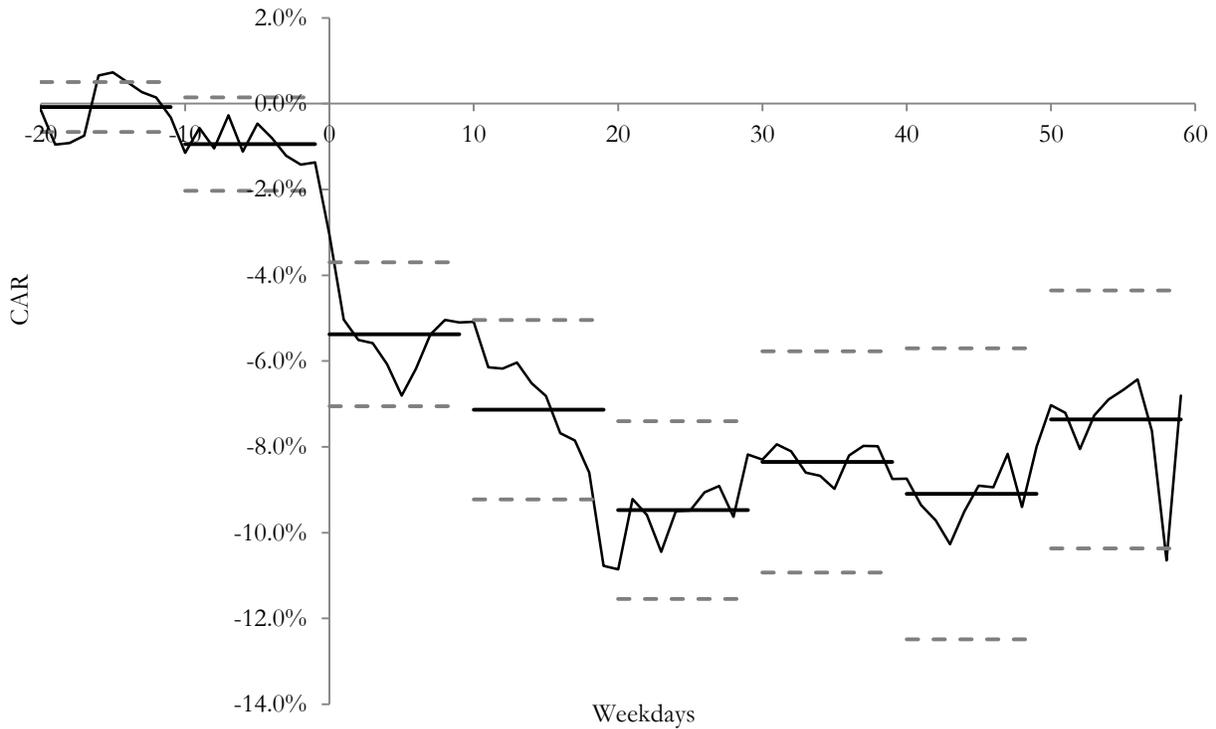
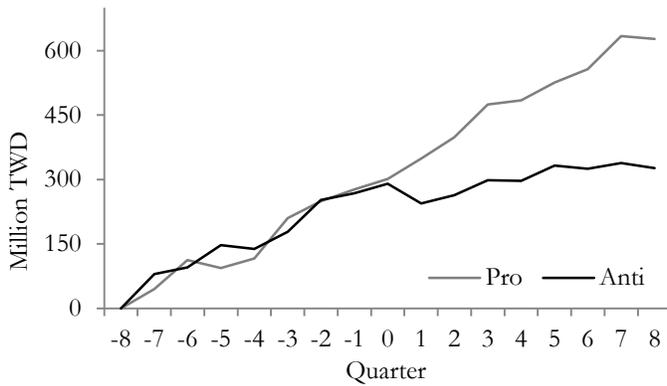


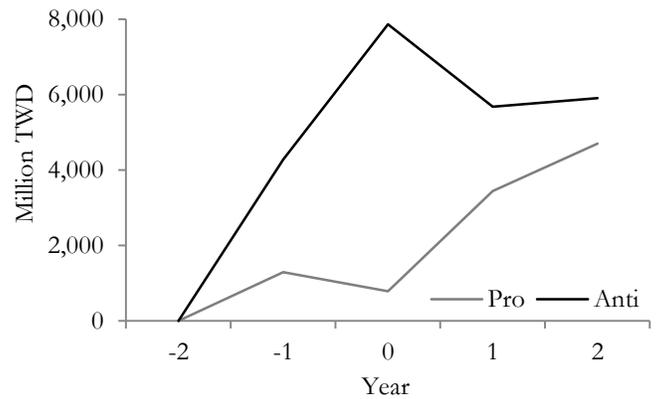
Figure 3. Mainland Investment and Foreign Sales

The figure displays time dummy estimates from the regression $y_{it} = \beta_1 D_t + \beta_2 (D_t \times \text{Anti-China}_i) + \text{FirmControls}_{it} + a_i + \varepsilon_{it}$, where y is either (change in) accumulative mainland investment or (change in) foreign sales of Taiwanese firms in millions of Taiwanese dollars. Time is measured quarterly (for mainland investment) or annually (for foreign sales). The coefficient value from which the figure is drawn are detailed in the regression output of Table A.7 in an online appendix. The sample period is quarter -8 to quarter +8 (year -2 to year +2) surrounding event dates. Quarter/Year 0 is the time period including the event date of event e , while changes in an outcome variable in period t are measured as the increase/decrease from its level in period t and to that in $t+1$.

