The Impact of Political Contributions and Election Bets on Abnormal Stock Returns and Shareholder Equity in Taiwan's Presidential Elections

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Abstract

In recent years, there has been extensive research in the field of political campaign financing. The theoretical discussions on political campaign expenditures and donations, as well as the corresponding empirical results, remain controversial. This study aims to explore the relationship between political contributions and political connections, particularly the intriguing relationship between political contributions and the value of donating companies. Using event study methodology, the study examines the impact of election events on the short-term Cumulative Abnormal Returns (CAR) of company stock prices. Additionally, the study equations research hypotheses and constructs a multiple regression model, adjusting for corporate characteristic parameters and econometric parameters, to investigate the effects of the Political Connections Index (PCI) and Election Betting Results on the long-term corporate value of companies that donate political contributions. Insights can be provided on the impact of corporate political contributions and election betting results on short-term cumulative abnormal returns and the long-term efficiency of corporate shareholder equity.

Keywords: political contribution, political connection index, election betting result, cumulative abnormal return, shareholder equity

1. Introduction

Taiwan, after the Republic of China government retreated from mainland China in 1949, superficially implemented parts of a democratic system but in reality practiced authoritarian rule, resulting in a society filled with a façade of democracy. It was not until 1987, during President Chiang Ching-Kuo's administration, that martial law was lifted, allowing the relationship between politics and business, known as "political-business relations," to thrive alongside the burgeoning development post-martial law. The democratization movement significantly advanced, and under rising democratic awareness, various parties emerged, leading to a proliferation of political parties. However, as the political system remained incomplete and the wave of democracy continued to advance, democratization led to collaboration between political factions and corporate enterprises. Consequently, the combination of political-business relations expanded, impacting both political and corporate development and creating a complex relationship between politics and business.

However, Taiwan's democratization process has been relatively smooth. Since the presidential election in March 1996, Taiwan has been classified as an "electoral democracy" and has joined the ranks of "free democracies." According to the Freedom in the World report (2002-2003) by Freedom House in New York, there are 121 "electoral democracies" globally, of which 89 are considered "free democracies" (Karatnycky, 2003). Under the rising awareness of democracy and the pressure from elected representatives, the government actively promoted the Sunshine Act. On March 18, 2004, Taiwan's Legislative Yuan passed the much-anticipated "Political Contributions Act" in its third reading, and it was promulgated on March 31 of the same year. Years after its enactment, the Control Yuan significantly disclosed relevant information on "The Control Yuan Sunshine Law Theme Website" (http://sunshine.cy.gov.tw). However, the law's applicability for inquiry was limited to in-person written applications at the Control Yuan until 2018, when the information was finally made fully accessible online. Achieving full transparency took more than a decade.

This study collects data from the 16-year period between 2004 and 2020, during Taiwan's presidential elections in the democratization process. It observes that elections in Taiwan are not only linked to local factions due to vested

interests but also involve significant election expenses, often costing presidential candidates billions to tens of billions of New Taiwan Dollars. This has sparked interest in exploring political contributions from listed and over-the-counter companies to the supported parties. The impact of political contributions, political connections, and election betting results on the stock returns of the donating companies, shareholder equity, corporate performance, and enterprise value is a topic worthy of academic research.

2. Literature Review

Political scientists believe that elected officials provide interest groups with more access opportunities, thus contributing more to the officials' election campaigns (Herndon, 1982; Gopoian, 1984; Kalla & Broockman, 2016). Similar to buying opportunities with money, political opportunities are positively correlated with corporate contributions to political candidates' campaigns (Safire, 1998; Shon, 2006; Brown & J. Huang, 2020). Faccio (2006) pointed out that in countries with weaker legal systems or higher corruption, political connections are more valuable to companies. Companies with good government-business relationships are indeed more likely to receive government assistance compared to similar companies without such connections (Zhou, 2005; Faccio et al., 2006; W. H. Chen, 2010). Political investment is one way for enterprises to develop government-business relationships, similar to buying opportunities with money; political opportunities are positively correlated with corporate contributions to political candidates' campaigns (Faccio et al., 2006).

2.1 Political Connections and Cumulative Abnormal Returns

Lin (2003) used the "event study methodology" to investigate the relationship between political connections and abnormal returns. The empirical results indicated that when key executives of listed companies are elected as legislators, the stock market experiences positive average abnormal returns, showing a clear upward trend (W. B. Huang, 2002; S. L. Chen, 2002). Conversely, when such executives lose the election, although there are positive average excess returns, they are not significant, and the stock price drops significantly compared to the previous trading day. This indicates that election loss announcements are short-term negative news for investors. The empirical results revealed that when the Blue Camp wins the presidential election, companies with Blue Camp-affiliated board members experience significant positive cumulative abnormal returns in the stock market. On the other hand, the defeat of the Green Camp results in negative abnormal returns for companies affiliated with the Green Camp, negatively affecting their stock prices (K. W. Chang, 2010; W. Y. Chang & K. W. Chang, 2011).

Knight (2006) found that companies benefiting from Bush's policy content during the 2000 presidential election had a daily average abnormal return of 3%, while those benefiting from Gore's policy content had a daily average abnormal return of -6%. The difference between the two was 9% and significant. Furthermore, in monthly data, the gap between the two widened to 16%. Cooper et al. (2009) discovered a positive relationship between the level of corporate donations sponsoring election candidates and future company returns. Particularly, when companies donate to candidates in the same state as their headquarters, the impact on abnormal returns becomes more significant.

Goldman et al. (2009) used the U.S. S&P500 as their research sample. They categorized companies into pro-Republican and pro-Democrat factions based on the political backgrounds of their board members, observing the changes in stock price trends of companies with different political affiliations following U.S. presidential election results. The empirical results revealed that when the Republican Party won the 2000 U.S. presidential election, the cumulative abnormal returns of pro-Republican companies showed a significant positive relationship. Conversely, companies with a pro-Democrat affiliation exhibited significantly negative results when the Democratic Party lost the election.

2.2 Political Connections and Shareholder Equity

Goldman et al. (2009) used the political affiliations of board members to represent a company's political stance and explored the relationship between winning government procurement contracts and political connections. It found that when the leadership of the White House and the Senate shifted from the Democratic Party to the Republican Party in 1994, and when the Republican Party won the presidential election in 2000, resulting in the Democratic Party losing power, companies affiliated with the Republican Party experienced an increase in the total value of government procurement contracts after the election, while those affiliated with the Democratic Party experienced a relative decrease. Even after controlling for company characteristics and industry factors, the results remained statistically significant, indicating that political connections indeed have a positive impact on company value (M. H. Chen et al., 2019).

Despite significant research interest in the impact of political connections on firm value, the results regarding whether political connections can enhance firm value are mixed and varied (Goldman et al., 2009; Imai, 2006;

Khwaja and Mian, 2004; Ang and Boyer, 2007). Faccio (2006) examined 47 countries and found a positive correlation between political connections and firm value. Specifically, the research indicated that political connections are common in highly corrupt countries. However, Fan et al. (2007) discovered that in the People's Republic of China, the political connections between politicians and CEOs are negatively related to post-IPO performance.

Jayachandran (2006) studied the 2001 event where U.S. Senator Jim Jeffords switched parties from Republican to Democrat, examining the changes in the market value of companies that had previously made political contributions. The results indicated that after the senator's party switch, the market value of companies adjusted proportionally with their donation amounts. Specifically, companies supporting the Democratic Party saw an increase in market value by 0.4% for every $250,000 donated, while companies supporting the Republican Party experienced a 0.8% decrease. Empirical research highlights that the value derived from political connections remains significant, with political engagement enhancing value (Cooper et al., 2009; Ovtchinnikov and Pantaleoni, 2012; Faccio and Hsu, 2017; Gounopoulos et al., 2021). Conversely, other studies suggest that political contributions might ultimately destroy value (Chaney et al., 2011; Lee et al., 2014; Piotroski et al., 2015).

