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RESEARCH NOTE

The cost of presidential impeachment to politically connected firms

Ha Na Lee[1] and B. K. Song[2]*

[1]Department of Behavioral Socioeconomics, Ewha Womans University, 203, Graduate School Building, 52, Ewhayeodae-gil, Seodaemun-gu, Seoul 03760, Korea and [2]Department of Policy Studies, Hanyang University, 222 Wangsimni-ro, Seongdong-gu, Seoul 04763, South Korea
*Corresponding author. E-mail: bksong99@gmail.com

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Abstract
This study examines the ways political events can affect the stock prices of politically connected firms by studying one of the biggest corruption scandals in modern South Korean history, which led to the first-ever impeachment of a sitting president. We analyzed the stock returns of firms that donated money to foundations allegedly controlled by the president's confidante. We found that the abnormal stock returns of politically connected firms decreased when the president was removed from office. Using tick-by-tick stock price data, we were able to pinpoint the exact moments when the stock prices of firms that donated money fluctuated, as the president's fate was determined by the justices of the Constitutional Court.

Key words: Event study; political connections; presidential impeachment

1. Introduction

This study examines the ways in which political events can affect the stock prices of politically connected firms by studying one of the biggest corruption scandals in modern South Korean history, which led to the first-ever impeachment of a sitting president. In late 2016, several media outlets reported that 53 South Korean companies had made large donations to two nonprofit foundations, and that both had been allegedly controlled by President Park Geun-hye's long-time confidante, Choi Soon-sil. It was later discovered that Choi, who had no official position in government, had been meddling in state affairs. In December 2016, the National Assembly, the unicameral national legislature of South Korea, passed a bill to impeach the president; three months later, the Constitutional Court upheld the impeachment, removing Park from office.[1]

A number of previous studies show that the stock prices of firms with political connections change in response to political events that affect the politicians or political parties connected to the firms (e.g., Roberts, 1990; Fisman, 2001; Jayachandran, 2006; Ramalho, 2007; Claessens *et al.*, 2008; Faccio and Parsley, 2009; Shon, 2010; Gaikwad, 2013; Coulomb and Sangnier, 2014; Akey, 2015; Acemoglu *et al.*, 2016).[2] Building on this literature, we investigate how the impeachment of President Park affected the stock prices of firms that had donated money to the foundations, using an event study methodology. We show that the stock returns of politically connected firms decreased compared to those of other firms when the National Assembly passed the impeachment bill, and the Constitutional Court removed the president from office.

[1]We provide more detailed information about the scandal in Appendix A.

[2]In contrast, some studies find no evidence that political events affect politically oriented firms (e.g., Ansolabehere *et al.*, 2004; Werner, 2011; Fisman *et al.*, 2012).

The main contributions of this paper are twofold. First, it extends the literature on the relationship between political events and politically oriented firms' values in the stock market, by studying the South Korean impeachment case. The scandal, also known as the 'Choi-gate,' provides a good opportunity to study the value of political connections. Unlike previous studies that use campaign contributions as a measure of political connectedness (e.g., Ansolabehere *et al.*, 2004; Claessens *et al.*, 2008; Shon, 2010; Gaikwad, 2013), our measure of political connections captures a more explicit *quid pro quo* relationship between a politician and firms. In addition, typical event studies do not completely rule out the possibility that the results are affected by other events that occurred at the same time when the event of interest occurred. We overcome this limitation by using second-by-second stock price data. Since the Constitutional Court's impeachment ruling was broadcast live on television throughout the country, we were able to pinpoint the exact moments when the stock prices of the firms that had donated money fluctuated, as Park's fate was being determined by the justices of the Court.

Second, our study contributes to literature on the relationship between business and politics in South Korea. While previous studies on the political economy of South Korea underscore the close relationship between companies and the government (e.g., Haggard and Mo, 2000; Kang, 2002), it is unclear how much firms gain (or lose) from this relationship. Recent empirical studies (Siegel, 2007; Schoenherr, 2019) show that political ties between firms and political parties or politicians can bring benefits, such as government contracts (Schoenherr, 2019), to firms in South Korea. Consistent with these findings, we present evidence suggesting politically connected firms' stock prices may rise and fall in response to political events.

2. Theoretical discussion

Previous studies have used campaign contributions as a measure of political ties between firms and political parties or politicians (e.g., Ansolabehere *et al.*, 2004; Claessens *et al.*, 2008; Shon, 2010; Gaikwad, 2013). These studies posit that companies donate money either because they seek to influence politicians for favorable policy decisions (*influence-motivated*), or because they want politicians who share their policy positions to be elected (*election-motivated*) (e.g., Stratmann, 2005; Shon, 2010). An alternative explanation views campaign contributions as a form of consumption, rather than political investments (Ansolabehere *et al.*, 2003). In other words, people donate money to politicians, not because they expect tangible benefits from the government, but because they are motivated to do so. For instance, they may donate money to politicians who have similar ideological preferences to their own.