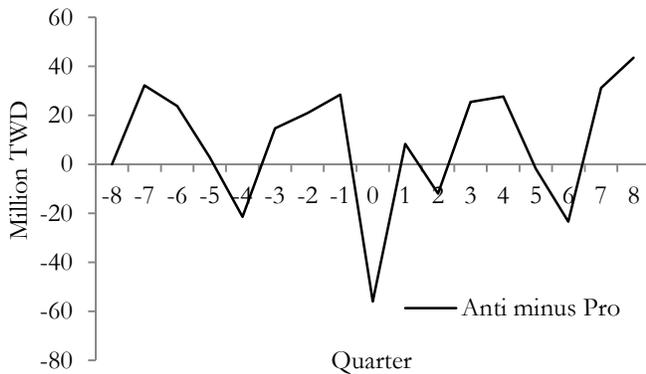
Mainland investment



Foreign sales



Change in mainland investment



Change in foreign sales

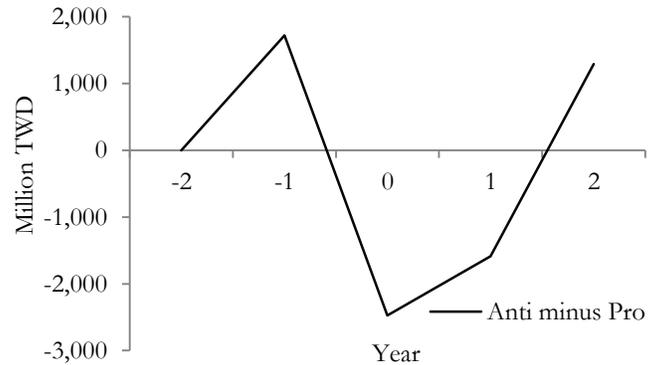


Table 1. Summary Statistics

The table reports means of key variables with standard deviations in parenthesis. The event study data consists of the 20 weekdays before and after each event. The survey data is available at a monthly frequency (i.e. average daily returns within each month). Anti- and pro-China firms are those supporting Taiwan independence or mainland integration, respectively. Chinese coastal firms are those located in the South-East coastal areas of China (cf. Appendix B). Index returns represent the TAIEX and Shanghai composite stock indexes. Assets are reported in inflation adjusted (1998 base year) local currency, leverage is debt proportional to equity and return on assets is net income relative to total assets. Firm betas are obtained by regressing daily stock returns of each firm on a constant and the corresponding stock index return (Taiwan, Shanghai or Shenzhen) for the time period [-100, -20] prior to each of the six tension increasing events (i.e. six beta estimates for each firm). Exports to mainland China and cumulative mainland investment are at the industry level (the latter is only available since 1998). The data is winsorized at the 1st and 99th percentiles.

Panel A: Data for event study, 1995-2006

	Taiwan			China		
	All firms	Anti-China	Pro-China	All firms	Coast	Non-Coast
Number of firms	679	27	40	1,314	399	915
Daily index return (%)	-0.17 (1.54)			0.13 (1.68)		
Daily sample return (%)	-0.20 (2.62)	-0.19 (2.49)	-0.21 (2.58)	0.05 (2.56)	0.05 (2.56)	0.05 (2.56)
Assets (billions)	42.01 (139.89)	145.58 (332.54)	86.61 (192.76)	2.90 (7.10)	3.54 (8.76)	2.59 (6.12)
Leverage	0.37 (0.38)	0.28 (0.34)	0.38 (0.38)	0.47 (0.43)	0.47 (0.43)	0.47 (0.43)
Return on assets	0.04 (0.08)	0.03 (0.06)	0.04 (0.06)	0.02 (0.07)	0.02 (0.07)	0.02 (0.07)
Beta	0.85 (0.49)	0.81 (0.43)	0.85 (0.66)	1.08 (0.40)	1.05 (0.37)	1.10 (0.41)
Mainland exports / Total exports (%)	8.04 (11.67)					
Mainland investm. / Total assets (%)	2.38 (2.20)					

Panel B: Data for survey regressions, 2006-2011

	Taiwan			China		
	All firms	Anti-China	Pro-China	All firms	Coast	Non-Coast
Number of firms	766	28	41	1,566	510	1,056
Monthly (avg. daily) index ret. (%)	0.005 (0.37)			0.04 (0.41)		
Monthly (avg. daily) sample ret. (%)	0.002 (0.63)	0.004 (0.60)	0.002 (0.60)	0.07 (0.75)	0.06 (0.73)	0.07 (0.75)
Assets (billions)	55.61 (204.82)	260.29 (552.81)	139.09 (323.08)	6.67 (30.13)	7.16 (31.26)	6.43 (29.58)
Leverage	0.33 (0.39)	0.20 (0.28)	0.36 (0.37)	0.47 (0.44)	0.43 (0.43)	0.48 (0.45)
Return on assets	0.04 (0.07)	0.03 (0.06)	0.03 (0.08)	0.03 (0.06)	0.04 (0.05)	0.02 (0.07)
Beta	0.88 (0.45)	0.91 (0.46)	0.96 (0.44)	1.07 (0.65)	1.06 (0.89)	1.07 (0.50)
Mainland exports / Total exports (%)	17.88 (14.99)					
Mainland investm. / Total assets (%)	3.38 (2.33)					

Table 2. Political Tension and Average Returns

This table presents results from regressions equations (1) and (3) outlined in section 2.6, where the dependent variable is daily percentage returns in columns (1)-(4) and average daily percentage return within the month in columns (5)-(8). The event data consists of the 20 weekdays before and after each event, where the dummy *TensionEvent* takes value 1 on announcement days and the trading day that follows, and 0 otherwise. Monthly survey data is available 2006-2011 and the dummy variable *TensionExpectation* takes value of 1 in months when political tension is expected to increase over the next month, and 0 otherwise. The GDP variable corresponds to the quarterly GDP growth rate in percentages of the corresponding region (Taiwan or mainland China). The dummy *DPP in power* that takes value one when the pro-independence party is in power in Taiwan, and zero otherwise. Other control variables are as defined in Table 1. Event study regressions include period fixed effects filtering out average return within each event window. Two-way clustered standard errors (clustering on firm-day) are reported in firm level regressions (1), (3), (5) and (7). Standard errors robust to autocorrelation are reported in index regressions (2), (4), (6) and (8). Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

	Event study				Survey data			
	Daily stock returns (%)				Average daily returns within month (%)			
	Taiwanese firms		Chinese firms		Taiwanese firms		Chinese firms	
	(1) Firm sample	(2) Stock index	(3) Firm sample	(4) Stock index	(5) Firm sample	(6) Stock index	(7) Firm sample	(8) Stock index
TensionEvent	-2.03*** (0.71)	- 1.67*** (0.33)	-0.72** (0.36)	- 1.19** (0.58)	-0.27*** (0.10)	-0.24** (0.12)	-0.01 (0.14)	-0.14* (0.08)
TensionExpectation								
Ln(Total Assets)	-0.01 (0.04)		-0.03 (0.04)		-0.01 (0.05)		0.00 (0.03)	
Leverage	-0.01 (0.07)		0.04 (0.03)		-0.08** (0.04)		0.01 (0.02)	
Return on Assets	1.95*** (0.34)		0.55*** (0.20)		0.89*** (0.30)		0.39*** (0.11)	
Beta	-0.11 (0.07)		-0.02 (0.03)		-0.01 (0.04)		-0.03 (0.03)	
GDP					0.04 (0.02)	0.03* (0.02)	0.44 (0.28)	0.46** (0.20)
DPP in power					0.08 (0.31)	0.13 (0.11)	-0.12 (0.46)	- 0.44** (0.20)
Number of obs.	91,203	233	166,425	230	45,379	63	90,410	63
Number of firms	677	-	1,314	-	761	-	1,565	-
Period fixed effects	Yes	Yes	Yes	Yes	-	-	-	-
2nd order time trend	-	-	-	-	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	-	Yes	-	Yes	-	Yes	-
R ²	0.04	0.07	0.01	0.05	0.09	0.18	0.04	0.13

Table 3. Tension Costs: Risk of War and Economic Pressure

This table presents results from linear regressions estimating the effect of political tension across geographical locations and political connections of firms (cf. regression equation (2) in section 2.6 for the event study and equation (3) for the survey data). The sample period, dependent variable and measures of tension are as defined in Table 2. In columns (2) and (4), the outcome variable is the average daily stock return within the month. The *SouthEast* dummy takes value 1 for firms located in the South-East coastal regions close to Taiwan, and 0 otherwise (cf. Appendix B). The *AntiChina* dummy variable takes value 1 for firms supporting Taiwan independence and 0 for firms supporting mainland integration. Due to firm fixed effects these time-constant dummies drop out when not interacted with political tension measures. Control variables are as defined in Tables 1 and 2. Two-way (time-firm) clustered standard errors are reported in parenthesis. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