Regarding the impact of corporations deriving value from political access on social welfare, political economists have proposed contrasting views. On one hand, engaging with political figures may allow firms to exert undue influence on elected officials and obtain political benefits (Baye et al., 1993; Grossman and Helpman, 1994; Zingales, 2017). From this perspective, political access facilitates a quid pro quo relationship between firms and elected officials, where policy favors are exchanged for the benefit of politicians. However, on the other hand, political access may enable firms to provide policy-relevant information, which in turn helps elected officials make more informed decisions regarding policies that affect businesses (Austen-Smith, 1995 & 1998; Cotton, 2009).

2.3 Election Betting Results and Shareholder Equity

J. A. Knight (1998) stated that value creation in a company is the process of generating organizational performance wealth through stock price appreciation and dividend payments. Goldman et al. (2009) pointed out that nominating a politically connected director to the board increases company value, as the company can derive future political benefits from these limited connections. Despite the inherent uncertainty in election results, this fact underscores the importance of political connections to corporate value. In summary, the uncertainty of elections exacerbates any attempts to find evidence of the impact of political connections on stock returns. Cooper et al. (2009) conducted an empirical analysis on the relationship between corporate financial support for political election candidates and firm value. The study found that the level of corporate donations to support election candidates is positively correlated with the company's future returns.

The results of election betting can significantly impact market confidence and policy expectations, subsequently influencing stock prices and shareholder equity. Changes in government personnel post-election may introduce different economic policies, such as supporting specific industries or committing to a series of economic measures, which can variably affect industries and companies. This, in turn, impacts the operating environment and profitability of listed companies, thereby affecting shareholder equity. However, the impact of election betting results on shareholder equity cannot be fully explained by a single factor alone. It is necessary to consider the company's performance, industry development trends, international economic environment, and other factors. In summary, the impact of election betting results on shareholder equity is a complex and dynamic issue that requires a comprehensive consideration of various factors for thorough analysis.

3. Research Methodology

3.1 Data Samples and Study Period

The time scope of the sample data in this study covers the past 20 years of presidential elections in Taiwan since the announcement of the Political Contributions Act. The period extends from six months before the election to the day before the voting day. Due to the large volume of political donation data and the legal limitations on donation amounts that candidates can accept during the campaign period, this study only collected data on donations exceeding 500,000 NTD for statistical analysis. The research subjects are listed and over-the-counter companies that donated political contributions to party candidates. The stock price data of these listed and over-the-counter companies are sourced from the Taiwan Economic Journal (TEJ) (Note 1) database.

3.2 Variable Descriptions

In exploring the impact of political connection variables on the short-term returns and long-term corporate value of companies that donate political contributions, Cumulative Abnormal Returns (*CAR*) are used to investigate the

short-term return rates around the announcement day, that is, during the event period (t_1, t_2). Excess Return Rate (*ERR*) (Note 2) and Shareholder Equity (*Equity*) are used to assess the long-term corporate value impact of companies donating political contributions over four election terms (16 years).

The independent variables related to political connections are selected from different perspectives, including Election Betting Results (*Election_Bet*) (Note 3), Political Connection Index (*PCI_Cand*) (Note 4), Election Betting Strength (*Election_BS*) (Note 5), Political Contributions Intensity (*PCI_DPP_SS*, *PCI_KMT_SS*) (Note 6), and Political Stance (*Party*) (Note 7).

In exploring the independent variables related to corporate value (*CorpValue*), we refer to the estimation equation by Demsetz and Lehn (1985). The selected financial report indicators to represent the function of corporate value (*CorpValue*) include Investment Activity Funds (*IAF*), Financing Activity Funds (*FAF*), Cash Flow Ratios (*CashFR*), Price-Book Ratio (*PBR*), Sales Tax Rate (*TaxR*), and Interest Expense Ratio (*InterestR*), as shown below.

$$\text{CorpValue} = f(IAF, FAF, CashFR, PBR, TaxR, InterestR) \quad (1)$$

To enhance the accuracy of the research tests, we reference literature related to political election markets and recent financial literature that frequently mentions cross-sectional variables with the greatest explanatory power for stock market returns, including company size (Fama and French, 1993), price-to-book ratio (Daniel and Titman, 1997; Fama and French, 1993), and price momentum (Carhart, 1997; Jegadeesh and Titman, 1993). The variables selected for this study are Company Size (*Size*) and Industry Type (*Industry*) (Note 8) as control variables for this study.

3.3 Research Hypothesis

This study aims to verify the impact of election betting results on the short-term cumulative abnormal returns of listed companies that donate political contributions and their long-term corporate value. It explores the correlation between the extent, strength, and political stance of corporate political contributions and election betting results, thus proposing the following hypotheses for empirical analysis.

Hypothesis I: Corporate political donations have a positive impact on the short-term cumulative abnormal returns of publicly listed companies.

Hypothesis II: Corporate political contributions to elected political party candidates have a positive impact on the long-term stock price excess returns of listed companies.

To construct the multiple regression model as follows, Equation (2), uses the collected data, divided into two types of cross-sectional data: those where Democratic Progressive Party (DPP) candidates won and those where Kuomintang (KMT) candidates won. This data is then incorporated into the equation for conducting a multiple regression empirical analysis.

$$ERR_{i,t} = \beta_0+\beta_1 Ln(PCI\_DPP_{i,t})+\beta_2 Ln(PCI\_KMT_{i,t})+\beta_3 CorpValue_{i,t}+\beta_4 Ln(Size_{i,t}) +\beta_5 Industry_{i,t} \quad (2)$$

Where β_s are the regression parameters, *s* ranges from 0 to 5, *i* represents the individual firm, and *t* denotes the election term.

Hypothesis III: The election betting results have a positive impact on the long-term shareholder equity of listed companies that donate political contributions to candidates from the winning party.

To construct the multiple regression model as follows for empirical research analysis.

$$Ln(Equity_{i,t}) = \beta_0+\beta_1 Election\_Bet_{i,t}+\beta_2 CorpValue_{i,t}+\beta_3 Ln(Size_{i,t}) +\beta_4 Industry_{i,t} \quad (3)$$

Where β_s are the regression parameters, *s* ranges from 0 to 4, *i* represents the individual firm, *t* denotes the election term, and *CorpValue* is defined in equation (1).

3.4 Research Methods

3.4.1 Event Study

Using the event study method from the Taiwan Economic Journal (TEJ) (Note 9).The event days chosen are the presidential and vice-presidential election days of the 12th to 15th terms. The method uses the mean adjustment model, replacing the missing values of the event period securities with zero, and analyzes the cumulative abnormal returns of stock prices. The estimation period (Note 10) is chosen as the period before the event (-360, -61).

Using $CAR_{i,p}$ to denote the cumulative abnormal return (*CAR*) of company *i* around different election events for party

p, statistical analysis is conducted on the daily stock price data over six event periods: (-3, +3), (-5, +5), (-10, +10), (-20, +20), (-30, +30), and (-60, +60). The study investigates the impact of political contributions by listed companies to various political parties on the short-term performance of these companies' Cumulative Abnormal Returns (*CAR*) during each event period.