In this study, we define politically connected firms as those that donated money to the Mir or K-Sports foundations, which were allegedly controlled by President Park's confidante. The nature of the scandal and donations make the case most consistent with the *influence-motivated* explanation. According to the influence-motivated explanation, if politically oriented companies receive benefits from their campaign contributions, such as subsidies, government contracts, or favorable regulations, their stock prices may fluctuate in response to political events that affect the fate of the political party or politician that received the money. As such, we expect the stock prices of firms that donated money to be affected by the impeachment of the president.

We believe that the other two views on campaign contributions are less plausible in explaining the changes in stock prices of the politically connected firms after the impeachment. We can rule out the *election-motivated* hypothesis, because presidents in South Korea are not eligible for reelection, and thus, companies that wish to influence election outcomes would have no incentive to invest money in the foundations. Alternatively, the executives of companies may have donated money because they are motivated by the Park government's conservative economic policies, and not because they expected benefits from the government. Then, the change in their stock prices after the impeachment may simply reflect the expected changes in economic policies. Although the Constitutional Court's decision removed Park from office, the prime minister of the Park government, Hwang Kyo-ahn, assumed presidency for a period of 2 months after the impeachment. Therefore, it is unlikely that the stock market's reaction is primarily driven by the expected changes in economic policies.

The information revealed during the trials that followed the impeachment of President Park suggests a *quid pro quo* relationship between the firms and the president, which makes the influence-motivated explanation even more plausible. During the impeachment trial, the Constitutional Court found that the Mir and K-Sports foundations were used for the private gains of Choi Soon-sil, the president's informal advisor. In return for their donations, several corporate executives had allegedly sought political favors from Park. For instance, Samsung's Vice Chairman and the Group's heir, Lee Jae-yong, who was indicted and arrested on bribery charges, was accused of offering bribes to seek government support for the merger of two Samsung affiliates – a merger that would have strengthened Lee's control over the Samsung conglomerate (McCurry, 2017). The Lotte Group's Chairman, Shin Dong-bin, who was also indicted by prosecutors, had allegedly donated money to the foundations in exchange for the Group's duty free business (Macfarlane and Lee, 2017). At the trial of Park Geun-hye and Choi Soon-sil, Choi Tae-won, the Chairman of the SK Group, testified that Park had asked, during a private meeting, how much the SK Group had donated to the two foundations. When Ahn Chong-bum, former presidential secretary, confirmed that the Group had donated USD9.7 million, Park thanked him. During the meeting, Choi brought up the issue of pardoning Choi Jae-won, the SK Group's Vice Chairman and Choi Tae-won's brother, who was serving a term in prison for embezzlement, although Park did not respond to the request (Choi, 2017).[3]

3. Methods and data

We tested whether the firms that had been politically connected to President Park were hurt by the impeachment. To conduct an event study analysis, we use two events that led to the removal of President Park. The first event (event 1) is defined as the passing of the impeachment bill in the National Assembly (9 December 2016) and the second event (event 2) is the ruling by the Constitutional Court (10 March 2017).

We expect that these events would decrease the stock prices of the politically connected firms, relative to that of others. Previous studies show that politically oriented firms' stock prices increase when there is good news about their political connections, such as a success in foreign affairs (Gaikwad, 2013), a politician's appointment to an important cabinet position (Acemoglu *et al.*, 2016), or winning an election (Fisman *et al.*, 2012; Coulomb and Sangnier, 2014; Akey, 2015). In contrast, firms' stock prices decrease when there is bad news, such as the passing of a bill that makes campaign contributions more difficult (Ansolabehere *et al.*, 2004), a politician's deteriorating health (Fisman *et al.*, 2012) or death (Roberts, 1990; Faccio and Parsley, 2009). Following these studies, we estimate the stock market values of the relationship by analyzing the amount the firms' stock returns fell before and after the two events, relative to other firms.[4]

We used the firms' actual stock returns, as well as their abnormal returns, as our dependent variables. Abnormal return is defined as the difference between a firm's actual stock return and its expected return. This difference captures the effect of any 'abnormal' event that is not explained by the model used to calculate each firm's expected return. Following the event study literature (e.g., Campbell *et al.*, 1997; Jayachandran, 2006; Gaikwad, 2013; Acemoglu *et al.*, 2016), we estimate the

[3]Choi Tae-won was not indicted by the prosecutors.

[4]It is possible that the effects of negative and positive political events may differ in terms of magnitude. If there is no bribery, and the corporate heads do not face a threat of being prosecuted, it would be safe to assume that the values of political connections can be measured either by positive or negative political events. This may not be the case if some of the benefits that the firms receive are illegal. Stock markets' reaction to negative events might exaggerate the value of the political connection if the threat of punishment outweighs the benefits, and they may underestimate it if the benefits are greater than the punishment. However, it is unlikely that the firms' value decreases only because of the threat of punishment when the firms received nothing from the Park government. Therefore, we believe that it is plausible that our estimates of the negative effects of donation reflect the value of political connections (possibly along with some decrease in the stock prices due to the threat of corporate heads being punished).

expected return using a linear model that takes into account any (time-invariant) firm-specific factor, and the market return.