Outcome variable: (Average) Daily Stock Returns in %				
	Risk of war (Chinese firms)		Economic pressure (Taiwanese firms)	
	(1)	(2)	(3)	(4)
	Event study	Survey data	Event study	Survey data
TensionEvent	-0.63* (0.36)		-1.69** (0.65)	
TensionExpectation		0.00 (0.14)		-0.28*** (0.09)
SouthEast * TensionEvent	-0.27* (0.14)			
SouthEast * TensionExpectation		-0.03** (0.01)		
AntiChina * TensionEvent			-0.21** (0.11)	
AntiChina * TensionExpectation				-0.06* (0.03)
Ln(Total Assets)	-0.03 (0.04)	0.00 (0.03)	-0.02 (0.07)	0.07 (0.06)
Leverage	0.04 (0.03)	0.01 (0.02)	0.06 (0.09)	-0.20*** (0.05)
Return on Assets	0.55*** (0.20)	0.39*** (0.11)	1.96* (1.02)	0.98*** (0.36)
Beta	-0.02 (0.03)	-0.03 (0.03)	-0.19 (0.14)	0.01 (0.04)
GDP		0.44 (0.28)		0.03 (0.02)
DPP in power		-0.12 (0.46)		0.14 (0.27)
Number of obs.	166,425	90,410	10,126	4,280
Number of firms	1,314	1,565	67	69
Period fixed effects	Yes	-	Yes	-
2nd order time trend	-	Yes	-	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
R ²	0.01	0.04	0.03	0.10

Table 4. The Channel of Economic Pressure

This table presents results from linear regressions estimating the effect of political tension across political connections and economic mainland exposure of Taiwanese firms. The sample period, dependent variable, measures of tension and political views (*AntiChina*) are as defined in Tables 2-3. Mainland exposure (*Exposure*) is defined either as i) total exports of each firm's industry to mainland China (in the previous calendar year) normalized by the total exports to all countries, or as ii) cumulative investment (without depreciation) in mainland China of each firm's industry normalized by the total asset value of that industry. Both measures are in percentage terms. Since the investment variable is unavailable prior to 1998 we apply the time constant average thereof, leaving it unreported due to the fixed effects. Consumer focused firms are classified as those for which the largest fraction of revenue comes from the sales of consumer products, which we further categorize as brand name retailers if they rank among the top 100 Taiwanese brands on brandingtaiwan.org. All regressions include the same control variables as previously applied in Tables 2-3 (log-assets, leverage, ROA, GDP and DPP in power). Also, the (interactions of) dummies ConsumerBrand, ConsumerBrand * AntiChina, ConsumerNonBrand, ConsumerNonBrand * AntiChina are all included in the regressions but not reported to conserve space. Two-way (time-firm) clustered standard errors are reported in parenthesis. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

Panel A: Event study

Outcome variable: Daily Stock Returns in %

	Mainland Exposure		Consumer Brand Names	
	(1) Exports	(2) Investment	(3) Exports	(4) Investment
TensionEvent	-1.90*** (0.71)	-2.06*** (0.67)	-2.04** (0.86)	-2.49*** (0.75)
AntiChina * TensionEvent	-0.06 (0.10)	0.56 (0.36)	-0.13 (0.46)	0.38 (0.36)
Exposure	0.01* (0.00)		0.01** (0.00)	
Exposure * TensionEvent	0.04 (0.03)	0.16*** (0.03)	0.02 (0.03)	0.31* (0.18)
Exposure * AntiChina	-0.01*** (0.00)		- (0.00)	0.01*** (0.00)
Exposure * AntiChina * TensionEvent	-0.03* (0.02)	-0.46*** (0.09)	0.00 (0.00)	-0.24 (0.28)
ConsumerBrand * TensionEvent			-0.19 (0.43)	0.26 (0.54)
ConsumerBrand * AntiChina * TensionEvent			- 2.57*** (0.77)	-3.37 (7.51)
ConsumerBrand * Exposure			-0.01* (0.01)	
ConsumerBrand * Exposure * TensionEvent			0.09*** (0.03)	-0.15 (0.14)
ConsumerBrand * Exposure * AntiChina			-0.02 (0.01)	
ConsumerBrand * Exposure * AntiChina * TensionEvent			-0.03 (0.03)	0.86 (3.19)
ConsumerNonBrand * TensionEvent			0.28 (0.59)	1.35*** (0.37)
ConsumerNonBrand * AntiChina * TensionEvent			0.46*** (0.12)	-0.43 (0.52)
ConsumerNonBrand * Exposure			- 0.04*** (0.01)	-0.04 (0.09)
ConsumerNonBrand * Exposure * TensionEvent			0.19*** (0.07)	-0.33* (0.17)
ConsumerNonBrand * Exposure * AntiChina			0.05** (0.02)	0.15 (0.13)
ConsumerNonBrand * Exposure * AntiChina * TensionEvent			-0.12** (0.06)	-0.18 (0.36)
Number of observations	10,126	10,126	10,126	10,126
Number of firms	67	67	67	67
Period fixed effect	Yes	Yes	Yes	Yes
2 nd order time trend	-	-	-	-
Firm fixed effect	Yes	Yes	Yes	Yes
R ²	0.04	0.03	0.04	0.04

Panel B: Survey data

Outcome variable: Average Daily Stock Returns within the Month in %

	Mainland Exposure		Consumer Brand Names	
	(1)	(2)	(3)	(4)
	Exports	Investment	Exports	Investment
TensionExpectation	-0.28*** (0.09)	-0.33*** (0.09)	-0.37*** (0.10)	-0.40*** (0.11)
AntiChina * TensionExpectation	-0.07 (0.05)	-0.04 (0.06)	0.00 (0.05)	-0.03 (0.05)
Exposure	-0.02*** (0.01)		-0.03** (0.01)	
Exposure * TensionExpectation	0.00 (0.00)	0.02 (0.01)	0.004** (0.002)	0.03* (0.02)
Exposure * AntiChina	0.02** (0.01)		0.02** (0.01)	
Exposure * AntiChina * TensionExpectation	0.00 (0.00)	0.00 (0.02)	-0.00 (0.00)	0.00 (0.02)
ConsumerBrand * TensionExpectation			0.42*** (0.12)	0.27** (0.13)
ConsumerBrand * AntiChina * TensionExpectation			-0.18 (0.36)	-0.38 (0.74)
ConsumerBrand * Exposure			0.03* (0.01)	-0.01 (0.05)
ConsumerBrand * Exposure * TensionExpectation			-0.02*** (0.01)	-0.04*** (0.01)
ConsumerBrand * Exposure * AntiChina			-0.06*** (0.01)	
ConsumerBrand * Exposure * AntiChina * TensionExp.			0.01*** (0.0004)	0.10 (0.19)
ConsumerNonBrand * TensionExpectation			0.17** (0.08)	0.20* (0.10)
ConsumerNonBrand * AntiChina * TensionExpectation			-0.14 (0.09)	-0.09 (0.10)
ConsumerNonBrand * Exposure			0.00 (0.01)	0.01 (0.05)
ConsumerNonBrand * Exposure * TensionExpectation			-0.01** (0.004)	-0.05 (0.03)
ConsumerNonBrand * Exposure * AntiChina			0.01 (0.02)	0.06 (0.06)
ConsumerNonBrand * Exposure * AntiChina * TensionExp.			0.01 (0.01)	-0.02 (0.06)
Observations	4,280	4,280	4,280	4,280
Number of id	69	69	69	69
Period fixed effect	-	-	-	-
2 nd order time trend	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
R ²	0.11	0.10	0.11	0.11