3.4.2 Multiple Regression Model

The research subjects are listed companies, with financial statement data and stock price data sourced from the Taiwan Economic Journal (TEJ) database. The data period spans from January 2008 to January 2024, covering quarterly data from the 12th to the 15th presidential and vice-presidential election cycles, including the periods before elections and during their terms. Multiple regression analysis is employed to empirically test the three hypotheses presented in previous subsection 3.3 from various perspectives to understand the relationship between corporate types and corporate political connections. Additionally, the study investigates the correlation between political contributions during Taiwan's presidential elections, abnormal stock returns, and shareholders' equity, further analyzing the long-term impact of political connections established by listed companies with different political parties on corporate shareholders' wealth.

4. Empirical Analysis

4.1 Descriptive Statistical Analysis

This subsection collects data on political contributions to presidential and vice-presidential election funds for the 12th to 15th elections, focusing on donors and groups contributing individual donations over NT$100,000, as shown in Table 1. Statistical analysis was conducted on donors who made more than two contributions and donated over NT$1 million.

There were 1,733 donations with a total amount of NT$570,257,265. For the 12th to 15th presidential and vice-presidential election political donation accounts, the DPP received a total of 1,121 donations from 121 listed companies and 63 groups included, with a total donation amount of NT$313,159,645. The KMT received a total of 612 donations from 97 listed companies and 53 groups included, with a total donation amount of NT$257,097,620.

It is evident that over the past 16 years, in Table 1, for the 12th to 15th presidential and vice-presidential elections, the number of political contributions and the total amount donated to the campaign accounts of the winning candidates consistently exceeded those of the losing candidates. Similarly, it shows that for the 12th to 15th presidential and vice-presidential elections, the number of listed companies and groups donating to the political donation accounts of the winning candidates consistently exceeded those of the losing candidates. The candidates with higher numbers of donations and total donation amounts were the winners in that election period.

Therefore, the number of donations and the total donation amount can serve as leading indicators of the presidential and vice-presidential election results, reflecting the trend of public opinion. This phenomenon seems to suggest that the expected results of the election can be predicted before the election itself. Whether this discovery is a coincidence or an early manifestation of public opinion remains to be verified by the upcoming presidential and vice-presidential elections.

4.2 Collinearity Test

In general, researchers believe that collinearity is indicated by a correlation coefficient below 0.3 for low correlation, 0.3 to 0.7 for moderate correlation, and above 0.7 for high correlation (P. H. Huang, 2018). From Table 2 and Table 3, the correlation coefficients between the independent variables, the corporate political connection index with the Democratic Progressive Party (*PCI_DDP*) and the political contribution intensity to the DPP (*PCI_DDP_SS*), as well as the corporate political connection index with the Kuomintang (*PCI_KMT*) and the political contribution intensity to the KMT (*PCI_KMT_SS*), are greater than 0.7, indicating a high correlation. Therefore, in the multiple regression model, only one of the independent variables can be selected for use.

4.3 The Impact of Corporate Political Contributions on the Short-Term Cumulative Abnormal Returns of Publicly Listed Companies

This subsection focuses on event study analysis for Hypothesis I. Using the 12th to 15th presidential and vice-presidential elections as events, we conducted a statistical analysis of corporate political contributions. The companies were categorized into three types: those donating solely to the DPP, those donating solely to the KMT, and those donating to both parties. The analysis employed the TEJ event study method to observe the impact of different donation types on short-term cumulative abnormal stock returns.

Table 1. Statistical Data of Donation Amounts for the 12th to 15th Presidential and Vice-Presidential Elections

Term	Political Party	Candidate	Number of Donations	Donation Amount	Number of Listed Companies	Number of Groups	Number of Group Representative Company	Average /Donation	Max. Value	Min. Value	Standard Deviation
12	DPP	Xie C. T., Su Z. C.	271	113,905,000	62	36	46	420,314	1,000,000	100,000	358,186
	KMT*	Ma Y. J., Xiao W. C.	343	166,253,020	73	37	51	484,703	1,000,000	100,000	387,782
13	DPP	Tsai I. W., Su J. Q.	172	35,235,120	19	15	15	204,855	1,000,000	100,000	182,758
	KMT*	Ma Y. J., Wu D. Y.	179	61,877,600	38	29	33	345,685	1,000,000	100,000	344,125
14	DPP*	Tsai I. W., Chen J. R.	365	84,212,857	47	25	25	230,720	1,000,000	100,000	213,729
	KMT	Zhu L. L., Wang R. X.	2	300,000	0	0	0	150,000	200,000	100,000	70,711
15	DPP*	Tsai I. W., Lai Q. D.	313	79,806,668	28	16	17	254,973	1,000,020	100,000	227,515
	KMT	Han G. Y., Chang S. Z.	88	28,667,000	11	8	10	325,761	1,000,000	100,000	302,462
Subtotal		DPP	1,121	313,159,645	121	63	74	279,357	1,000,020	100,000	268,125
Subtotal		KMT	612	257,097,620	97	53	69	420,094	1,000,000	100,000	370,392
Total			1,733	570,257,265	177	80	103	329,058	1,000,020	100,000	315,297

Note:

1. Collected data on donors who contributed more than 100,000 NTD in a single donation to the political donation accounts of the 12th to 15th presidential and vice-presidential elections.

2. Collected data on groups that made more than two political contributions exceeding one million NTD to the political donation accounts of the 12th to 15th presidential and vice-presidential elections.

3. *Indicates the political party of the elected president and vice-president for each term.

4. The KMT is Kuomintang, the DPP is Democratic Progressive Party.

Table 2. Analysis of Correlation Coefficients between Corporate Political Contributions and Long-term Excess Return Rate on Stock Prices during the 12th to 15th Presidential and Vice-Presidential Elections

Correlation	ERR	ELECTION_BET	LNPCI_DPP	LNPCI_KMT	LNPCI_DPP_SS	LNPCI_KMT_SS	IAF	FAF	CASHFR	PBR	TAXR	INTERESTR	LNSIZE	INDUSTRY
ERR	1	-0.0124	-0.0117	-0.0177	-0.0117	-0.0177	0.0061	-0.0010	0.0251	0.0953	-0.0200	-0.0028	-0.0160	-0.0179
ELECTION_BET	-0.0124	1	0.9975	-0.1204	0.9975	-0.1204	0.0323	0.0434	0.0224	-0.0231	-0.0193	-0.0136	-0.1756	0.1594
LNPCI_DPP	-0.0117	0.9975	1	-0.1252	0.9999	-0.1252	0.0295	0.0432	0.0177	-0.0226	-0.0193	-0.0134	-0.1694	0.1646
LNPCI_KMT	-0.0177	-0.1204	-0.1252	1	-0.1252	0.9999	-0.0735	-0.0016	0.0316	-0.1102	-0.0046	-0.0076	0.1663	-0.0348
LNPCI_DPP_SS	-0.0117	0.9975	0.9999	-0.1252	1	-0.1252	0.0295	0.0432	0.0177	-0.0226	-0.0193	-0.0134	-0.1694	0.1646
LNPCI_KMT_SS	-0.0177	-0.1204	-0.1252	0.9999	-0.1252	1	-0.0735	-0.0016	0.0316	-0.1102	-0.0046	-0.0076	0.1663	-0.0348
IAF	0.0061	0.0323	0.0295	-0.0735	0.0295	-0.0735	1	0.0338	-0.0269	0.0024	-0.0054	0.0043	-0.2574	0.0096
FAF	-0.0010	0.0434	0.0432	-0.0016	0.0432	-0.0016	0.0338	1	-0.0526	-0.0233	-0.0237	-0.0055	-0.1194	0.0061
CASHFR	0.0251	0.0224	0.0177	0.0316	0.0177	0.0316	-0.0269	-0.0526	1	-0.0468	0.0146	0.0009	0.0508	-0.0244
PBR	0.0953	-0.0231	-0.0226	-0.1102	-0.0226	-0.1102	0.0024	-0.0233	-0.0468	1	0.0106	0.0040	-0.1642	-0.1347
TAXR	-0.0200	-0.0193	-0.0193	-0.0046	-0.0193	-0.0046	-0.0054	-0.0237	0.0146	0.0106	1	-0.0512	-0.0021	0.0018
INTERESTR	-0.0028	-0.0136	-0.0134	-0.0076	-0.0134	-0.0076	0.0043	-0.0055	0.0009	0.0040	-0.0512	1	-0.0004	-0.0075
LNSIZE	-0.0160	-0.1756	-0.1694	0.1663	-0.1694	0.1663	-0.2574	-0.1194	0.0508	-0.1642	-0.0021	-0.0004	1	0.2834
INDUSTRY	-0.0179	0.1594	0.1646	-0.0348	0.1646	-0.0348	0.0096	0.0061	-0.0244	-0.1347	0.0018	-0.0075	0.2834	1