More specifically, let i and t index firm and date, respectively. To calculate firm$i$'s expected return, we estimated the following equation during a pre-event period:

$$R_{it} = \alpha_i + \beta_i M_t + \varepsilon_{it}, \tag{1}$$

where R_{it} is firm i's return,[5] α_i is the firm fixed effect that controls for each firm's unobserved time-invariant characteristics, M_t is the market return at date t, and ε_{it} is the error term. We defined the pre-event period as lasting from 9 December 2015 (1 year prior to the date of the first event) until 9 November 2016 (1 month prior to the date of the first event). Note that we estimate α_i and β_i using all the data of the pre-event period. Therefore, $\hat{\alpha}_i + \hat{\beta}_i M_t$ is our estimation for firm i's expected stock return at date t based on the information of the pre-event period, where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the OLS (ordinary least squares) estimates of the coefficients in equation (1). The abnormal return AR_{it} during the event period for firm i at date t is defined as follows:

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i M_t. \tag{2}$$

Following Acemoglu *et al.* (2016), we used cumulative stock returns and cumulative abnormal returns as our dependent variables.[6] Our key independent variable, Mir-K$_i$, is a dummy variable that equals 1 if firm$i$, or its parent company, subsidiaries, or affiliates, had donated money to the Mir or K-Sports foundations. To control for firm size, we also included the stock market capitalization value of each firm in the regression. Therefore, we estimate a regression of the following form:

$$y_i = \alpha + \beta_1 \text{ Mir-K}_i + \beta_2 \text{ Size}_i + \varepsilon_i, \tag{3}$$

where y_i is our dependent variable (either stock returns or abnormal stock returns). We used the market capitalization value as a measure of the firm size (Size$_i$). β_1 estimates the average difference in (abnormal) stock returns between politically connected firms and others during the event windows. The coefficients are estimated by OLS.

We collected data on the daily stock price and stock-market capitalization value of each of 752 companies listed on the Korea Composite Stock Price Index (KOSPI) between 9 December 2015 and 13 March 2017.[7] We used the KOSPI to measure the market returns, M_t in equations (1) and (2). The list of companies that had donated money to the Mir or K-Sports foundations came from the press release issued by a member of the National Assembly.[8] According to the report, the Mir foundation received KRW48.6 billion (about USD44.6 million) from 30 companies, and the K-Sports foundation received KRW28.8 billion (about USD26.4 million) from 49 companies. In total, 53 companies had donated money to at least one of the two foundations. We also identified the parent companies, subsidiaries, and affiliates of the 53 companies that had donated money. Given that many firms listed on the KOSPI are tied to large conglomerates – also known as *Chaebols* – we classified a company as politically connected to President Park if the company itself or its parent company, subsidiaries, or affiliates had donated money to either of the two foundations.

[5]Specifically, $R_{it} = (P_{it} - P_{i(t-1)})/P_{i(t-1)}$, where P_{it} is the closing price of firm i at date$t$.

[6]Specifically, we defined $CR[1, n]_i = \sum_{t=1}^{n} R_{it}$ and $CAR[1, n]_i = \sum_{t=1}^{n} AR_{it}$ as the summation of firm i's stock returns and abnormal returns from event date 0 to n, respectively. Both events occurred on a Friday. As such, we defined the event time period as the date when the event took place, to the following Monday.

[7]The number of firms ever listed on the KOSPI during the study period was 774. We excluded the companies that had been listed for less than 200 days during the pre-event period.

[8]The list was composed and released by Representative Roh Woong-Rae (the Democratic Party). The list also appeared in a press release written by Solidarity for Economic Reform, a Korean nongovernmental organization.

As a result, we derived 125 companies with Mir-K = 1 (i.e., about 16.6% of the companies in our sample).

In addition, we also analyzed how the stock market reacted at the moment when President Park was removed from office, using the tick-by-tick stock price data of companies listed on the KOSPI, on 10 March 2017.

4. Results

Table 1 presents the main results.[9] The table shows that the coefficient for Mir-K is negative and statistically significant in all columns, and this implies that the firms that had donated money to the foundations suffered from the impeachment of the president. According to our estimates, when the National Assembly voted to impeach the president, the actual and abnormal stock returns of the firms that gave money to the foundations were 1.14–1.23% *lower* than those of other firms. During the second event period, when the Constitutional Court upheld the impeachment, having made a donation to a foundation was associated with 0.54 and 0.68% lower actual and abnormal stock returns, respectively.

The size of the effect on the firms' stock returns reported in Table 1 is comparable to those reported in previous studies. For instance, Roberts (1990) shows that when Senator Henry Jackson died, his constituent companies' stock return fell by 1.33%. Jayachandran (2006) shows that when the Republican party lost control of the US Senate following Senator James Jeffords' defection, firms that donated soft money to the Republican party lost their stock values. According to Jayachandran's (2006) estimate, every USD100,000 donated to the Republican party was associated with a 0.33% lower stock return. A simple back-of-the-envelope calculation suggests that roughly USD345,454 is required to gain 1.14% increase in abnormal stock return. Faccio (2006) reports that a surprising election win of a politician is associated with a 1.43% increase in stock return of the companies politically connected to that politician. Faccio and Parsley (2009) show that when a politician suddenly dies, the firms headquartered in the hometown of that politician lose their stock value by 1.7%. Gaikwad (2013) analyzes the effect of Osama Bin Laden's death on the stock return of companies that donated soft money to the Democratic Party. He shows that every USD100,000 donated to the Democratic Party led to a 0.194% increase in abnormal return, which suggests that roughly USD587,629 is needed to boost abnormal stock return by 1.14%.

