Online Appendix: Good Friends versus Best Friends: How Different Types of Political Connection Works in China

A. Tables

Table A1: Mean Difference Between the Whole Sample and Matched Listed Firms

In section 4 of the main paper, I construct my sample by matching China's listed firms with buyers' information I collected from China Land Market. In Table A1, I provide the mean comparison of land characteristics between the matched sample and the whole land transactions data from 2010 to 2017. Overall, this table shows that publicly listed firms buy more land but have lower land quality than non-public listed firms.

Table A1: Mean Difference Between the Whole Sample and Matched Listed Firms

	Mean Matched	Mean Whole Sample	Mean Difference	P Value
Area	7.51	2.03	5.48	0.00
Price	11814.85	6027.90	5786095	0.14
Years of Usage	51.43	77.68	26.25	0.24
Land Level	11.66	10.56	1.1	0.00

* Area is measured by hectare, and price is measured ten thousand RMB. Land quality, assessed by the local government, is an overall evaluation of a parcel of land that is based on the area's economic prosperity, population density, traffic conditions, and infrastructure conditions. According to the Land Resources Bureau's criteria, there are fifteen levels of land quality. Level one represents the highest land quality, such as land in Shanghai and Beijing's central business district, whereas level fifteen represents the lowest land quality.

Table A2: Mean Difference Between Unmatched and Matched Auction Records

In section 6.2 of the main paper, I matched my sample with data for land reserve prices and premium rates, which I collected from the website of each city's land resources bureau. Connected firms could strategically cooperate with local governments to not reveal auction information in order to cancel corruption behavior. To test whether my sample is biased or not, I conduct a mean test between the matched sample and the unmatched sample. Overall, Table A2 shows that larger firms with more political connections are less likely to have auction records, which means there is a sample selection issue. In Appendix Table A6, I represent results based on the Heckman selection model to reduce the s.

Table A2: Mean Difference Between Unmatched and Matched Auction Records

	Matched Mean	Unmatched Mean	Mean Difference	P Value
Land Characteristics				
Area	7.2891	7.9662	-0.6771	0.0176
Price	7924.4629	17101.8029	-9177.3400	0.0000
Years of Usage	107.1341	107.1937	-0.0596	0.9412
Land Level	10.3024	9.1608	1.1416	0.0000
Firm Characteristics				
Log(Total Assets)	23.5006	23.6966	-0.1959	0.0000
Log(Total Employee)	8.6015	8.6060	-0.0044	0.8537
Log(Total Debt)	22.8286	23.0731	-0.2445	0.0000
Profit Per Share	0.7341	0.5899	0.1442	0.0000
General Political Connections	0.1030	0.1137	-0.0107	0.0336
Locality-specific Political Connections	0.0120	0.0182	-0.0062	0.0011
Local Experience	0.2070	0.2123	-0.0053	0.4237
Number of Political Connections	0.0161	0.0178	-0.0017	0.0009

Table A3: Summary Statistics

Table A3 provides summary statistics of land transactions and listed firms. Panel A in the table is the summary statistics for land transactions. Panel B shows the summary statistics of the land reserve price and premium rate. Panel C provides summary statistics of listed firms.

The mean price was 2.84 million RMB per hectare (roughly 0.3 million USD, \$1=6.5RMB), and the mean land quality level was 9.42.[1] The average price of land sold to firms with LPCs was 3.05 million RMB, and 2.84 million RMB for firms without such ties. Panel A also shows that two-stage auctions are the dominant method for selling lands, being used by 77% of the full sample (77% of firms with no LPC and 63% of firms with LPCs). Bilateral agreements were used by 13% of firms with no LPCs and 26% of those with LPCs. English auctions were roughly 1% less likely to be used if the buyer has LPC. This evidence reflects the fact that transactions are more likely to be carried out using methods that are more prone to manipulation. Panel B summarizes the information on land auctions. It shows that the land reserve price is higher when a firm has LPCs, 5.60 million RMB, whereas the premium rate tends to be lower than for unconnected firms.

[1]Land quality, assessed by the local government, is an overall evaluation of a parcel of land that is based on the area's economic prosperity, population density, and traffic and infrastructure conditions. According to the Land Resources Bureau's criteria, there are fifteen levels of land quality. Level one represents the highest land quality, such as land in Shanghai and Beijing's central business district, whereas level fifteen represents the lowest land quality.