Note:

1. Dependent variable: Excess Return Rate (*ERR*); Independent variables: Election Bet Result (*Election_Bet*), Political Connection Index for Donations to the Democratic Progressive Party (*PCI_DPP*), Political Connection Index for Donations to the Kuomintang (*PCI_KMT*), Political Contributions Intensity (*PCI_DPP_SS*, *PCI_KMT_SS*), and Corporate Value (*CorpValue*), including Investment Activities Funds (*IAF*), Financing Activities Funds (*FAF*), Cash Flow Ratio (*CashFR*), Price-to-Book Ratio (*PBR*), Operating Tax Rate (*TaxR*), and Interest Expenditure Ratio (*InterestR*); Control variables: Company Size (*Size*) and Industry Type (*Industry*).

2. Generally, researchers consider a correlation coefficient below 0.3 as low correlation, between 0.3 and 0.7 as moderate correlation, and above 0.7 as high correlation (P. H. Huang, 2018).

Table 3. Correlation Coefficient Analysis of Election Bet Results and Political Donation Intensity on Shareholder Equity for the 12th to 15th Presidential and Vice-Presidential Elections

Correlation	LNEQUITY	ELECTION_BET	LNPCI_DPP	LNPCI_KMT	LNPCI_DPP_SS	LNPCI_KMT_SS	IAF	FAF	CASHFR	PBR	TAXR	INTERESTR	LNSIZE	INDUSTRY
LNEQUITY	1	0.0018	-0.0941	0.2031	-0.0927	0.2016	-0.2137	-0.1132	0.0313	-0.1285	-0.0047	-0.0139	0.9310	0.1915
ELECTION_BET	0.0018	1	0.5417	0.4535	0.5338	0.4614	0.0007	0.0096	0.0051	-0.0265	-0.0112	-0.0046	0.0017	0.0729
LNPCI_DPP	-0.0941	0.5417	1	-0.0591	0.9996	-0.0580	0.0205	0.0221	0.0130	-0.0071	-0.0319	0.0049	-0.0915	0.0662
LNPCI_KMT	0.2031	0.4535	-0.0591	1	-0.0550	0.9996	-0.0374	-0.0160	0.0049	-0.0800	-0.0039	-0.0014	0.1882	-0.0213
LNPCI_DPP_SS	-0.0927	0.5338	0.9996	-0.0550	1	-0.0516	0.0201	0.0217	0.0131	-0.0075	-0.0323	0.0055	-0.0890	0.0651
LNPCI_KMT_SS	0.2016	0.4614	-0.0580	0.9996	-0.0516	1	-0.0371	-0.0164	0.0046	-0.0785	-0.0039	-0.0016	0.1879	-0.0206
IAF	-0.2137	0.0007	0.0205	-0.0374	0.0201	-0.0371	1	-0.0035	-0.0080	0.0024	0.0085	0.0013	-0.2213	-0.0312
FAF	-0.1132	0.0096	0.0221	-0.0160	0.0217	-0.0164	-0.0035	1	-0.0172	-0.0228	-0.0104	-0.0002	-0.1033	0.0004
CASHFR	0.0313	0.0051	0.0130	0.0049	0.0131	0.0046	-0.0080	-0.0172	1	-0.0078	0.0049	1.9427e-05	0.0258	-0.0280
PBR	-0.1285	-0.0265	-0.0071	-0.0800	-0.0075	-0.0785	0.0024	-0.0228	-0.0078	1	0.0159	-0.0007	-0.1586	-0.0925
TAXR	-0.0047	-0.0112	-0.0319	-0.0039	-0.0323	-0.0039	0.0085	-0.0104	0.0049	0.0159	1	-0.0456	-0.0072	0.0179
INTERESTR	-0.0139	-0.0046	0.0049	-0.0014	0.0055	-0.0016	0.0013	-0.0002	1.9427e-05	-0.0007	-0.0456	1	-0.0028	-0.0003
LNSIZE	0.9310	0.0017	-0.0915	0.1882	-0.0890	0.1879	-0.2213	-0.1033	0.0258	-0.1586	-0.0072	-0.0028	1	0.2469
INDUSTRY	0.19153	0.0729	0.0662	-0.0213	0.0651	-0.0206	-0.0311	0.0004	-0.0280	-0.0925	0.0179	-0.0003	0.2469	1

Note:

1. Dependent variable: Shareholder Equity (*Equity*); independent variables: Election Bet Results (*Election_Bet*), Political Contributions Intensity to the Democratic Progressive Party (*PCI_DPP_SS*), Political Contributions Intensity to the Kuomintang (*PCI_KMT_SS*), and Corporate Value (*CorpValue*), including Investment Activities Funds (*IAF*), Financing Activities Funds (*FAF*), Cash Flow Ratio (*CashFR*), Price-to-Book Ratio (*PBR*), Operating Tax Rate (*TaxR*), and Interest Expenditure Ratio (*InterestR*); control variables: Company Size (*Size*) and Industry Type (*Industry*).

2. Generally, researchers consider a correlation coefficient below 0.3 to be low, between 0.3 and 0.7 to be moderate, and above 0.7 to be high (P. H. Huang, 2018)

During the 12th and 13th presidential and vice-presidential elections, a statistical analysis of daily data over 60 trading days before and after the elections was conducted to observe changes in CAR. It was found that CAR began to increase around the 30th trading day before the election and continued to rise until the 38th trading day after the election, after which it gradually declined, as illustrated in Figure 1.Despite the KMT candidates winning the 12th and 13th presidential and vice-presidential elections, the stock performance of companies that donated solely to the Democratic Progressive Party (DPP) did not show any negative impact. Similarly, the stock performance of companies that donated solely to the KMT did not exhibit a significantly more aggressive positive impact.However, for companies that donated to both the DPP and the KMT, the stock performance showed a positive impact. The average *CAR* for these companies was superior to those that donated to a single party, indicating a more favorable outcome, as shown in Table 4.

Table 4. Political Stance of Companies and Cumulative Abnormal Returns during the 12th to 15th Presidential and Vice-Presidential Elections (Listed Companies)

Term	Political Party	Number of Listed Companies	Event Date	Event Duration	Max. Value of *CAR*	Min. Value of *CAR*	Ave.Value of *CAR*
12	DPP	38	20080322	(-60,+60)	23.4468	-0.8039	12.3768
	KMT*	49	20080322	(-60,+60)	17.9644	-3.6418	8.4515
	DPP & KMT	24	20080322	(-60,+60)	38.4505	0.1499	22.8912
13	DPP	15	20120114	(-60,+60)	13.8242	-17.3510	-1.3713
	KMT*	34	20120114	(-60,+60)	14.1263	-14.4197	2.0362
	DPP & KMT	4	20120114	(-60,+60)	21.5158	-3.4618	11.1986
14	DPP*	47	20160116	(-60,+60)	6.6317	-7.2961	-0.1267
	KMT	0	20160116	(-60,+60)			
	DPP & KMT	0	20160116	(-60,+60)			
15	DPP*	27	20200111	(-60,+60)	2.1233	-34.829	-5.6467
	KMT	10	20200111	(-60,+60)	7.3836	-29.1949	-1.5907
	DPP & KMT	1	20200111	(-60,+60)	25.4236	-33.4192	5.0590

Note: * Indicates the candidate from the respective party won the election; Cumulative Abnormal Returns (*CAR*) are expressed in percentage %. The KMT is Kuomintang, the DPP is Democratic Progressive Party.