The effect of the impeachment on firms' stock returns can be substantial given the size of the firms that donated money to the Mir or K-Sports foundation. The average market capitalization value of the politically connected firms before the event was about KRW6.2 trillion (about USD5.69 billion). A rough calculation suggests that, on average, 1.14% drop in abnormal stock return (column 2) may have decreased the market capitalization value of the firms by KRW7.07 billion (about USD64.9 million).

Figure 1 shows the stock-market responses around the time of the two event windows. For each day, the figure plots the estimates of the coefficients for Mir-K and the 95% confidence intervals. Panels (a) and (b) show the stock market's responses to the impeachment by the National Assembly and the ruling by the Constitutional Court, respectively. Panel (a) shows the effect of the National Assembly voting, which took place on 9 December 2016. The effect persisted for 2–3 days after the impeachment, and disappeared on 15 December.

Panel (b) shows how the stock market responded to the Constitutional Court's decision. The Constitutional Court was expected to announce the date for the final ruling on 7 March, but delayed its decision. This was likely to be interpreted by the stock market as a sign that the Constitutional Court justices were split over the final ruling, and the figure shows that the coefficients for Mir-K were positive and statistically significant on that date. On 8 March, the Court announced that it would rule on 10 March whether to remove the president from office, and that the ruling would be broadcast live on television. The stock market took this as a sign that the Court would not reinstate the impeached president. The coefficient for Mir-K after the announcement of the ruling date was

[9]Summary statistics are reported in Appendix B.

Table 1. Stock market's response to the impeachment of President Park

	Event 1		Event 2	
	Cumulative		Cumulative	
	Stock return (1)	Abnormal stock return (2)	Stock return (3)	Abnormal stock return (4)
Money to Mir or K-Sports	−0.0123***	−0.0114***	−0.0054**	−0.0068***
	(0.0027)	(0.0027)	(0.0025)	(0.0026)
Market cap	−0.0192**	−0.0202**	0.0084	0.0054
	(0.0086)	(0.0089)	(0.0069)	(0.0064)
N	752	752	752	752
R^2	0.021	0.019	0.002	0.004

Notes: Robust S.E. are in parentheses. Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court. ***P <0.01; **P <0.05; *P <0.1.

generally negative. The effect of the ruling, however, was somewhat smaller in size and short-lived than that of the impeachment.

In summary, the results of our analyses in this section suggest the impeachment of President Park negatively affected the stock market returns of firms politically connected to the president. In Appendices C and D, we conducted several robustness checks. First, we used a different specification that analyzed panel data from 9 December 2015 to 13 March 2017 (Appendix C). The results reported in Table C.1 are similar to those reported in Table 1. Second, we repeated the analysis reported in Table 1 after removing, one at a time, the parent companies of firms that donated money (Figure D.1). This ensured the results were not driven by any outlier firm. Finally, we excluded parent companies and repeated the analyses to address the concern that large firms are more likely to donate money to foundations (Table D.1). The results all remained similar.

We also conducted a second-by-second analysis of the relative stock market performance of the politically connected firms – relative to that of others – during the event window of when the Constitutional Court's ruling was broadcast on television on 10 March 2017. We calculated the politically connected firms' relative stock return at second t as follows:

$$\text{Relative Return}_t = \frac{\text{Avg Price}_t^T}{\text{Avg Closing Price}^T} - \frac{\text{Avg Price}_t^C}{\text{Avg Closing Price}^C}, \tag{4}$$

where t and C are the treatment and control groups, respectively. Treatment groups are defined as firms that donated money to Mir or K-Sports foundations, and control groups are all the other firms included in the analysis.[10] Avg Price_t^T and Avg Price_t^C are the average stock prices of the treatment and control groups at second t on 10 March 2017. $\text{Avg Closing Price}^T$ is the average closing price on 9 March 2017 (a day before the ruling) of the firms that donated money to the foundations. $\text{Avg Closing Price}^C$ is defined similarly. We divided the average stock prices at second t by the previous day's average prices to account for the price differences between the treatment and control groups before the event. As such, Relative Return_t measures the degree to which the stock prices of the politically connected firms responded to the Court's ruling, relative to those of other firms.

Figure 2 plots Relative Return_t. The ruling started at 11 am, and ended at 11:22 am. The Constitutional Court first addressed procedural objections raised by Park's lawyers and then moved

[10]We restricted our analysis to firms whose stocks had been traded at least 100 times during the time window. The resulting sample included 301 firms (i.e., about 47% of the firms on the KOSPI as of March 10); among them, 89 companies belonged to the treatment group (about 30%). The results remained similar when we changed the threshold. For instance, we found a similar pattern when we dropped the firms whose stocks had been traded fewer than 10 times during the time window.