Table A3: Summary Statistics of Land and Firm Characteristics

Panel A	(1)		(2)		(3)	
	Total		LPC=0		LPC=1	
	mean	sd	mean	sd	mean	sd
Land Price (Log)	5.65	1.87	5.65	1.87	5.72	2.14
Size of Area (hectare)	1.57	0.98	1.57	0.97	1.60	1.08
Land Quality	9.42	6.65	9.43	6.65	8.85	6.37
Years of Usage	51.55	16.92	51.56	16.98	51.07	11.62
Transaction Method(%)						
-English Auction	8.77		8.79		7.58	
-Two Stage Auction	76.86		77.07		62.68	
-Bilateral Agreement	12.97		12.79		25.66	
-Invited Bidding	1.40		1.36		4.08	
Panel B	(4)		(5)		(6)	
	Total		LPC=0		LPC=1	
	mean	sd	mean	sd	mean	sd
Reserve Price	7.05	2.16	7.06	1.84	6.33	2.93
Premium Rate (%)	3.52	16.11	3.54	16.21	1.90	6.87
Panel C	(7)		(8)		(9)	
	Total		LPC=0		LPC=1	
	mean	sd	mean	sd	mean	sd
Total Assets (Log)	23.60	1.85	23.60	1.86	23.71	1.50
Total Employees	8.54	1.58	8.53	1.58	8.93	1.39
Total Debt (Log)	22.96	2.16	22.96	2.16	23.09	1.72
State Enterprise(%)	43.03		42.47		81.63	

1. Area is measured by hectare, and price is measured in ten thousand RMB. Land quality, assessed by the local government, is an overall evaluation of a parcel of land that is based on the area's economic prosperity, population density, traffic conditions, and infrastructure conditions. According to the Land Resources Bureau's criteria, there are fifteen levels of land quality. Level one represents the highest land quality, such as land in Shanghai and Beijing's central business district, whereas level fifteen represents the lowest land quality.
2. The reserve price is the starting price during the auction. The land premium rate is calculated as: (Transaction Price-Reserve Price)/Reserve Price$*$100%

Table A4: Land Transactions by Types of Political Connections

In the main paper, I construct 7 different measures of political connections. This table provides information on the percentage of land transactions by each type of political connection. Table A4 shows the distribution of different types of political connections across transactions. Approximately 8% of all the transactions involved firms with GPCs, whereas 17% related to firms with LE, and only 1% involved those with LPCs. Moreover, 34% and 36% of all firms have at least one senior executive or board member who is a CPPCC member or PC deputy, respectively; 19% of the transactions involved firms with connections of friends in government, whereas 8% have connections via relatives.

Table A4: Percentage of Land Transactions by Types of Political Connections

	Percent
General Political Connections (GPCs)	8.20%
Local Experience (LE)	17.61%
Locality-specific Political Connections (LPCs)	1.44%
CPPCC Member	33.65%
PC Deputy	35.97%
Government Friends	19.41 %
Relatives Connection	8.18 %

Table A5: Effect of Auction Method on Land Prices

This table provides the estimations of the effect of different auction methods on land prices. The dependent variable is land prices in the logarithm. The two main independent variables-Invited Bidding & Bilateral Agreement, or Two Stage Auction-are dummy variables.

Table A5: Effect of Auction Method on Land Prices

	(1) Log(price)	(2) Log(price)
Invited & Bilateral	-0.819***	-1.109***
	(-5.80)	(-5.89)
Two-stage Auction		-0.323***
		(-4.01)
Control Variables*	YES	YES
City Fixed Effects	YES	YES
Year Fixed Effects	YES	YES
Firm Fixed Effects	YES	YES
Observations	18926	18926

Two-way clustering standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

* The control variables are the average land price, land area, land use period, method of transaction, land quality, land purpose, percentage of total political connections on board, logged total assets, logged total employees, and firm's ownership.

Table A6: Robustness Check for the Effects of LPC on Land Reserve Price and Premium Rate

This table provides the re-estimation of table 3 in the main paper using Heckman selection model to reduce the sample selection bias concern. Overall, LPC effects are robust to sample selection bias.