Table 5. Further Results: Industry Effects and Testing Theory

This table first reports the effect of political tension on manufacturing firms (who have relatively high international exposure through foreign sales) and, second, tests the theoretical predictions made by Pastor and Veronesi (2013). In regression (3) the dependent variable is percentage changes in yield-to-maturity on 5 year Taiwanese government bonds. The results are drawn from monthly data that is available back to 1999, and thus exclude the first two tension events. In regression (4) volatility is measured as standard deviation of returns over the past 20 weekdays. In regression (5) we use the value-weighted average correlation for the anti- and pro-China samples respectively, where correlation is calculated for each firm-pair within every 20 weekdays (for each group, so two observations for each 20 weekday period). Correlation is reported in percentages and we allow correlation to be different across the two groups (by including an anti-China dummy, not reported). In regression (4) and (5) the event dummy equals one for one month, i.e. $t=0$ that corresponds to weekdays 2-21. Due to unusual stock price movements (cf. Figure 2), regressions (4) and (5) exclude the event day and the following trading day from the sample.

	(1) Stock returns	(2) Stock returns	(3) Δ Bond yield	(4) Volatility	(5) Correlation
TensionEvent	-1.81** (0.70)	-1.91*** (0.65)	0.86* (0.48)	0.09 (0.17)	3.39 (5.45)
Manufacturing*TensionEvent	-0.29*** (0.11)	0.28 (0.29)			
AntiChina*TensionEvent		0.37 (0.28)		0.03 (0.02)	5.19* (2.93)
AntiChina*Manufacturing*TensionEvent		-1.07*** (0.32)			
Ln(Total Assets)	-0.01 (0.04)	-0.02 (0.07)			
Leverage	-0.01 (0.07)	0.06 (0.09)			
Return on Assets	1.95*** (0.34)	1.96* (1.02)			
Beta	-0.11 (0.07)	-0.19 (0.14)			
Number of obs.	91,203	10,126	125	4,003	156
Number of firms	677	67	-	67	-
Period fixed effects	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	-	Yes	-
R-squared	0.04	0.03	0.12	0.39	0.45

Appendix A. Events

The table outlines the major events that are used in the event study analysis. These events are compiled from Crisis Watch reports provided by the International Crisis Group and from the Chinese-language Wikipedia page “The Timeline of Cross-Strait Relations.” Both sources list news articles reporting on each event and we provide examples of these references in the last column of the table.

Date	Event	Description	Detailed reference
July 18, 1995	1995-96 Taiwan Strait Crisis	After a speech made by Lee Teng-hui, president of the Republic of China (Taiwan), on “Taiwan's Democratization Experience”, the People’s Republic of China (mainland China) states that Lee harbors pro-Taiwan independence sentiments and is therefore a threat to stability in the region. Simultaneously, it is announced that China’s military will launch missile tests and fire ground-to-ground missiles from July 21 to 28 on the high seas of the East China Sea.	China's official Xinhua News Agency (18 July) and The New York Times (21 July, “Chinese Missile Tests Seen as Intimidation”).
March 5, 1996	Taiwan's First Presidential Election	Beijing intended to intimidate the Taiwanese electorate from voting for Lee Teng-hui in the 1996 presidential election and therefore, on March 5 1996, China's official Xinhua News Agency announced that the People's Liberation Army would stage a new series of missile exercises just off Taiwan's coast from March 8 to 15.	China's official Xinhua News Agency (March 5) and CNN (March 8, “Nations Condemn Chinese Missile Tests”).
July 10, 1999	“Special State to State”	In his Deutsche Welle interview, Taiwan’s president Lee Teng-hui defined the Taiwan's relations with mainland China as “Special State to State”, implicitly implying that Taiwan and China are separate countries. China reacts furiously as it considers Taiwan a renegade province and the comment breaks from the long-standing ‘one China’ policy.	Reuters (July 12, “Taiwan Says Junking ‘One China’ Doctrine”).
August 3, 2002	“One Country on Each Side”	The concept of “One Country on Each Side” is espoused by Chen Shui-bian, the President of the Republic of China, regarding the political status of Taiwan, emphasizing that the People's Republic of China and Taiwan are two different countries (namely “one China, one Taiwan”), as opposed to two separate political entities within the same country of “China”.	BBC News World Edition (August 3, “Taiwan Head Backs Independence Poll”).
March 14, 2005	The Anti-Secession Law	The Anti-Secession Law is a law of the People's Republic of China. It formalized the long-standing policy of the People's Republic of China to use “non-peaceful means” against the “Taiwan independence movement” in the event of a declaration of Taiwan independence. The law was announced and simultaneously passed on March 14 (without any discussion, as is typically the case in mainland China).	Washington Post (March 14, “China Puts Threat to Taiwan into Law”).
February 27, 2006	National Unification Council Ceasing to Function	Tension rose between Beijing and Taipei after Taiwan President Chen Shui-bian announced on February 27 that the National Unification Council and its guidelines would cease to function. The move brought condemnation from Beijing that called Chen a troublemaker and saboteur.	The New York Times (February 28, “Taiwan’s Leader Defies Beijing’s Warnings”).

Appendix B: Geographical Location

The map shows the provinces of China, where those geographically closest to Taiwan are highlighted in grey. These are the provinces of Fujian, Guangdong, and Zhejiang, and the municipality of Shanghai. Firm location is based on firms' headquarter as stated in their financial accounts data obtained through Thomson Financial.



Appendix C: Political Connection

The table lists the set of politically connected Taiwanese firms, where the classification is based on online search criteria detailed fully in section 2.5. The names are transcribed from Chinese into Latin scripts by the pinyin system and other commonly used names are also provided. It should be stressed that each classification has at least two sources, but for brevity only one of these is reported in the table. Also, direct web links are in some cases suppressed only to conserve space (e.g. in the cases where room is reserved for particular remarks).