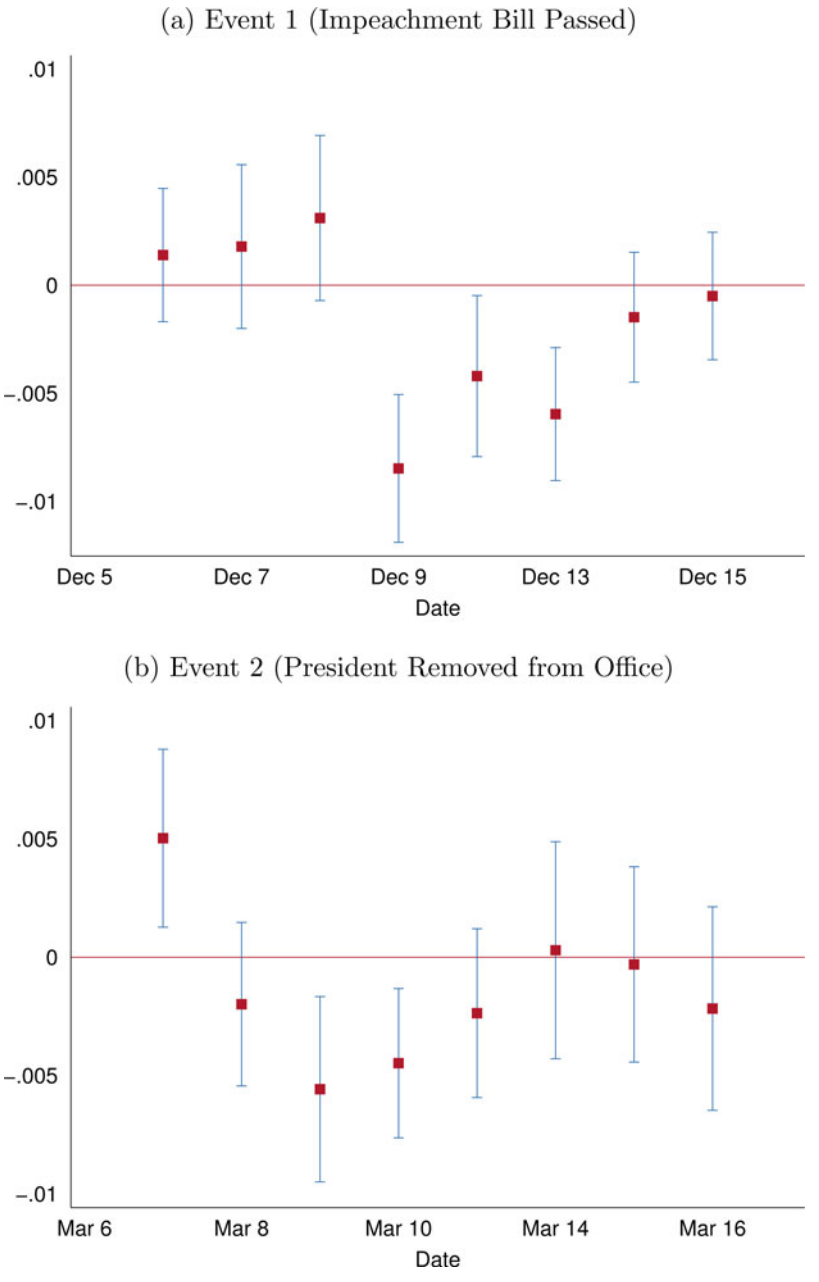

Figure 1. Stock market's response to the impeachment of President Park (by date).
Notes: The graph shows the estimates and 95% confidence intervals of the coefficient of Mir-K during the event periods. Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court.

on to the four charges of impeachment.[11] The Court found that three of the four offenses were not sufficiently serious to warrant impeachment, and this explains the initial increase in the politically

[11]The four charges were: abuse of power in the appointment of civil servants; infringement of the freedom of speech or press; neglect of the duty to protect the right to life and to faithfully carry out presidential responsibilities; and abuse of power in granting political power to Choi Soon-sil (Lim, 2017).

