Political Connections, Growth and Firm Network

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Abstract

This study revisits the role of political connections (PC) in shaping firm outcomes in weak institutional environments. Using a panel of publicly listed Indonesian firms from 2002 to 2019, we construct a continuous, power-weighted political connection score and apply a dynamic panel model to examine how PC influences firm growth, credit access, and performance. We find that stronger political ties are associated with higher asset growth, sales, and leverage. However, these effects diminish once we account for firms' embeddedness in inter-firm networks.

This fading effect points to a novel and less studied channel: political connections may improve firm outcomes by facilitating access to business networks that substitute for underdeveloped formal institutions. Rather than working solely through direct state access or rent distribution, PC appears to help firms overcome market frictions by enabling informal governance through peer connectivity. Furthermore, our network analysis reveals that the benefits of political connections for size and growth are more pronounced among firms with initially weaker access to business networks, suggesting higher marginal returns to political capital for more peripheral firms.

1 Introduction and Literature

Firms in emerging markets often face gaps in the institutional supports that underpin resource access, credibility, and coordination. In such contexts, political connections (PC) are a prominent non-market strategy. A substantial literature documents benefits through government contracts, preferential regulation, and access to politically influenced credit (Fisman, 2001; Khwaja and Mian, 2005; Faccio, 2010; Wei et al., 2023), alongside costs stemming from rent extraction, weakened competitive discipline, and misallocation (Bertrand et al., 2018; Schoenherr, 2019; Akcigit et al., 2023).

A large body of work also clarifies how political connections operate. Connections can open procurement and regulatory channels awithin the government nd relax financing constraints, yielding near-term gains (Khwaja and Mian, 2005; Faccio, 2010; Boubakri et al., 2012). These mechanisms align with corporate-governance views of ties as devices for securing resources and legitimacy under uncertainty (Hillman et al., 2009; Zona et al., 2018),

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and with institutional arguments that informal arrangements substitute for missing supports where formal rules incompletely reduce transaction costs (Williamson, 2000, 2017). Yet the same channels can facilitate rents and distort allocation, dampening longer-run efficiency (Bertrand et al., 2018; Schoenherr, 2019; Akcigit et al., 2023). Our contribution is to extend this discussion of how beyond direct state access by examining whether PCs operate indirectly through firms' positions in private inter-firm networks.

We study all publicly listed Indonesian firms from 2002–2019, a period of market liberalization amid uneven state capacity (Boubakri et al., 2013; Hallward-Driemeier et al., 2021). We construct a continuous, *power-weighted* PC score that aggregates executive–party ties by the contemporaneous political leverage of parties, moving beyond binary indicators (Faccio, 2010; Acemoglu et al., 2016; Chen et al., 2025; Wei et al., 2023). To address endogeneity, we estimate dynamic panel models with firm and year effects and multiple lags of outcomes, allowing for persistence and selection into ties (Acemoglu et al., 2019; Dörffel and Freytag, 2023).

Our results show that stronger PCs are associated with greater firm size, sales, and leverage; however, these associations attenuate markedly once we account for firms' inter-firm network positions. This pattern is consistent with a mediating structure in which political capital helps firms embed within business networks that provide complementary assets and coordination benefits, rather than operating solely through direct state favors. We interpret this through the lens of causal mediation frameworks (Imai et al., 2010; Pearl, 2014; Cinelli et al., 2024), without claiming strong causality.

The paper also speaks to several literatures. On measurement, we provide a continuous, power-weighted index of connectedness that captures both tie intensity and political leverage (Chen et al., 2025; Acemoglu et al., 2016; Faccio, 2010; Wei et al., 2023). On corporate governance and strategy, we link political ties to inter-firm embeddedness, bridging analyses of board interlocks and political affiliations (Hillman et al., 2009; Zona et al., 2018; Shipilov et al., 2023; Gatignon et al., 2023; Liu et al., 2024). On institutions and informality, our findings are consistent with informal structures substituting for missing market supports (Williamson, 2000, 2017) and complement evidence on the broader role of informal ties (Fisman et al., 2024; Bai et al., 2019; Colonnelli and Prem, 2022); they also connect to work showing that political and family board ties can stabilize firms in crises (Carney et al., 2020).

The remainder proceeds as follows. Section 2 describes the data and the construction of the political-connection and inter-firm network measures. Section 3 lays out the empirical strategy. Section 4 reports the main results. Section 5 explores mechanisms and heterogeneity. Section 6 concludes.

2 Data

2.1 Financial and Board Data

Our final dataset is an unbalanced panel of 787 publicly listed Indonesian firms and 8,061 firm-year observations spanning from 2002 to 2019. The unbalanced structure reflects the dynamic nature of the market: the number of listed firms increased from 336 in 2002 to 666 in 2019. We obtain firm-level financial outcomes from official financial statements made

available through the Indonesian Stock Exchange (IDX).

For our connection metrics, we compile a unique dataset from multiple sources. We begin by assembling a board-level directory using data from ICMD and Refinitiv Eikon. This dataset contains 12,700 unique director names across 18 years. We also compile a political elite directory based on administrative and electoral records, which includes information on 3,000 Indonesian politicians. For each, we record political position, party affiliation, and tenure. We match board members to politicians using a two-step procedure: exact name matching followed by fuzzy matching (matched higher than 90%), with all resulting matches manually verified using online public records and biographical information. This process ensures the validity and precision of our political connection measure.