Firm	Anti/Pro	Founder/Chairman/CEO	Remarks / online source:
Accton Technology	Anti	An-Jie Huang (An-Jye Huang), Shiming Zhang	http://www.libertytimes.com.tw/2003/new/may/6/today-e6.htm
Acer	Anti	Zhenrong Shi, Zhentang Wang, Jianren Weng	http://epaper.usqiaobao.com:81/qiaobao/html/2007-09/08/content_3783.htm
Shin Hai Gas	Anti	Shouzheng Ding, Mingxing Lin	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Mercuries Data Systems	Anti	Hedong Chen, Xiangli Chen, Xiangzhong Chen	Hedong Chen was ROC presidential advisor and major donor to a think tank affiliated with DPP.
Cathay Real Estate Development	Anti	Qingkui Zhang, Luque Huang, Qingkui Zhang	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Hwang Chang General Contractor	Anti	Chengjin Jiang, Chonglei Huang	http://www.appledaily.com.tw/appledaily/article/headline/20080529/30599829
Hota Industrial Manufacturing	Anti	Guorong Shen, Junzhi Chen	http://www.businesstoday.com.tw/v1/content.aspx?a=W20111102026
Shinkong Insurance	Anti	Xinhong Wu, Wenquan Zhan	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Taiwan Mobile	Anti	Mingxing Cai, Xuanwu Lai	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Fubon Financial	Anti	Mingzhong Cai, Tianxing Gong	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Cathay Financial	Anti	Hongtu Cai, Zhanggen Li	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Hong YI Fiber Industry	Anti	Zhenrong Shi (a.k.a. Stan Shi), Zhaojia Luo	http://epaper.usqiaobao.com:81/qiaobao/html/2007-09/08/content_3783.htm
Taishin Financial	Anti	Dongliang Wu, Longzheng Chen	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Shin Kong Financial	Anti	Dongjin Wu, Peng Xu	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Chong Hong Construction	Anti	Wenzhao Li, Yaoshong Li	http://www.nownews.com/2008/12/19/320-2382961.htm
Lien Chang Electronic Enterprise	Anti	Yuren Huang, Maoxiong Huang, Zhengang Chen	http://www.nownews.com/2007/08/16/10844-2142153.htm
Phytohealth	Anti	Chengjia Li, Wenhua Chen	http://www.chineseunb.com/bbs/showthread.php?t=15288&langid=12
Maywufa	Anti	Chengjia Li, Yuru Lai	http://www.chineseunb.com/bbs/showthread.php?t=15288&langid=12
Mercuries & Associates	Anti	Hedong Chen, Xiangli Chen	Hedong Chen was ROC presidential advisor and major donor to a think tank affiliated with DPP.
Taiwan Shin Kong	Anti	Fengyao Li, Bofeng Lin	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Shinkong Synthetic Fiber	Anti	Dongshen Wu, Xianzhong He	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Shinkong Textile	Anti	Xinhong Wu, Jinfa Qiu	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Tsrc	Anti	Qi Yin, Shaoyu Wang, Weihua Tu	http://zh.wikipedia.org/wiki/%E6%AE%B7%E7%90%AA
The Great Taipei Gas	Anti	Wenyi Wang, Rongfu Xie	http://old.npf.org.tw/PUBLICATION/FM/095/FM-C-095-041.htm
Weltrend Semiconductor	Anti	Ximing Lin, Kunchan Cai	http://www.lihpao.com/?action-viewnews-itemid-55314
Creative Sensor	Anti	Yuren Huang, Maoxiong Huang, Yucang Xie	http://www.nownews.com/2007/08/16/10844-2142153.htm
FIC Global	Anti	Mingren Jian	http://www.nownews.com/2007/08/16/10844-2142153.htm
Continental Engineering	Anti	Qi Yin (a.k.a. Nita Ing), Yiqian Hong	http://zh.wikipedia.org/wiki/%E6%AE%B7%E7%90%AA
Chinese Maritime Transport	Pro	Yin'gang Peng, Shundi Hong	Close family relations to high-level members of KMT
Twinhead International	Pro	Yunren Gao, Sifu Gao	http://zh.wikipedia.org/zh-cn/%E9%AB%98%E8%82%B2%E4%BB%81
BES Engineering	Pro	Qingjing Shen, Weili Cai	http://zh.wikipedia.org/wiki/%E6%B2%88%E6%85%B6%E4%BA%AC
Unitech Printed Circuit Board	Pro	Pingzhao Zhang, Yuanming Zhang, Zhenghong Xu	Membership of KMT
Hsin Kao Gas	Pro	Tianmao Chen, Jiandong Chen	Membership of the KMT Central Standing Committee
VIA Technologies	Pro	Xuehong Wang (a.k.a. Cher Wang), Wenqi Chen	http://zh.wikipedia.org/wiki/%E7%8E%8B%E9%9B%AA%E7%B4%85
President Securities	Pro	Qingyuan Gao, Ahua Zheng, Kuancheng Lin	http://www.hudong.com/wiki/%E9%AB%98%E6%B8%85%E6%84%BF
Kian Shen Corporation	Pro	Shiquan Chen, Shaobao Mai	http://www.businessweekly.com.tw/article.php?id=42127
China Television	Pro	Shengfen Lin, Tailin Li	Run by KMT before December 2005