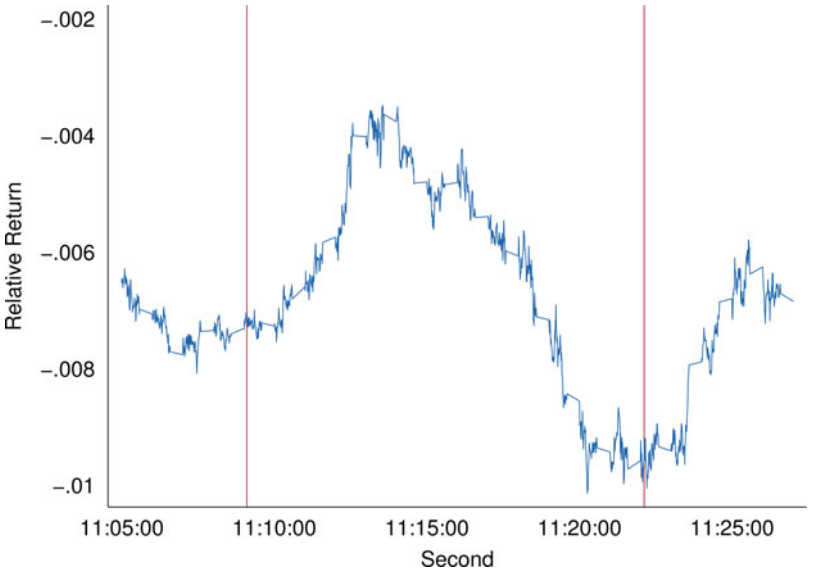

Figure 2. Stock market's response to the Constitutional Court's ruling.
Notes: The graph shows the second-by-second movements of the politically connected firms' average relative stock-market performance during the Constitutional Court's ruling on President Park Geun-hye's impeachment, on 10 March 2017.

connected firms' average relative stock returns (from 11:08 am to 11:12 am). At around 11:17 am, the Court started addressing the last charge. The Court found the abuse of power to benefit Choi Soon-sil to be a grave violation of the Constitution. The politically connected firms' average relative stock returns began to fall at this time. Figure 2 shows that the movement of the politically connected firms' average relative stock returns closely followed the likelihood of Park's removal by the sentencing. Therefore, it provides additional evidence that the stock market responded to Park's impeachment.

5. Conclusion

In this paper, we presented evidence that the impeachment of South Korea's President Park was costly for firms that had donated money to the foundations allegedly controlled by her close confidante. Our findings suggest that the abnormal stock returns of politically connected firms decreased by 1.14% when the National Assembly passed a bill to impeach the president, and by 0.68% when the Constitutional Court removed the president from office. We also provided evidence that the firms' stock returns rose and fell as the president's fate was being determined by the justices of the Constitutional Court. The results of our second-by-second analysis indicate that the firms' stock returns began to fall at the moment it became clear that the president would be removed from office.

In this study, we were able to identify and estimate the value of political connections, because of the uncertainty of impeaching a sitting president. Our second-by-second analysis provides evidence that our main results are not likely to be driven by other events that occurred at the same date when the National Assembly passed the impeachment bill or when the Constitutional Court upheld the impeachment.

However, we should point out the limitations of our event study method. First, our event study design is not well-suited for the analysis of long-term effects, because there are many factors that can affect firms' stock prices. Our results indicate that the relative stock prices of the politically connected firms bounced back shortly after the events. However, this does not necessarily suggest that the events had no long-term effects, because the stock prices of the politically connected firms and others may respond differently to any event that happens after the impeachment.

Second, although it was uncertain whether the president would be removed from office, we do not know the extent to which the uncertainty was resolved through votes in the legislature and by the Court's ruling. Therefore, we believe that our analysis is likely to underestimate the true impact of the impeachment on politically connected firms' stock returns. The fact that we still uncovered a sizable effect, highlights the importance of the political events we have analyzed in this study.

Supplementary materials. The supplementary material for this article can be found at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/SU0ZL0.

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Appendix A: Background

The scandal in question began in October 2016, when South Korean news media outlets revealed that Choi Soon-sil, President Park's close friend and informal advisor, had been illegally meddling in state affairs.[12] Among the allegations was that Choi and Park pressured businesses to donate money to the Mir and K-Sports foundations allegedly controlled by Choi. After the scandal broke, the president's job approval rating plummeted to 4%, the lowest among all South Korean presidents. 'Choi-gate' led to a series of large-scale protests against Park that called for her resignation.[13] Although Park delivered televised apologies three times to assuage the public's anger, the public protests continued. Since the first protest on 29 October 2016, tens of millions of citizens came to participate in weekly street protests, until President Park was impeached and eventually forced to leave office.

In November 2016, the National Assembly passed a bill to appoint a special prosecutor to investigate the scandal, and it held parliamentary hearings. Faced with massive protests against President Park and her refusal to step down, members of both opposition parties and the ruling party began to discuss presidential impeachment. According to the Constitution of South Korea, to impeach a sitting president, the National Assembly must pass an impeachment motion ratified by a two-thirds vote. If the motion for impeachment were passed, the president would be suspended from office until the Constitutional Court, which has jurisdiction over presidential impeachment, makes the final decision on whether the impeached president shall be removed from office. The Court must reach a verdict within 180 days and, to uphold the motion passed by the National Assembly, at least six of nine justices should vote for the impeachment.

The bill on President Park's impeachment was passed on 9 December 2016, with a vote of 234 (for) and 56 (against), with seven invalid votes and two abstentions. The Constitutional Court held 17 hearings between early January and late February 2017, to reach a verdict. On 10 March 2017, the Court voted 8-0 to uphold the National Assembly's impeachment motion to remove President Park from office.[14]

The case of impeaching the South Korean president is highly suitable for an event study. First, the outcomes of both the impeachment bill and the impeachment trial were quite uncertain. As mentioned, the Constitution of South Korea requires a two-thirds vote to pass an impeachment motion in the National Assembly. As of 5 December 2016, when the motion was first introduced, the ruling party (the Saenuri Party) had 128 seats, the most of any one party in the 300-seat legislature; the three remaining opposition parties held a combined 167 seats.[15] Therefore, assuming that all members of the opposition parties and independent members voted for impeachment, at least 28 members of the ruling party had to defect.