Table A6: Land Price Manipulation

	Log(Reserve Price)			Premium Rate		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
General Political Connections	-0.069	-0.072	-0.087	-3.814**	-4.073**	-2.905
	(0.145)	(0.141)	(0.144)	(1.649)	(1.689)	(1.831)
Locality-specific Political Connections	-0.451*	-0.472**	-0.427*	-11.108***	-12.161***	-10.513***
	(0.236)	(0.228)	(0.231)	(2.689)	(2.675)	(2.668)
Local Experience	-0.034	-0.028	-0.038	2.520***	2.474***	2.438***
	(0.079)	(0.080)	(0.079)	(0.652)	(0.653)	(0.662)
NPC	0.038	0.031	0.031	-0.198	-0.158	0.001
	(0.082)	(0.083)	(0.084)	(1.055)	(1.043)	(1.083)
CPPCC	0.039	0.049	0.039	-0.967	-1.155	-0.958
	(0.090)	(0.092)	(0.090)	(1.281)	(1.317)	(1.287)
Control Variables*	YES	YES	YES	YES	YES	YES
City Fixed Effects	YES	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	NO	NO	NO
Ownership Fixed Effects	YES	YES	YES	YES	YES	YES
Friends/Relatives Connections	NO	YES	NO	NO	YES	NO
Headquarter	NO	NO	YES	NO	NO	YES
Observations	4285	4285	4285	2374	2374	2374

Standard errors are clustered by firm.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

* The control variables in models (1) to (3) are the average reserve price within cities, land area, land leasing period, auction method, land quality, intended usage of the land, percentage of firms' total political connections in board members, firms' total assets, total employees, total debt, and firm's ownership. The control variables in models (4) to (6) are the same as in (1) to (3) except for no control on auction methods.

Table A7 and A8: Robustness Check for Event Study

Table A6 shows the robustness check when I add two additional political connection measurements. Column 1 to 4 report results after control for friends in government and relative connections. The coefficients for LPC and LE are still negative and highly significant. Most importantly, the magnitude of these coefficients are almost the same compared with the results in Table 4 in the main paper.

One could argue that this negative cumulative return is due to the effects of pessimistic expectations of the overall economy for places experienced political shocks. To reduce this concern, I created a dummy variable which equals one if firms located in places that experienced political shocks and otherwise zero. Results are reported in Table A8, Panel A. Overall, it shows the negative cumulative return I find above is not due to the pessimistic expectation of the overall economy. An additional concern is that the results are driven by investors' negative expectations of firms that have political connections regardless of the types of connections when localities are under political instability. To reduce this concern, I also create a dummy variable equal to 1 if firms have political connections other than locality-specific connections. Results are reported in Table A8, Panel B. Results show that if firms do not have locality-specific, firms will not experience negative cumulative abnormal returns, which means the local political connection is the only way to affect firms.

Table A7: Effect of Anti-corruption on Firms Stock Market Return(Robustness Check)

	(1) CAR[0]	(2) CAR[-1,1]	(3) CAR[-2,2]	(4) CAR[-4,5]
General Political Connections	0.002	0.004	0.011**	0.020***
	(0.003)	(0.004)	(0.004)	(0.006)
Locality-specific Political Connections	-0.017***	-0.010*	-0.014*	-0.027***
	(0.006)	(0.006)	(0.007)	(0.009)
Local Experience	-0.001	0.003	0.001	-0.003
	(0.002)	(0.003)	(0.004)	(0.005)
PC	-0.001	-0.005	-0.003	0.005
	(0.003)	(0.004)	(0.004)	(0.005)
CPPCC	-0.004	-0.003	-0.005	-0.015***
	(0.002)	(0.003)	(0.004)	(0.005)
Friends in Government	0.010***	0.011***	0.012***	0.010*
	(0.003)	(0.003)	(0.004)	(0.005)
Relative Connections	0.004	0.004	0.004	0.017*
	(0.005)	(0.006)	(0.008)	(0.010)
Firm Level Controls*	YES	YES	YES	YES
Observations	1809	1809	1796	1796

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

* Firm level Control variables in all models are total assets, total employees, total debt, and firm's ownership.