Cheng UEI Precision Industry	Pro	Taiming Guo (a.k.a. Terry Gou), Taiqiang Guo	http://udn.com/NEWS/NATIONAL/NATS3/6782486.shtml
Carnival Industrial	Pro	Kaitai Yan, Yucheng Jiang	http://www.businessweekly.com.tw/article.php?id=42127
China Motor	Pro	Kaitai Yan	http://www.businessweekly.com.tw/article.php?id=42127
Taiwan Acceptance	Pro	Kaitai Yan	http://www.businessweekly.com.tw/article.php?id=42127
China Petrochemical Development	Pro	Qingjing Shen, Xijin Cai	http://zh.wikipedia.org/wiki/%E6%B2%88%E6%85%B6%E4%BA%AC
Chunghwa Picture Tube	Pro	Tingsheng Lin, Shengchang Lin	Tingsheng Lin was a member of the KMT.
Jean Company	Pro	Zhenyuan Lin	Zhenyuan Lin is the son of Tingsheng Lin
Elitegroup Computer Systems	Pro	Wenyan Linguo, Zhihong Xu	Wenyan Linguo is the wife of Tingsheng Lin
Giant Manufacturing	Pro	Jinbiao Liu, Xiang'an Luo	Advisory to ROC president (KMT's Yingjiu Ma)
Power Quotient International	Pro	Taiming Guo (a.k.a. Terry Gou), Taiqiang Guo	http://udn.com/NEWS/NATIONAL/NATS3/6782486.shtml
Hon Hai Precision Industry	Pro	Taiming Guo (a.k.a. Terry Gou)	http://udn.com/NEWS/NATIONAL/NATS3/6782486.shtml
HTC Corp.	Pro	Xuehong Wang (a.k.a. Cher Wang), Yongming Zhou	http://zh.wikipedia.org/wiki/%E7%8E%8B%E9%9B%AA%E7%B4%85
Sinopac Financial Holdings	Pro	Shouchuan He, Zhi'ang Xiao	URL suppressed for brevity
Chinatrust Financial	Pro	Liansong Gu, Yikui Wu	http://zh.wikipedia.org/wiki/%E8%BE%9C%E6%BF%82%E6%B7%9E
Altek Corp.	Pro	Shanke Xu, Ruwen Xia	http://www.businessweekly.com.tw/article.php?id=42127
Pan-International Industrial	Pro	Songfa Lu, Songfa Lu	http://udn.com/NEWS/NATIONAL/NATS3/6782486.shtml
Uni-President Enterprises	Pro	Qingyuan Gao, Zhixian Luo	http://www.nownews.com/2003/09/06/703-1509446.htm
President Chain Store	Pro	Qingyuan Gao, Zhongren Xu	http://www.nownews.com/2003/09/06/703-1509446.htm
Foxconn Technology	Pro	Dongliang Lin, Hanming Li	Membership of Foxconn Technology Group
Taiwan Glass Industry	Pro	Bofeng Lin, Boshi Lin	http://www.nownews.com/2003/11/09/185-1540845.htm
Ta Chong Bank	Pro	Jianping Chen, Rongdong Cai	http://zh.wikipedia.org/wiki/%E9%99%B3%E5%BB%BA%E5%B9%B3
Tatung Company	Pro	Tingsheng Lin, Weishan Lin, Wenyan Linguo	Wenyan Linguo is the wife of Tingsheng Lin
Ten REN Tea	Pro	Mingxing Li, Renzong Lin	http://zh.wikipedia.org/wiki/%E6%9D%8E%E6%98%8E%E6%98%9F
Teco Electric & Machinery	Pro	Zhaokai Liu, Chunzhi Qiu	Brother of Zhaoxuan Liu(a former Premier of the Republic of China, from KMT)
Tecom	Pro	Zhaokai Liu, Hede Guan	Brother of Zhaoxuan Liu(a former Premier of the Republic of China, from KMT)
Ton YI Industrial	Pro	Qingyuan Gao, Zhizhong Chen	http://www.nownews.com/2003/09/06/703-1509446.htm
TTET Union	Pro	Qingyuan Gao, Yisheng Huang	http://www.nownews.com/2003/09/06/703-1509446.htm
Taiwan Mask	Pro	Sanke Xu, Biwan Chen	http://www.businessweekly.com.tw/article.php?id=42127
Yulon Motor	Pro	Kaitai Yan, Guorong Chen	http://www.businessweekly.com.tw/article.php?id=42127
Yuen Foong Yu Paper	Pro	Xiuying Qiu, Peng, Zhong	Membership of SinoPac Holdings Co whose director is Chuanshou He
Yulon Nissan Motor	Pro	Kaitai Yan, Wenrong Cai	http://www.businessweekly.com.tw/article.php?id=42127
Green Energy Technology	Pro	Weishan Lin, Helong Lin	Tingsheng Lin is a member of the KMT.

ONLINE APPENDIX

Figure A.1. Months with Higher Expected Tension

The figure shows months in which the Taiwanese public expects the cross-strait tension level to rise over the next month. This binary dummy is based on a survey conducted by the Taiwanese “Global Views Survey Research Center”. The monthly telephone survey collects views of locals on the cross-strait relationship. Starting in 2006 and ending in 2011 the survey asks: “In general, what is your opinion on the relationship between Taiwan and the mainland next month comparing with this month?” given a set of possible answers (worsening/improving/no change). The research center aggregates the responses and our binary dummy consistently takes the value 1 for months in which the overall public opinion expects the relationship to worsen, else 0. Out of the 63 months in which the survey is carried out, there are 30 months in which the tension level is expected to rise.

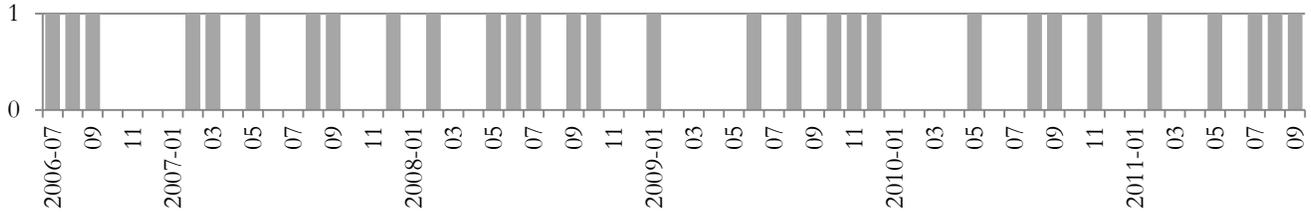


Figure A.2. Cumulative Abnormal Returns (Market Model)

The graph presents the evolution of cumulative abnormal returns (CAR) for Taiwanese stocks during the pooled event window of all events, supplementary to Figure 2 in the paper. A normal return equation for each firm in each event is estimated based on a market model following MacKinley (1997) where the realized return is regressed on the market return for the preceding time period [-100,-21]. The abnormal return is then calculated as the realized return beyond the predicted normal return from the estimated model. This calculation of returns is at the firm-event level, i.e. for each firm in each event we calculate a different normal return model. The confidence intervals are established around 10-day average CARs, which are obtained by regressing CAR on period dummies (one for each interval [-20, -11], [-10, -1], ... , [50, 59]) and estimating firm-day clustered standard errors thereof. When calculating the confidence intervals we assume that normal returns are estimated without error, cf. MacKinley (1997).