During the 14th and 15th presidential and vice-presidential elections, a statistical analysis of daily data over 60 trading days before and after the elections was conducted to observe changes in *CAR*. It was found that despite DPP candidates winning the 14th and 15th presidential and vice-presidential elections, there seemed to be no positive impact on the stock performance of companies that solely donated to the DPP, both before and after the elections.

For companies that solely donated to the KMT, the analysis revealed a gradual increase in CAR before the elections, followed by a decline after the elections until the 40th trading day, when the trend reversed. Regarding companies that donated to both the DPP and the KMT, only one data point was available, making it unsuitable for empirical event analysis, as illustrated in Figure 1.

Based on the comprehensive analysis of the empirical results, it is evident that taking a stance of donating to both the DPP and the KMT in presidential and vice-presidential elections yields the best short-term CAR for listed companies, both before and after the announcement of election results. This strategic choice is reflected in Table 4. This finding aligns with the empirical studies conducted by Chiu (2011) and W. H. Chen (2010), which demonstrated that companies donating to both the blue and green camps (KMT and DPP) achieve significantly higher CAR compared to those donating to a single political party. This convergence of results underscores the effectiveness of such a strategy.

4.4 The Impact of Corporate Political Contributions on the Long-Term Excess Returns of Publicly Listed Companies that Make Political Contributions

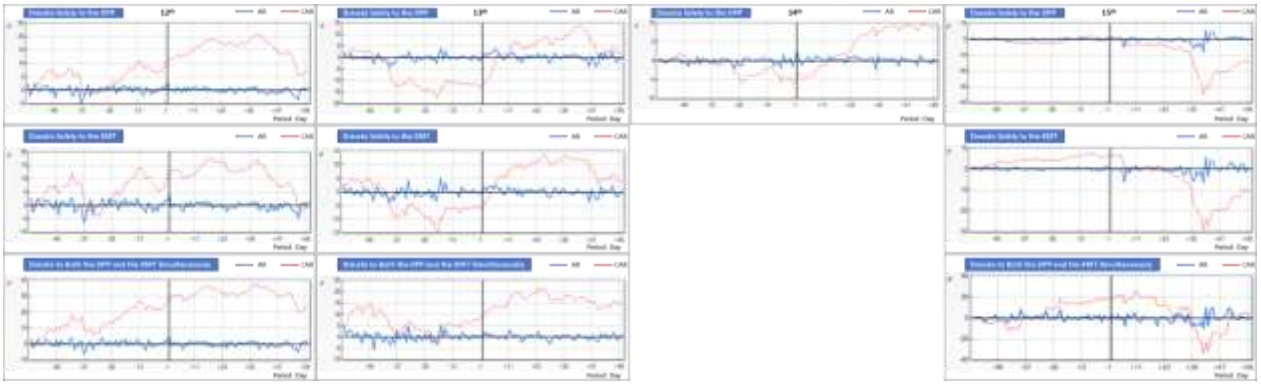

Figure 1. The 12th to 15th Presidential and Vice-Presidential Election: Corporate Political Stances and Cumulative Abnormal Returns in Stock Prices, Taiwan

Note: Event Study Analysis of the Impact of Political Contributions from Listed Companies on Cumulative Abnormal Returns in Stock Prices during the Period (-60, +60) of the 12th & 13th Presidential and Vice-Presidential Election. Differentiating between Companies Solely Donating to the Democratic Progressive Party (DPP), Solely Donating to the Kuomintang (KMT), and Donating to Both the DPP and KMT Simultaneously

A multivariate regression analysis was conducted on Hypothesis II to examine the impact of corporate political stances during the 12th to 15th presidential and vice-presidential elections on the excess returns of listed companies that donated political contributions. A total of 10,487 data entries, comprising collected political contribution statistics and related financial statements of companies, were input into equation (3) for the multivariate regression model analysis, resulting in the statistical data presented in Table 5.

Table 5. Regression Analysis of Corporate Political Contributions on Long-Term Excess Stock Returns During the 12th to 15th Presidential and Vice Presidential Elections

Dependent Variable: ERR									
Method: Least Squares									
Political Party to Which the Elected Candidate Belongs:	DPP				KMT				
Included observations:	5388				5099				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNPCI_DPP	-0.0309	0.0384	-0.8037	0.4216	LNPCI_DPP	0.0902**	0.0454	1.9854	0.0472
LNPCI_KMT	-0.0278	0.0412	-0.6743	0.5002	LNPCI_KMT	0.0276	0.0413	0.6668	0.5049
IAF	3.5135e-08	7.7775e-08	0.4518	0.6515	IAF	3.7779e-08	3.9081e-08	0.9667	0.3337
FAF	9.7270e-09	5.1001e-08	0.1907	0.8487	FAF	-4.1231e-08	6.6551e-08	-0.6195	0.5356
CASHFR	0.0115**	0.0051	2.2428	0.0250	CASHFR	0.0007	0.0013	0.5620	0.5742
PBR	0.5537***	0.0808	6.8540	0.0000	PBR	1.8190***	0.1508	12.0622	0.0000
TAXR	-0.0265	0.0165	-1.6068	0.1082	TAXR	0.0092	0.0186	0.4954	0.6203
INTERESTR	-0.0002	0.0007	-0.3354	0.7373	INTERESTR	0.0004	0.0007	0.5528	0.5804
LNSIZE	0.0062	0.1874	0.0331	0.9736	LNSIZE	-0.3815*	0.2096	-1.8203	0.0688
INDUSTRY	-0.1083	0.5370	-0.2017	0.8401	INDUSTRY	0.4875	0.5747	0.8483	0.3963
C	0.8292	2.8318	0.2928	0.7697	C	4.4952	3.1598	1.4226	0.1549
R-squared	0.0107	Mean dependent var	1.3370		R-squared	0.0321	Mean dependent var	2.6143	
Adjusted R-squared	0.0088	S.D. dependent var	17.0488		Adjusted R-squared	0.0301	S.D. dependent var	19.0972	
S.E. of regression	16.9733	Akaike info criterion	8.5032		S.E. of regression	18.8071	Akaike info criterion	8.7085	
Sum squared resid	1549074	Schwarz criterion	8.5167		Sum squared resid	1799658	Schwarz criterion	8.7226	
Log likelihood	-22896	F-statistic	5.8061		Log likelihood	-22191	F-statistic	16.8480	
Durbin-Watson stat	1.9990	Prob(F-statistic)	0.0000		Durbin-Watson stat	2.0701	Prob(F-statistic)	0.0000	

Note:

1. Dependent variable: Excess Return Rate (*ERR*); Independent variables include Political Connection Index for donations to the Democratic Progressive Party (*PCI_DP*P), Political Connection Index for donations to the Kuomintang (*PCI_KMT*), and Corporate Value (*CorpValue*), including Investment Activities Funds (*IAF*), Financing Activities Funds (*FAF*), Cash Flow Ratio (*CashFR*), Price-to-Book Ratio (*PBR*), Operating Tax Rate (*TaxR*), and Interest Expenditure Ratio (*InterestR*); control variables: Company Size (*Size*) and Industry Type (*Industry*); Control variables: Company Size (*Size*) and Industry Type (*Industry*).