Table A8: Effect of Anti-corruotion on Firms Stock Market Return(Political Shocks Dummy)

	(1) CAR[0]	(2) CAR[-1,2]	(3) CAR[-2,2]	(4) CAR[-4,5]
Panel A				
Political Shock Dummy	-0.003	-0.003	-0.002	0.005
	(0.005)	(0.006)	(0.007)	(0.009)
Panel B				
Political Connection Dummy	0.001	0.003	0.009**	0.017***
	(0.003)	(0.004)	(0.004)	(0.006)
Firm Level Controls*	YES	YES	YES	YES

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

* Firm level Control variables in all models are percentage of total political connection in board, logged total assets, logged total employees, firm's equity nature.

Table A9: Determinants of Disclosure of Friends and Relative Connections

This table provides an analysis of whether firms that choose to disclose friends' and relatives' connections are systematically different from ones that do not. In the table, SOE represents state-owned enterprises. This table shows that there is some evidence that firms with more employees and political connections are less likely to report they have friends' and relatives' connections.

Table A9: Determinants of Disclosure of Friends and Relative Connections

	(1)	(2)
	Government Friends	Relatives Connection
Toal Asset	-0.0255	-0.0130
	(-0.74)	(-1.42)
Total Employee	0.0234*	-0.00617*
	(1.68)	(-1.70)
Total Debt	0.0186	0.0233***
	(1.21)	(2.74)
SOE	0.0452	0.0174
	(1.11)	(1.26)
Percent of Political Connections	-0.0860	-0.123*
	(-0.41)	(-1.75)
Constant	0.179	-0.0871
	(0.37)	(-0.94)
Observations	20268	20268

Standard errors are clustered by firm

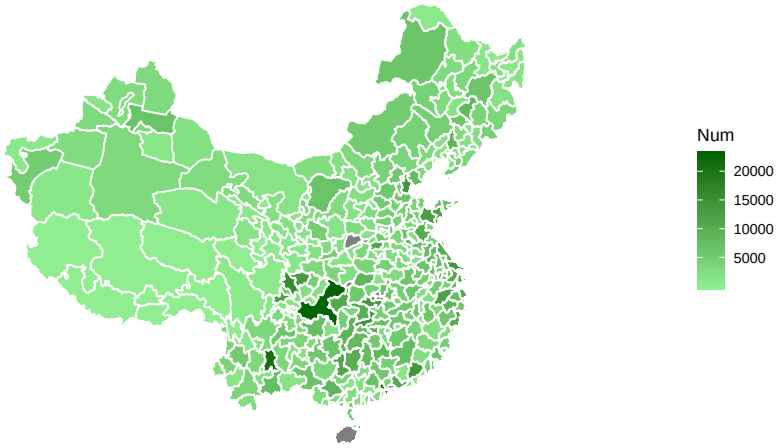
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B. Figures

Figure B1: Land Transaction in China, 2010-2017

This figure provides overall information on all land transactions in China between 2010 to 2017, which I web-scraped from the website of the China Land Transaction Monitoring System.

Figure B1: Land Transaction in China, 2010-2017

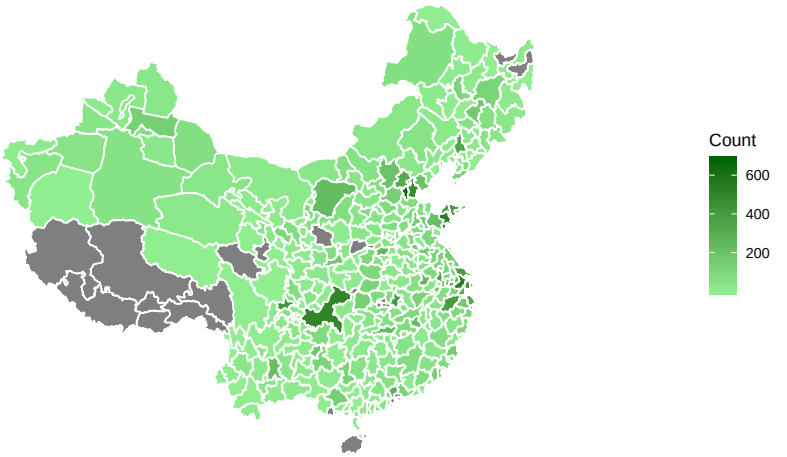


Nine cities' data are missing in this map: Jiyuan, Qianjiang, Shennongjia, Tianmen, Xiantao, Yuncheng, Shihezi, Dongwan, Zhongshan. One province that is missing is Hainan.