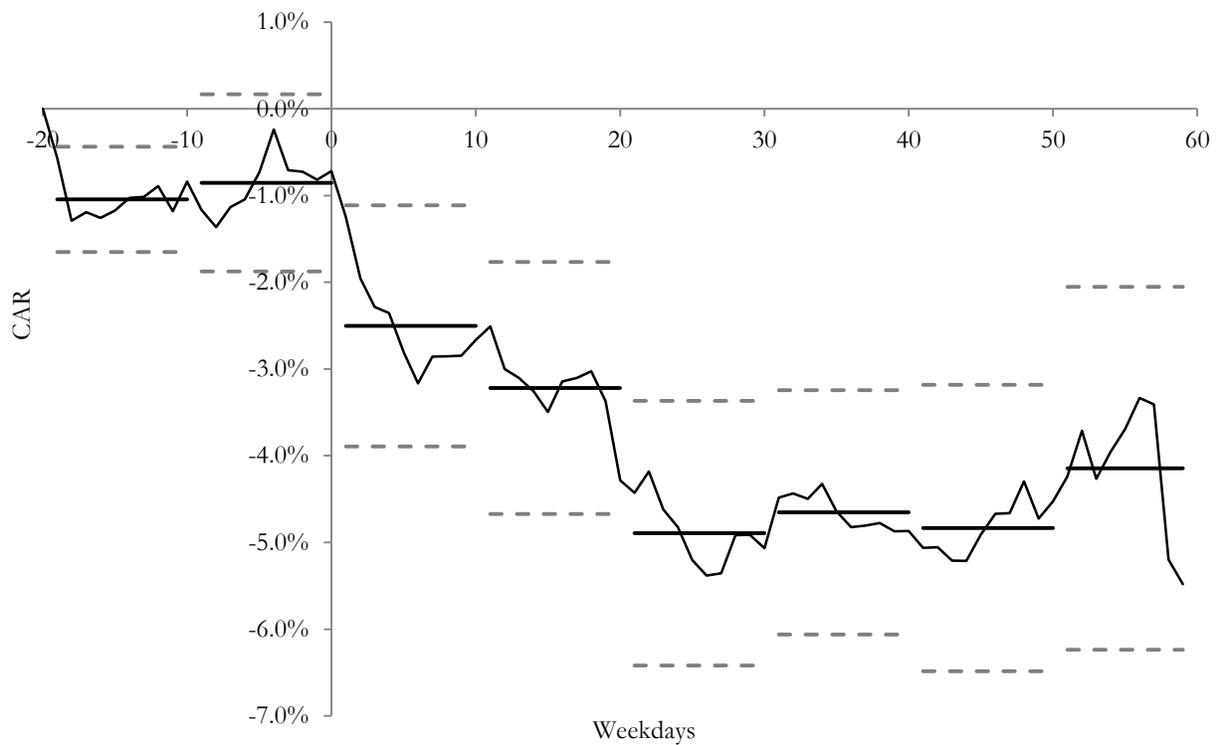


Table A.1. Political Tension and Average Returns: Shenzhen Composite Index

This table presents additional results to Table 2 (corresponding to columns (4) and (8)), where the dependent variable is average daily percentage return within the month. Survey data is available 2006-2011 and the dummy variable *TensionExpectation* takes value of 1 in months in which political tension is expected to increase over the next month, and 0 otherwise. The GDP variable corresponds to the quarterly GDP growth rate in percentages of the corresponding region (Taiwan or mainland China). The dummy *DPP in power* that takes value one when the pro-independence party is in power in Taiwan, and zero otherwise. Reported standard errors are robust to both arbitrary heteroskedasticity and arbitrary autocorrelation. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

	Chinese firms Event study Shenzhen Stock Index	Chinese firms Survey data Shenzhen Stock Index
TensionEvents	-1.43** (0.60)	
TensionExpectation		-0.03 (0.10)
GDP		-0.23 (0.20)
DPP in power		0.51*** (0.17)
Number of obs.	230	63
Period fixed effect	Yes	-
2nd order time trend	-	Yes
R ²	0.05	0.10

Table A.2. Cumulative Abnormal Returns: Regression Results

This table shows the regression results to draw average CAR and its confidence interval of Figure 2. The abnormal return is calculated as the realized return beyond the average return during the 80 trading days prior to the event window, i.e. dates [-100,-21]. This calculation of returns is at the firm-event level, i.e. for each firm in each event we calculate a different normal return based the average return during the estimation window. The confidence intervals are established around 10-day average CARs, which are obtained by regressing CAR on period-dummies (one for each interval [-20, -11], [-10, -1], ... , [50, 59]) and estimating firm-day clustered standard errors. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

	CAR
[-20, -11]	-0.08 (0.30)
[-10, -1]	-0.94* (0.56)
[0, 9]	-5.38*** (0.86)
[10, 19]	-7.13*** (1.07)
[20, 29]	-9.47*** (1.06)
[30, 39]	-8.35*** (1.32)
[40,49]	-9.09*** (1.73)
[50, 59]	-7.36*** (1.53)
Constant	-0.00 (0.00)
Observations	225,258
R-squared	0.02

Table A.3. Risk of War: Effect of Tension on Chinese firms by Location

This table presents results complementary to Table 3. Panel A controls for investment and export by Taiwanese firms to the industries of the Chinese firm sample. Mainland exposure (*Exposure*) is defined either as i) total exports of each firm's industry to mainland China (in the previous calendar year) normalized by the total exports to all countries, or as ii) cumulative investment (without depreciation) in mainland China of each firm's industry normalized by the total asset value of that industry. Both measures are in percentage terms. Since the investment variable is unavailable prior to 1998 we apply the time constant average thereof, leaving it unreported due to the fixed effects. In Panel B, regressions (1) and (4) are the same as those reported in Table 3. In regressions (2) and (5) a separate bivariate dummy *OtherCoast* is added for the coastal provinces Hainan, Guangxi and Jiangsu. Similarly, regressions (3) and (6) include a dummy *OtherClose* for the provinces of Hainan, Guangxi, Hunan, Jiangxi, Anhui and Jiangsu. The sample period and all other variables are as defined in Table 2. Due to firm fixed effects all time-constant dummies drop out when not interacted with political tension measures. Two-way clustered standard errors are reported in parenthesis. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

Panel A: Controlling for trade links

Outcome Variable: (Average) Daily Stock Returns in %

	Event study		Survey data	
	(1) Exports	(2) Investment	(3) Exports	(4) Investment
TensionEvent	-0.77* (0.45)	-0.65* (0.38)		
TensionExpectation			-0.03 (0.14)	-0.03 (0.14)
SouthEast * TensionEvents	-0.23 (0.15)	-0.26* (0.14)		
SouthEast * TensionExpectation			-0.03* (0.01)	-0.03** (0.01)
Exposure	-0.00 (0.00)		-0.01** (0.00)	
Exposure * TensionEvent	0.01 (0.01)	0.01 (0.01)		
Exposure * TensionExpectation			0.00** (0.00)	0.00 (0.00)
Ln(Total Assets)	-0.03 (0.04)	-0.03 (0.04)	-0.00 (0.04)	-0.00 (0.04)
Leverage	0.04 (0.03)	0.04 (0.03)	0.00 (0.02)	0.01 (0.02)
Return on Assets	0.55*** (0.21)	0.55*** (0.20)	0.39*** (0.11)	0.39*** (0.11)
Beta	-0.02 (0.03)	-0.02 (0.03)	-0.03 (0.03)	-0.03 (0.03)
GDP			0.44 (0.28)	0.44 (0.28)
DPP in power			-0.11 (0.46)	-0.12 (0.46)
Number of observations	166,425	166,216	90,410	90,410
Number of firms	1,314	1,314	1,565	1,565
Period fixed effect	Yes	Yes	-	-
2nd order time trend	-	-	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
R-squared	0.01	0.01	0.04	0.04

Panel B: Controlling for other provinces

Outcome Variable: (Average) Daily Stock Returns in %

	Event study			Survey data		
	(1) SouthEast	(2) OtherCoast	(3) OtherClose	(4) SouthEast	(5) OtherCoast	(6) OtherClose
TensionEvent	-0.63* (0.36)	-0.63* (0.37)	-0.64* (0.37)			
TensionExpectation				0.00 (0.14)	0.01 (0.14)	0.01 (0.14)
SouthEast * TensionEvents	-0.27* (0.14)	-0.27* (0.15)	-0.27* (0.14)			
SouthEast * TensionExpect.				-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)
OtherCoast * TensionEvent		0.01 (0.04)				
OtherCoast * TensionExpect.					-0.02 (0.01)	
OtherClose * TensionEvent			0.03 (0.06)			
OtherClose * TensionExpect.						-0.01 (0.01)
Ln(Total Assets)	-0.03 (0.04)	-0.03 (0.04)	-0.03 (0.04)	0.00 (0.03)	0.00 (0.03)	0.00 (0.03)
Leverage	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Return on Assets	0.55*** (0.20)	0.55*** (0.20)	0.55*** (0.20)	0.39*** (0.11)	0.39*** (0.11)	0.39*** (0.11)
Beta	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.03 (0.03)
GDP				0.44 (0.28)	0.44 (0.28)	0.44 (0.28)
DPP in power				-0.12 (0.46)	-0.12 (0.46)	-0.12 (0.46)
Number of observations	166,425	166,425	166,425	90,410	90,410	90,410
Number of firms	1,314	1,314	1,314	1,565	1,565	1,565
Period fixed effect	Yes	Yes	Yes	-	-	-
2nd order time trend	-	-	-	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.01	0.01	0.01	0.04	0.04	0.04