2. * Denotes significance at the 10% level, ** denotes significance at the 5% level, *** denotes significance at the 1% level.

According to Table 5, there are 5,388 data points for the periods when the Democratic Progressive Party (DPP) candidates were elected. The relationship between the independent variable Price-to-Book Ratio (*PBR*) and the

dependent variable Excess Return Rate (*ERR*) is positive and highly significant, with a *P-value* reaching the 1% significance level. Additionally, the relationship between the independent variable Cash Flow Ratio (*CashFR*) and the dependent variable Excess Return Rate (*ERR*) is also positive and quite significant, with a *P-value* of 0.0250, reaching the 5% significance level.

Similarly, according to Table 5, there are 5,099 data points for the periods when Kuomintang (KMT) candidates were elected. The relationship between the independent variable Price-to-Book Ratio (*PBR*) and the dependent variable Excess Return Rate (*ERR*) is positive and highly significant, with a P-value reaching the 1% significance level. Furthermore, the relationship between the independent variable Political Contribution Index to Democratic Progressive Party (*PCI_DPP*) and the dependent variable Excess Return Rate (*ERR*) is positive and quite significant, with a P-value of 0.0472, reaching the 5% significance level. The control variable Company Size (*Size*) shows a negative and significant relationship with the dependent variable Excess Return Rate (*ERR*), with a P-value reaching the 10% significance level.

The empirical analysis in this section reveals that during the terms when Kuomintang (KMT) candidates were elected as President or Vice President of Taiwan, there exists a positive and highly significant correlation between the amount of political donations to the Democratic Progressive Party (DPP) and the long-term excess return rate of publicly listed companies that donated. For listed companies that donated to political contributions, the long-term average excess return rate during the terms when KMT candidates were elected is higher compared to the terms when DPP candidates were elected, and both rates are positive.

4.5 The Impact of Election Betting Results on Long-Term Shareholders' Equity of Companies Donating Political Contributions

This subsection conducts a multiple regression empirical analysis on Hypothesis III, examining the impact of election betting results on shareholders' equity of companies that donate political contributions. In the 12^{th} to 15^{th} presidential and vice-presidential elections, there were 177 listed companies that donated political contributions. Excluding one company (Wei Chuan), which delisted from the Taiwan Stock Exchange and re-listed on the Hong Kong Stock Exchange, 176 listed companies remained. Relevant financial data for these 176 listed companies were obtained from the Taiwan Economic Journal (TEJ) database, resulting in a total of 10,487 data entries.

This study incorporates the collected and organized financial statement data of listed companies into a multiple regression model, equation (3). This model aims to explore the impact on the corporate value of the donation industry. The statistical data obtained is shown in Table 6.

In Table 6 that when the DPP candidate is elected, the variable shareholder equity (*Equity*) and the independent variables election betting results (*Election_Bet*), investment activity funds (*IAF*), and financing activity funds (*FAF*), cash flow ratio (*CashFR*), stock price to net worth ratio (*PBR*) and the control variable company size (*Size*) have a very significant correlation, and the *P-value* reaches a significant level of 1%; the variable shareholder equity (*Equity*) and the independent variable The correlation between the interest expense rate (*InterestR*) and the industry (*Industry*) is very significant, and the P-value reaches a significant level of 5%; while the correlation between the independent variable shareholder equity (*Equity*) and the independent variable business tax rate (*TaxR*) is significant, And the P-value reaches the significant level of 10%. There is a very significant negative correlation between shareholder equity (*Equity*) and the independent variables election betting results (Election_Bet), investment activity funds (*IAF*), and financing activity funds (*FAF*). This result represents the relationship between election betting results and political donations. There is a long-term and close negative correlation with the shareholders' equity of listed companies. From the values of R^2 and Adjusted R^2 above 0.8736, it can be seen that its explanatory power is quite strong.

4.6 Robustness Testing

4.6.1 The Impact of Election Betting Results on Shareholder Equity of Companies Representing Political Donation Groups

This study incorporates 6,176 data entries from the financial statements of representative companies into a multiple regression model, using Hypothesis III equation (3), to further explore the impact of election betting results on the shareholder equity of companies representing political donation groups. The regression analysis data obtained is presented in Table 7.

Table 6. Regression Analysis of Election Betting Results of the 12th to 15th Presidential and Vice-Presidential Elections on the Long-Term Shareholder Equity of Companies that Donate Political Contributions

Dependent Variable: LNEQUITY									
Method: Least Squares									
Political Party to Which the Elected Candidate Belongs:	DPP				KMT				
Included observations:	5388				5099				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
ELECTION_BET	-0.1180***	0.0172	-6.8477	0.0000	ELECTION_BET	0.1186***	0.0168	7.0561	0.0000
IAF	-1.4134e-08***	2.6200e-09	-5.3947	0.0000	IAF	-9.7304e-10	1.1518e-09	-0.8448	0.3983
FAF	-5.3976e-09***	1.7186e-09	-3.1407	0.0017	FAF	-4.4132e-09**	1.9613e-09	-2.2501	0.0245
CASHFR	0.0011***	0.0002	6.4580	0.0000	CASHFR	8.7720e-06	3.7484e-05	0.2340	0.8150
PBR	0.0178***	0.0027	6.5589	0.0000	PBR	-0.0134***	0.004	-3.0078	0.0026
TAXR	0.0010*	0.0006	1.8394	0.0659	TAXR	-0.0007	0.0005	-1.2009	0.2299
INTERESTR	-5.3892e-05**	2.2878e-05	-2.3556	0.0185	INTERESTR	-5.4631e-05**	2.1778e-05	-2.5086	0.0122
LNSIZE	1.0527***	0.0063	168.0338	0.0000	LNSIZE	1.0764***	0.0062	174.9082	0.0000
INDUSTRY	-0.0369**	0.0180	-2.0431	0.0411	INDUSTRY	-0.1728***	0.0169	-10.2070	0.0000
C	0.0631	0.0953	0.6616	0.5083	C	-0.4602	0.0928	-4.9601	0.0000
R-squared	0.8738	Mean dependent var	15.9261		R-squared	0.8780	Mean dependent var	15.6977	
Adjusted R-squared	0.8736	S.D. dependent var	1.6090		Adjusted R-squared	0.8778	S.D. dependent var	1.5857	
S.E. of regression	0.5721	Akaike info criterion	1.7228		S.E. of regression	0.5543	Akaike info criterion	1.6598	
Sum squared resid	1760	Schwarz criterion	1.7350		Sum squared resid	1563	Schwarz criterion	1.6726	
Log likelihood	-4631	F-statistic	4137		Log likelihood	-4221	F-statistic	4070	
Durbin-Watson stat	0.1325	Prob(F-statistic)	0.0000		Durbin-Watson stat	0.1195	Prob(F-statistic)	0.0000	

Note:

1. Dependent variable: Shareholder Equity (*Equity*); Independent variables include Election Betting Results (*Election_Bet*), and Corporate Value (*CorpValue*) function, including Investment Activity Funds (*IAF*), Financing Activity Funds (*FAF*), Cash Flow Ratios (*CashFR*), Price-to-Book Ratio (*PBR*), Sales Tax Rate (*TaxR*), and Interest Expense Ratio (*InterestR*); Control variables: Company Size (*Size*) and Industry Type (*Industry*).

2. * Denotes significance at the 10% level, ** denotes significance at the 5% level, *** denotes significance at the 1% level.