The outcome of the Constitutional Court's decision was also unpredictable. The Constitutional Court was thought to be conservative, as it comprised seven conservative justices, one moderate justice, and one progressive justice, all of whom had been appointed during the conservative administration of either Park Geun-hye or her predecessor Lee Myung-bak's.[16] Furthermore, two of the nine justices were scheduled to retire in January and March 2017, and at least six justices were required to uphold the impeachment motion.[17]

Second, a large number of firms were involved in the scandal. One of the main accusations against Park during the impeachment trial was that she had forced firms to donate money to two foundations allegedly under the control of Choi Soon-sil, her close friend. During the impeachment trial, the Constitutional Court found that the foundations were used for Choi's private gains. Several corporate executives of the firms that had donated money to the foundations were indicted on bribery charges, as they had allegedly donated money in exchange for political favors from Park.

[12]The story began as JTBC, a cable TV network, obtained a tablet PC allegedly once owned by Choi. The tablet PC contained texts and images suggesting that Choi had been involved in making and implementing both domestic and foreign policies. For instance, among the files discovered in the tablet was a draft of a speech Park gave in Dresden, Germany in 2014. The computer's log file suggested that Choi received drafts of presidential speeches and frequently edited them.

[13]The protests were South Korea's largest since becoming a democracy in 1987.

[14]The ruling removed Park's immunity from prosecution. She was indicted and arrested 3 weeks after the ruling, on charges of bribery and abuse of power. As of this writing (December 2017), she is still under detention, and the trial is in progress. The ruling also prompted a snap presidential election. Moon Jae-in, the candidate of the Democratic Party (center-left party), won the election and took office in May 2017.

[15]There were seven independent members.

[16]For instance, all but one justice voted for the dissolution of the Unified Progressive Party, a progressive party accused of supporting North Korea.

[17]According to the Constitution, justices serve renewable 6-year terms and are required to retire at the age of 65. One of the nine justices, Chief Justice Park Han-chul, retired on 31 January 2017, as his term had expired.

Appendix B: Summary statistics

Table B.1. Summary statistics

	Mean	S.D.	Min	Max	*N*
Money to Mir or K-Sports	0.166	0.373	0.000	1.000	752
Market capitalization (hundred trillion KRW)	0.017	0.109	0.000	2.826	754
Cumulative stock return (event 1)	0.018	0.037	−0.099	0.357	754
Cumulative abnormal stock return (event 1)	0.019	0.037	−0.092	0.350	754
Cumulative stock return (event 2)	0.010	0.041	−0.247	0.457	754
Cumulative abnormal stock return (event 2)	−0.001	0.041	−0.265	0.438	754

Notes: Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court.

Appendix C: Alternative specification

Following Ansolabehere *et al.* (2004), we estimate the following model, a modified capital asset pricing model:

$$R_{it} = \alpha_i + \beta_i M_t + \gamma_1 \text{ Event } 1_t + \gamma_2 \text{ Event } 2_t + \gamma_3 \text{ Event } 1 \times \text{Mir}{-}\text{K}_i + \gamma_4 \text{ Event } 2_t \times \text{Mir}{-}\text{K}_i + \varepsilon_{it}, \quad (5)$$

where α_i is the firm fixed effect and β_i measures the firm-specific effect of the market return. It should be noted that the main effect of Mir-K$_i$ is absorbed by the firm fixed effects.

If the National Assembly's decision to impeach the president (event 1) and the Constitutional Court's ruling to remove the president from office (event 2) had a negative effect on the values of the firms politically connected to the president, γ_3 and γ_4 would be negative. To ensure that the size of the firms – and not the donation – drove the results, we also included the interaction terms between the stock-market capitalization value and the two events. The results are reported in Table C.1. Consistent with our previous results, we found that the value of the firms that had donated money to the Mir or K-Sports foundation decreased after the impeachment and removal of the president.

Table C.1. Stock market's response to the impeachment of President Park (alternative specification)

	Dependent variable			
	Cumulative			
	Stock return		Abnormal stock return	
	(1)	(2)	(3)	(4)
Market return	0.862***	0.862***		
	(0.016)	(0.016)		
Event 1	0.011***	0.011***	0.011***	0.011***
	(0.001)	(0.001)	(0.001)	(0.001)
Event 2	−0.000	−0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Event 1 × money to Mir or Sports-K	−0.006***	−0.006***	−0.006***	−0.006***
	(0.001)	(0.001)	(0.001)	(0.001)
Event 2 × money to Mir or Sports-K	−0.002*	−0.002*	−0.003**	−0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Event 1 × market cap		−0.015**		−0.012**
		(0.007)		(0.005)
Event 2 × market cap		−0.001		0.003
		(0.002)		(0.003)
N	232,341	232,341	232,341	232,341
R^2	0.042	0.043	0.002	0.002

Notes: S.E. in parentheses are clustered by firm. Firm fixed effects are included in all columns. Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court. ***P <0.01; **P <0.05; *P <0.1.