Figure B2: Land Transaction by Public Listed Firms in China, 2010-2017

Different from Figure B1, Figure B2 shows the distribution of land transactions by publicly listed firms. This is also the data I used for my analysis in the main paper. This figure shows except for a few cities where there were no observations, firms engaged in land transactions in almost every city in China. This may also help reduce the concerns that my matched data may be geographically biased.

Figure B2: Land Transaction by Public Listed Firms in China, 2010-2017



Besides the above missing data, this map has additional eleven missing: Hegang, Shuangyashan, Guoluozangzuzizhizhou(果洛藏族自治州), Huangnanzangzuzizhizhou(黄南藏族自治州), Changdu, Lasa, Naqu, Ali, Linzhi, Shannan, Rikeze, Qingyang, Fangchenggang

Figure B3: Correlation Matrix for Different Connection Measurements

In the main paper, I construct 7 different measures of political connections.Figure B3 shows the correlation between each connection measure. The blue color represents two variables have positive correlation, whereas the red color means they have a negative correlation. The darker the color, the strong the correlation. Figure B3 reduces the concern that there could be a strong inter-correlation between different connection measures. This also provides some evidence that my 7 connection measures capture different perspectives of connections.

Figure B3: Correlation Matrix for Different Connection Measurements

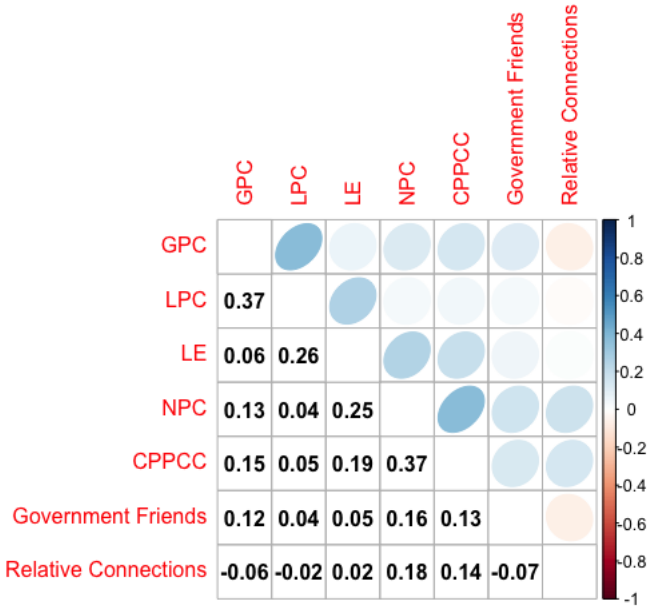


Figure B4: Robustness Checks for the Effect of LPC on Land Price

Figure B4: Plot of P-values and LPC Coefficients for Different Robustness Checks

In this section, I present several robustness checks in addition to the results in the main paper.

The No Major Cities models in Figure B4 report the results using samples without major cities, such as Beijing, Shanghai, Tianjing, and Guangdong. The effect of LPC is around 22%, which is slightly lower than my baseline model, and statistically significant. This reduces concerns that my results are mainly driven by large municipalities, where land resources are subject to intense competition and where firms have greater incentives to build connections.

Firms could also choose to do business in places where the overall quality of governance is low so they could easily build political connections and obtain benefits. However, the quality of governance can be measured in different ways, and it is difficult to measure the

quality of sub-national governance in a politically centralized authoritarian country. Following previous studies on measuring national-level institutional quality, I use GDP per capita (Acemoglu et al., 2019), percentage of foreign direct investment in GDP (Buchanan, Le and Rishi, 2012), lagged patents per capita (Wang, 2013), and lagged corruption cases that have been investigated (Bologna, 2017) to proxy for institutional quality.[2] Models marked as Institution1 to Institution4 report the results using the above measures, respectively. Overall, there is no substantive difference after I controlling for institutional quality.

The total land supply could also be a confounding variable, because firms may strategically choose to build political connections in localities with a large supply of land and where firms face less competitions when buying lands [3]. Models marked as Land Supply show that the LPC effect is slightly greater than the effect in original model, but it is still consistent with Hypothesis 1.

[2]All variables are measured by city.

[3]The land supply is measured by the geographical area of the locality

References

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