Table 7. Impact of Election Betting Results of the 12th to 15th Presidential and Vice-Presidential Elections on the Shareholders' Equity of Group Representative Companies that Donated Political Contributions

Dependent Variable: *LNEQUITY*

Method: Least Squares

Included observations: 6176

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ELECTION_BET	-0.0429**	0.0201	-2.1351	0.0328
PCI_DPP_SS	-0.0336*	0.0185	-1.8162	0.0694
PCI_KMT_SS	0.1644***	0.0174	9.4631	0.0000
IAF	-1.1416e-09	1.1309e-09	-1.0094	0.3128
FAF	-4.7430e-09***	1.4648e-09	-3.2380	0.0012
CASHFR	7.0669e-06	3.7486e-05	0.1885	0.8505
PBR	-0.0204***	0.0045	-4.5726	0.0000
TAXR	0.0006	0.0005	1.1928	0.2330
INTERESTR	-4.5084e-05**	1.7694e-05	-2.5480	0.0109
LNSIZE	1.0886***	0.0052	208.1459	0.0000
INDUSTRY	-0.1679***	0.0149	-11.2420	0.0000
C	-0.5404	0.0805	-6.7161	0.0000
R-squared	0.8991	Mean dependent var		16.0314
Adjusted R-squared	0.8989	S.D. dependent var		1.7084
S.E. of regression	0.5433	Akaike info criterion		1.6195
Sum squared resid	1819.2127	Schwarz criterion		1.6326
Log likelihood	-4989.0037	F-statistic		4990.7485
Durbin-Watson stat	0.0940	Prob（F-statistic）		0.0000

Note:

1. Dependent Variable: Shareholder Equity (Equity); Independent Variables: Election Betting Results (*Election_Bet*), Political Contributions Intensity to the DPP (*PCI_DPP_SS*), Political Contributions Intensity to the KMT (*PCI_KMT_SS*), and Corporate Value (*CorpValue*) functions, including: Investment Activity Funds (*IAF*), Financing Activity Funds (*FAF*), Cash Flow Ratio (*CashFR*), Price-to-Book Ratio (*PBR*), Sales Tax Rate (*TaxR*), and Interest Expense Ratio (*InterestR*); Control Variables: Company Size (*Size*) and Industry Type (*Industry*).

2. * Indicates 10% significance level, ** indicates 5% significance level, *** indicates 1% significance level.

The dependent variable *Equity* has a very significant relationship with the independent variables, *PCI_KMT_SS*, *FAF*, *PBR*, and the control variables *Size* and *Industry*, with a *P-value* reaching the 1% significance level. Additionally, The dependent variable *Equity* is positively correlated with *PCI_KMT_SS* and *Size*, but negatively correlated with *FAF*, *PBR*, and *Industry*. The dependent variable *Equity* also shows a significantly negative correlation with *Election_Bet* and *InterestR*, with a *P-value* at the 5% significance level. The R^2 and Adjusted R^2 values above 0.8989 indicate a strong explanatory power.

In summary, the empirical analysis of the impact of election betting results from the 12th to 15th presidential and vice-presidential elections on shareholder equity of the donor representative companies shows a negative outcome. This result suggests that representative companies should further contemplate their decisions on political contributions.

4.6.2 The Impact of Corporate Donations to Both Democratic Progressive Party (DPP) and Kuomintang (KMT) Candidates During the Same Election Period on The Shareholder Equity of Listed Companies

This study collected and organized 720 data entries on corporate donations to both the DPP and the KMT during the same election period, along with related financial statements of the companies. The equation (3) was modified by substituting Election Betting Strength (*Election_BS*) for Election Betting Results (*Election_Bet*), resulting in the following equation, equation (4).

The regression analysis results are shown in Table 8.

$$Ln(Equity_{i,t}) = \beta_0+\beta_1 Election\_BS_{i,t}+\beta_2 PCI\_DPP\_SS_{i,t}+\beta_3 PCI\_KMT\_SS_{i,t}+\beta_4 CorpValue_{i,t} +\beta_5 Ln(Size_{i,t})+\beta_6 Industry_{i,t} \quad (4)$$

The relationship between the dependent variable *Equity*, and the independent variables, *IAF*, *FAF*, *PBR*, as well as the control variables, *Size* and *Industry*, is very highly significant, with the *P-values* reaching the 1% significance level. The relationship between the dependent variable *Equity* and the independent variable *PCI_KMT_SS* is also highly significant, with the *P-value* reaching the 5% significance level. The relationship between the dependent variable *Equity* and the independent variables, *PCI_DPP_SS*), *PBR*, and the control variable *Size*, shows a positive correlation. In contrast, the relationship between the dependent variable *Equity* and the independent variables, *PCI_KMT_SS*, *IAF*, *FAF*, and *Industry*, shows a negative correlation. The values of R^2 and Adjusted R^2 are above 0.9313, indicating a strong explanatory power.

5. Conclusion

5.1 Research Results and Discussion

Taiwan has achieved success in democratic development, becoming a model for emerging markets. However, research on the relationship between political connections and corporate value remains scarce. This study provides an in-depth and comprehensive explanation of political campaign funding in the Taiwan stock market. It helps clarify and verify whether political participation can be part of corporate social responsibility, making positive contributions to the individual value of both the nation and corporations. The empirical analysis and robustness test results are summarized as follows:

1. Event analysis reveals that companies donating to both parties experience the highest short-term abnormal returns before and after elections.
2. In conducting multiple regression empirical analysis on the impact of corporate betting results on the long-term equity of companies during the 12th to 15th presidential and vice-presidential elections, a significant negative correlation between shareholder equity and the independent variable election betting results was found, with a *P-value* reaching the 5% significance level. This result suggests a long-term and close negative association between election betting results and shareholder equity for listed companies donating political contributions.
3. Further robustness tests were conducted using group representative company data, revealing significantly high robustness in the empirical analysis when incorporating group representative company financial data and election-related independent variables into the regression model. The empirical analysis on the impact of presidential and vice-presidential election betting results on shareholder equity of donating group representative companies during the 12th to 15th elections yielded negative results. This suggests that group representative companies should reconsider their decisions regarding political donation contributions.
4. Further multiple regression analysis was conducted on the impact of corporate donations to both the DPP and the KMT candidates during the same election period on the shareholder equity of listed companies. The results showed a significant positive correlation between the dependent variable Equity, and the independent variables, *PCI_DPP_SS*, *PBR*, and the control variable Size. Additionally, a significant negative correlation was observed between Equity and the independent variables, *PCI_KMT_SS*, *IAF*, *FAF*, and Industry. With R^2 and Adjusted R2 values exceeding 0.9255, the explanatory power of the model is deemed remarkably strong.

5.2 Research Limitations and Recommendations

Due to the large volume of political donation data, we can only collect donation data exceeding NT$500,000 from corporate donors during the presidential election campaign period, as stipulated by law. Considering the comparability of samples and the potential impact of data on the results, this study selects donations from profit-seeking enterprises, specifically those that are listed companies in Taiwan.