Table A.4. Placebo Analysis: Effect of Events Uncorrelated With Cross-Strait Tension

This table supports claims in footnote 15 and corresponds to results in Table 3. Specifically, we repeat the analysis using three events that do not relate to the conflict, i.e. i) the 21 September 1999 earthquake in Taiwan, ii) the 9/11 terrorist attacks in 2001 and iii) increased tension in Japan-Taiwan relations following the ‘Lianhe fishing boat incident’ on June 10 2008, where a Taiwanese fishing vessel collided with a Japanese patrol vessel in disputed territorial waters claimed by both sides. The dependent variable is daily percentage returns. The daily data consists of the 20 days before and after the historical events, where the dummy *TensionEvent* takes value 1 on announcement days and the trading day that follows, and 0 otherwise. The regressions include binary dummies (period fixed effect) filtering out average return within each event window. Two-way clustered standard errors (clustering on firm-day) are reported in parentheses. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

Outcome Variable: Daily Stock Returns in %		
	(1)	(2)
	Average Effect	Effect by Political Connection
TensionEvent	-2.17*** (0.44)	-2.17*** (0.37)
AntiChina* TensionEvent		0.20 (0.31)
Ln(Total Assets)	-0.03 (0.06)	0.11 (0.09)
Leverage	0.01 (0.08)	-0.00 (0.15)
Return on Assets	0.41 (0.56)	0.06 (1.16)
Beta	-0.46** (0.19)	-0.25 (0.25)
Number of observations	54,746	5,820
Number of firms	718	68
Period fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
R-squared	0.04	0.03

Table A.5. Political Tension and Party Popularity

This table supports claims in footnote 16 on political tension affecting party popularity. Survey data is available 2006-2011 and the dummy variable *TensionExpectation* takes value of 1 in months in which political tension is expected to increase over the next month, and 0 otherwise. We take a measure on the popularity of the two parties (measured by so-called Kuomintang Trust Index, KMTTrust, and Democratic Progressive Party Trust Index, DPPTrust) and regress the growth rate thereof on the *TensionExpectations* dummy. Reported standard errors are robust to both arbitrary heteroskedasticity and arbitrary autocorrelation. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

	(1)	(2)
	DPP Popularity: DPPTrust	KMT Popularity: KMTTrust
TensionExpectation	0.05** (0.02)	-0.05*** (0.01)
Constant	0.01 (0.01)	-0.00 (0.01)
Observations	63	63
R-squared	0.00	0.13

Table A.6. Effects of being Politically Connected with the Election-winning Party

This table supports claims in footnote 16 on election outcomes affecting stock returns. The dependent variable is daily percentage returns. The daily data consists of the 20 days before and after the Taiwan Presidential election in 2004 and 2008, where *DPPwins* is a dummy equal to 1 if DPP wins in the presidential election and 0 otherwise. Two-way clustered standard errors (clustering on firm-day) are reported in parentheses. Statistical significance is reported at the 10% (*), 5% (**) and 1% (***) level.

<u>Outcome variable: Daily Stock Returns (in %)</u>	
	(1)
DPPwins	-3.71*** (1.25)
AntiChina*DPPwins	0.69* (0.41)
DPP in power	0.22 (0.43)
Ln(Total Assets)	-0.08 (0.09)
Leverage	-0.20*** (0.06)
Return on Assets	0.87* (0.45)
Beta	0.06 (0.13)
Number of observations	5,118
Number of firms	68
Period fixed effect	Yes
Firm fixed effect	Yes
R-squared	0.08

Table A.7. Mainland Investment and Foreign Sales

The table display time dummy estimates from regression (4) in section 4 where the outcome variable is either (change in) accumulative mainland investment or (change in) foreign sales of Taiwanese firms in millions of Taiwanese dollars. Time is measured quarterly (for mainland investment) or annually (for foreign sales). The sample period is quarter -8 to quarter +8 (year -2 to year +2) surrounding event dates, but for brevity we do not report coefficients for dummies for quarters prior to -3 and after +3 in regressions 1-2. For regressions (2) and (4) time = 0 is the time period including the event date of event e , while changes in an outcome variable in period t are measured as the increase/decrease from its level in period t and to that in $t+1$.

	(1) Investment	(2) Δ Investment	(3) For.Sales	(4) Δ For.Sales
time== -3	210.21*** (44.94)	-35.59 (26.94)		
time== -2	249.31*** (45.88)	-53.01 (36.68)		
time== -1	276.97*** (70.83)	-51.18** (23.94)	1,296.67 (2,630.41)	-637.28 (1,374.92)
time== 0	301.50*** (81.67)	-34.91 (25.14)	789.17 (3,039.36)	1,382.11 (1,729.73)
time== 1	348.58*** (85.50)	-34.19 (26.57)	3,443.14 (3,289.90)	-139.15 (1,285.89)
time== 2	398.42*** (103.90)	-7.77 (41.94)	4,696.44*** (968.18)	-2,119.37 (1,568.39)
time== 3	474.90*** (94.38)	-72.93** (30.98)		
(time== -3)*AntiChina	-31.84 (108.94)	14.67 (15.64)		
(time== -2)*AntiChina	3.15 (115.91)	20.92 (25.65)		
(time== -1)*AntiChina	-8.71 (129.23)	28.45 (23.28)	2,984.52 (5,861.13)	1,720.22*** (573.23)
(time== 0)*AntiChina	-11.26 (143.75)	-56.04 (55.01)	7,070.39*** (2,683.14)	-2,471.40** (1,209.02)
(time== 1)*AntiChina	-104.18 (126.89)	8.33 (13.22)	2,231.44 (4,932.55)	-1,585.17 (1,934.97)
(time== 2)*AntiChina	-134.92 (147.48)	-12.00 (55.98)	1,211.04 (1,162.21)	1,294.00 (970.71)
(time== 3)*AntiChina	-176.42 (134.58)	25.46 (29.13)		
Constant	9,652.49*** (244.11)	-1.10 (18.42)	-21,595.39 (15,475.31)	-3,357.82*** (1,209.23)
Time dummy	Quarterly	Quarterly	Annual	Annual
Observations	2,171	2,218	597	557
Number of Stocks	43	50	48	48
R-squared	0.92	0.08	0.70	0.23