Appendix D: Additional robustness checks

Table D.1. Stock market response to the impeachment of President Park (without parent companies)

	Event 1		Event 2	
	Cumulative		Cumulative	
	Stock return (1)	Abnormal stock return (2)	Stock return (3)	Abnormal stock return (4)
Money to Mir or K-Sports	−0.0091***	−0.0079**	−0.0081***	−0.0091***
	(0.0031)	(0.0031)	(0.0027)	(0.0027)
Market cap	−0.1300***	−0.1341***	0.0789***	0.0679***
	(0.0264)	(0.0266)	(0.0274)	(0.0259)
N	731	731	731	731
R^2	0.025	0.024	0.006	0.006

Notes: Robust S.E. are given in parentheses. This table repeats the analyses reported in Table 1 after dropping all the parent companies. Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court. ***P <0.01; **P <0.05; *P <0.1.

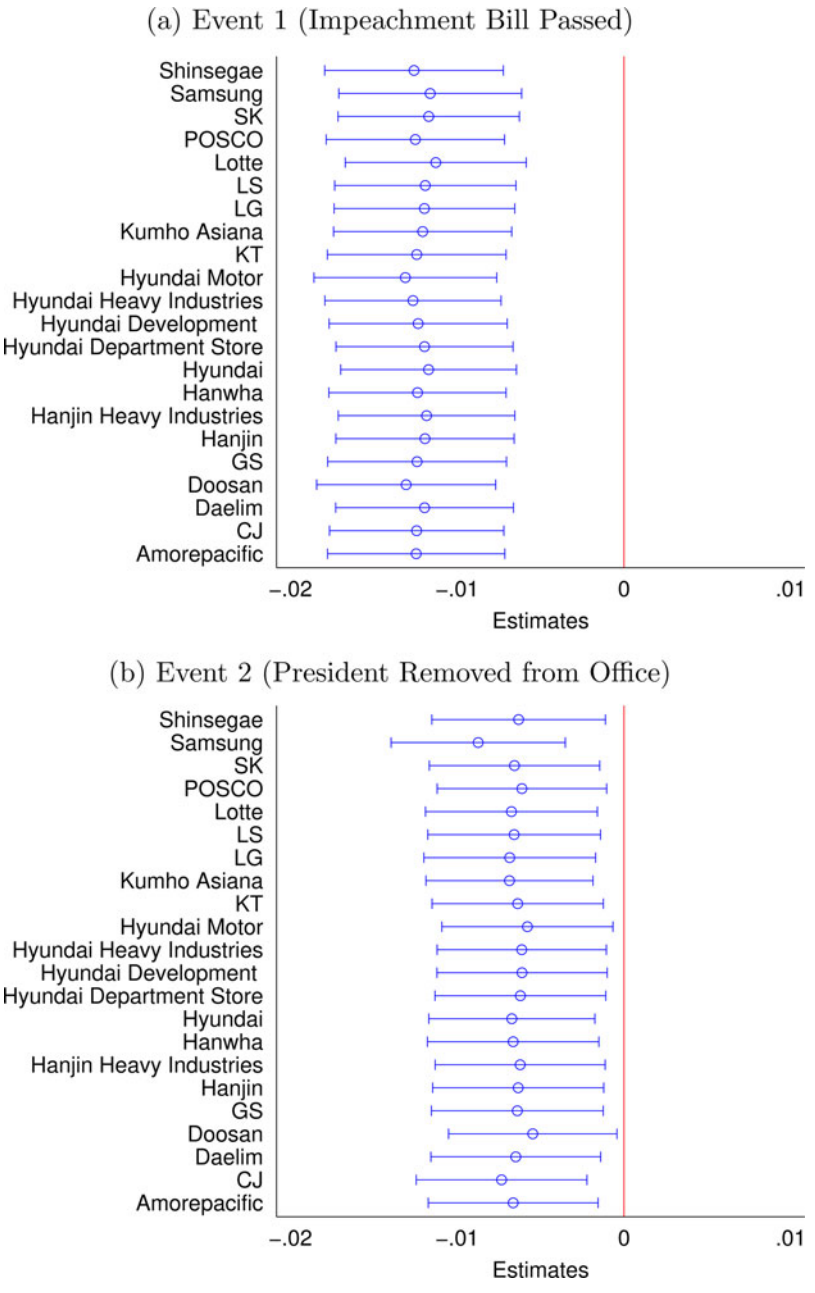

Figure D.1. Stock market's response to the impeachment of President Park (robustness check).
Notes: This figure repeats the analyses reported in Table 1, after removing, one at a time, the companies that donated money. Each of the company names on the vertical axis indicates the company that was excluded in each estimation. The hollow circles denote the estimates of the coefficient of Mir-K, and the horizontal lines indicate the 95% confidence intervals. Event 1: The passing of the impeachment bill in the National Assembly. Event 2: The ruling by the Constitutional Court.

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