Table 8. The Impact of Corporate Political Contributions to Both Democratic Progressive Party (DPP) and Kuomintang (KMT) Candidates During the 12th to 15th Presidential and Vice-Presidential Elections on Shareholder Equity

Dependent Variable: LNEQUITY				
Method: Least Squares				
Included observations: 720				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ELECTION_BS	-0.0243	0.0233	-1.0438	0.2969
PCI_DPP_SS	0.7982*	0.4406	1.8116	0.0705
PCI_KMT_SS	-0.8345**	0.4250	-1.9636	0.0500
IAF	-4.1720e-08***	5.3822e-09	-7.7515	0.0000
FAF	-1.2945e-08***	3.2140e-09	-4.0278	0.0000
CASHFR	0.0017	0.0011	1.5415	0.1236
PBR	0.0399***	0.0097	4.1353	0.0000
TAXR	0.0015	0.0011	1.3457	0.1788
INTERESTR	-7.6319e-05	7.1576e-05	-1.0663	0.2867
LNSIZE	1.0238***	0.0148	69.2283	0.0000
INDUSTRY	-0.2650***	0.0362	-7.3279	0.0000
C	0.4995	0.2289	2.1821	0.0294
R-squared	0.9324	Mean dependent var		16.2370
Adjusted R-squared	0.9313	S.D. dependent var		1.5451
S.E. of regression	0.4049	Akaike info criterion		1.0462
Sum squared resid	116.0751	Schwarz criterion		1.1225
Log likelihood	-364.6306	F-statistic		887.4052
Durbin-Watson stat	0.3132	Prob(F-statistic)		0.0000

Note:

1. Dependent Variable: Shareholder Equity (*Equity*); Independent Variables: Election Betting Strength (*Election_BS*), Political Contributions Intensity to the DPP (*PCI_DPP_SS*), Political Contributions Intensity to the KMT (*PCI_KMT_SS*), and Corporate Value (*CorpValue*) functions, including: Investment Activity Funds (*IAF*), Financing Activity Funds (*FAF*), Cash Flow Ratio (*CashFR*), Price-to-Book Ratio (*PBR*), Sales Tax Rate (*TaxR*), and Interest Expense Ratio (*InterestR*); Control Variables: Company Size (*Size*) and Industry Type (*Industry*).

2. * Denotes significance at the 10% level, ** denotes significance at the 5% level, *** denotes significance at the 1% level.

The impact of political contributions on a company's stock price is a complex issue, with effects on excess returns observable in both short-term and long-term time frames. In the short term, a company's expenditure on political contributions may cause fluctuations and changes in stock prices. This impact could be related to the market's immediate reaction to the company's political activities, such as changes in the political environment or policy changes affecting the company's operations.

Therefore, the impact of political contributions on a company's excess stock returns can be short-term, as well as potentially affecting corporate value over the long-term within the context of government policy effects. To comprehensively understand its influence, it is necessary to deeply analyze the mechanisms of these impacts across different time frames and contexts.

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Authors' contributions

Professor Ai-Chi Hsu and Dr. Tse-Mao Lin were responsible for the study design and revision. Graduate student Jing-Long Yu was responsible for collecting data, organizing and drafting the manuscript, and Dr. Tse-Mao Lin revised the manuscript. All authors read and approved the completed manuscript and contributed equally to the publication of this manuscript.

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Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

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Notes

Note 1. Financial data come from the Taiwan Economic Journal (TEJ Equity, TEJ Profile, TEJ Finance DB, and TEJ Company) databases.

Note 2. Excess Return Rate (*ERR*) refers to the difference between the actual return of a risky asset and the risk-free rate.

Note 3. Election Betting Results (*Election_Bet*) delve into the inclination of enterprises to donate political contributions to party candidates and the impact of Election_Bet on the abnormal returns of corporate stock prices. When the Central Election Commission announces the election results, if the political contribution recipient during the election period is the Democratic Progressive Party (DPP) and the DPP wins, *Election_Bet* = 1; if the DPP loses, *Election_Bet* = 0. If the political contribution recipient during the election period is the Kuomintang (KMT) and the KMT wins, *Election_Bet* = 1; if the KMT loses, *Election_Bet* = 0.

Note 4. The Political Connection Index (*PCI_Cand*) is constructed based on political contributions to candidates' affiliated parties and is defined as follows: $PCI\_Cand_{i,t,N} = \sum_{n=1}^{N} Cand_{i,t,n}$

Where $Cand_{i,t,N}$ represents the nth political contribution amount from enterprise *i* during election period *t* to the candidate; *Cand* represents the candidate's affiliated party, either the DPP or the KMT; *i* represents the listed company donating political contributions; *t* represents the election period; *n* represents the n^{th} political contribution to the party candidate.

Note 5. Election Betting Strength (*Election_BS*) analyzes the ratio of political contributions to the DPP compared to the KMT when enterprises donate to both parties during the same election period, defining the strength of election betting. The calculation formula is as follows:

$Election\_BS_{i,t} \approx PCI\_DPP_{i,t} / PCI\_KMT_{i,t}$.

If the $PCI\_DPP_{i,t} / PCI\_KMT_{i,t}$ the calculated value is greater than or equal to 1.2, it indicates a stronger betting strength on DPP, then $Election\_BS_{i,t} = 1$; if between 0.8 and 1.2, it indicates no significant difference in betting strength on both parties, then $Election\_BS_{i,t} = 0$; if less than or equal to 0.8, it indicates a weaker betting strength on DPP, then $Election\_BS_{i,t} = -1$.

Note 6. The definition of Political Contribution Intensity (*PCI_DPP_SS*, *PCI_KMT_SS*) is calculated by taking the logarithm of the median political contribution amount from enterprises to party candidates during each election

period as the denominator, and the logarithm of the political contribution amount from each enterprise to each party candidate during each election period as the numerator. The resulting value is the strength of the political contribution for that period for the respective party candidate, specifically *PCI_DPP_SS* for DPP and *PCI_KMT_SS* for KMT.

$PCI\_DPP\_SS_{i,t}$ = Ln($PCI\_DPP_{i,t}$) / Ln($PCI\_Median_{i,t}$)

$PCI\_KMT\_SS_{i,t}$ = Ln($PCI\_KMT_{i,t}$) / Ln($PCI\_Median_{i,t}$)

Note 7. This study focuses on Taiwan's top two political parties, the Democratic Progressive Party (DPP) and the Kuomintang (KMT). The categorical variable "Political Standpoint" (*Party*) is derived from the company's tendency to donate political contributions to party candidates. If a company's political contributions during the election period are solely to the DPP, it is denoted as *Party = PS_DPP*. If the contributions are solely to the KMT, it is denoted as *Party = PS_KMT*. If the contributions are to both the DPP and KMT, it is denoted as *Party = PS_DPP&KMT*. If there are no political contributions during the election period, it is denoted as *Party = PS_None*. The collected data is categorized into these four types of cross-sectional data to further analyze the multiple regression of the types of political donations.

Note 8. Following previous literature (Chen and Zhou, 1993; Chen, 1995; Schuler and Rehbein, 1997; Rao, 2000; Chang and Lee, 2001; Zhou, 2005), industries such as construction, finance, telecommunications, transportation, and utilities are classified as industries with high demand for political connections. If a company belongs to one of these industries, the dummy variable for Industry Type (*Industry*) is set to 1; otherwise, it is set to 0. If a company belongs to an industry with high demand for political connections, the dummy variable for Industry Type (*Industry*) is set to 1, accumulating 3,410 data entries; otherwise, it is set to 0, accumulating 7,077 data entries. The 61 TEJ industry names from the Taiwan Economic Journal (TEJ) are consolidated into two industry categories for empirical analysis.

Note 9. We apply the event study method to measure the impact of specific events on stock market value. Researchers calculate "Abnormal Returns (*AR*)" to assess whether the information released by an event impacts the market. Further, by observing the positive or negative "Cumulative Abnormal Returns (*CAR*)" and their statistical significance, the market's reaction to the event can be determined (Shen and Lee, J. R., 2000).

Note 10. The length of the estimation period often lacks an objective standard and relies on the researcher's subjective decision. Peterson (1989) pointed out that if the estimation period T is too short, it may affect the predictive ability of the model, and if T is too long, it may lead to structural changes in the data model, resulting in model instability. For daily data frequency, Peterson suggests using an estimation period length of T=100 to 300 periods, and for monthly data, T=24 to 60 periods.