For inter-firm connectedness (FC), we construct an annual network of shared board membership and count the number of unique firms that share at least one board member with another firm. For heterogeneity analysis, we compute the number of second-degree (indirect) connections—that is, firms connected via a two-step path through another firm's board member. From these networks, we derive an eigenvector centrality score for each firm in each year. Eigenvector centrality captures not only how many connections a node has, but how well-connected its neighbors are. In our context, a firm with high eigenvector centrality is not just well-networked, it is tied to other highly central firms, making its position in the network influential. Based on the distribution of eigenvector centrality each year, we create a binary variable, *Powerful Firm Connections*, which equals 1 if a firm ranks in the top 25% of the distribution in that year. A parallel set of variables is constructed for connections to banks, based on firms that share directors with identified financial institutions.

Table 1: Descriptive Statistics

Variable	**Mean**	**SD**	**Min**	**Max**	**N**
Financial Outcomes					
Total Assets (log)	7.31	1.85	2.53	11.65	8061
Sales (log)	6.43	2.07	0.12	10.67	7913
Debt-to-Equity Ratio	1.76	2.91	-9.62	18.67	7652
Connection Measures					
Political Connections (Unweighted Score)	6.75	11.42	0.00	169.00	8222
Political Connections (Power-Weighted Score)	0.25	0.91	-8.25	9.54	8222
Political Board Members (Dummy)	0.09	0.28	0.00	1.00	8222
Inter-Firm Connections (FC)	2.44	3.14	0.00	20.00	8885
Firm Eigenvector Centrality	0.01	0.04	0.00	0.44	8883
Top Firm Connectivity (Binary)	0.22	0.41	0.00	1.00	8885
Top Network Centrality (Binary)	0.24	0.43	0.00	1.00	8832

Notes: The table reports summary statistics for the main variables used in the analysis. Financial outcomes include log total assets, log sales, debt-to-equity ratio, and operating profit margin (%). Connection measures include directorship links, political connection scores, and eigenvector-based binary indicators. All financial variables are Winsorized at the 3rd and 97th percentiles to mitigate the influence of outliers and potential data entry errors, following standard practice in financial research.

2.2 Political-Connection Index: Construction and Rationale

We here detail the construction of the political-connection index used in the analysis. Let i index top executives of firm j in year t (Owners, President Commissioners, President Directors), and let p index political parties. Katadata provides an executive–party link score $\text{Score}_{ipt} \in \{0, 1, 2, 3, 4\}$ that depends on relationship type (blood/marriage vs. other) and on the politician's seniority within the party (party chair vs. key official), as summarized in Table 2 below.

As shown in Table 2, the scoring system distinguishes between blood or marriage ties and other relationships (e.g., regional, alma mater, or organizational affiliations), and weights the connection depending on whether the political figure is a party chairperson, high-ranking official, or family member.

Table 2: Political Connection Scoring System by Katadata Insight Center

Type of Relationship	**Party Chair**	**Key Party Officials**
Blood or Marriage Relationship	Score: 4	Score: 3
Other Relationship (regional, alma mater, organizational)	Score: 2	Score: 1
No Relationship		Score: 0

Party power varies over time with Indonesia's political landscape and is defined as

$$\text{Power}_{pt} \;=\; \text{ParliamentShare}_{pt} \times \text{AdminWeight}_{pt},$$

where $\text{ParliamentShare}_{pt} \in [0, 1]$ is the party's seat share and $\text{AdminWeight}_{pt} \in \{1,\ 0.25,\ -1\}$ indicates whether the party is in the governing coalition, neutral/independent, or in opposition, respectively. In each firm–year we first aggregate executive–level links to the party level,

$$A_{jpt} \;=\; \sum_{i \in \mathcal{E}_{jt}} \text{Score}_{ipt},$$

and then weight these party-specific affiliation stocks by contemporaneous party power:

$$PC_{jt} \;=\; \sum_{p \in \mathcal{P}} A_{jpt} \cdot \text{Power}_{pt}. \tag{1}$$

This formulation is explicitly multi-party: a firm may be connected to several parties in the same year, and the contributions of those ties add linearly. Because opposition parties carry negative administrative weight, PC_{jt} can be negative when a firm's portfolio leans toward the opposition. The assignment $\text{AdminWeight}_{pt} \in \{1,\ 0.25,\ -1\}$ encodes a simple normalization of expected policy leverage: ties to governing parties are most valuable (normalized to $+1$), ties to neutral or independent actors may still facilitate limited access (0.25), while ties to opposition parties plausibly reduce expected access to state-mediated favors and can even

impose costs (e.g., heightened scrutiny or reduced procurement prospects), hence a negative weight.[1]

In addition to the aggregation necessities, this construction also allows for capturing the two distinct movements of the index that are salient in the Indonesian context. First, party power changes with elections and cabinet formation, so the same set of executive affiliations can be revalued when parliamentary seat shares or coalition status shift. Second, firms adjust their affiliations when boards turn over or when executives gain or lose ties.

Figure 3.1 below illustrates how the effective power of parties has been changing in Indonesia, depending on their position in parliament and whether they were part of the ruling or opposition coalition. The figure shows average weighted power by year for each major party, excluding Partai Hanura and PBB. A dashed horizontal line indicates the zero baseline for reference.

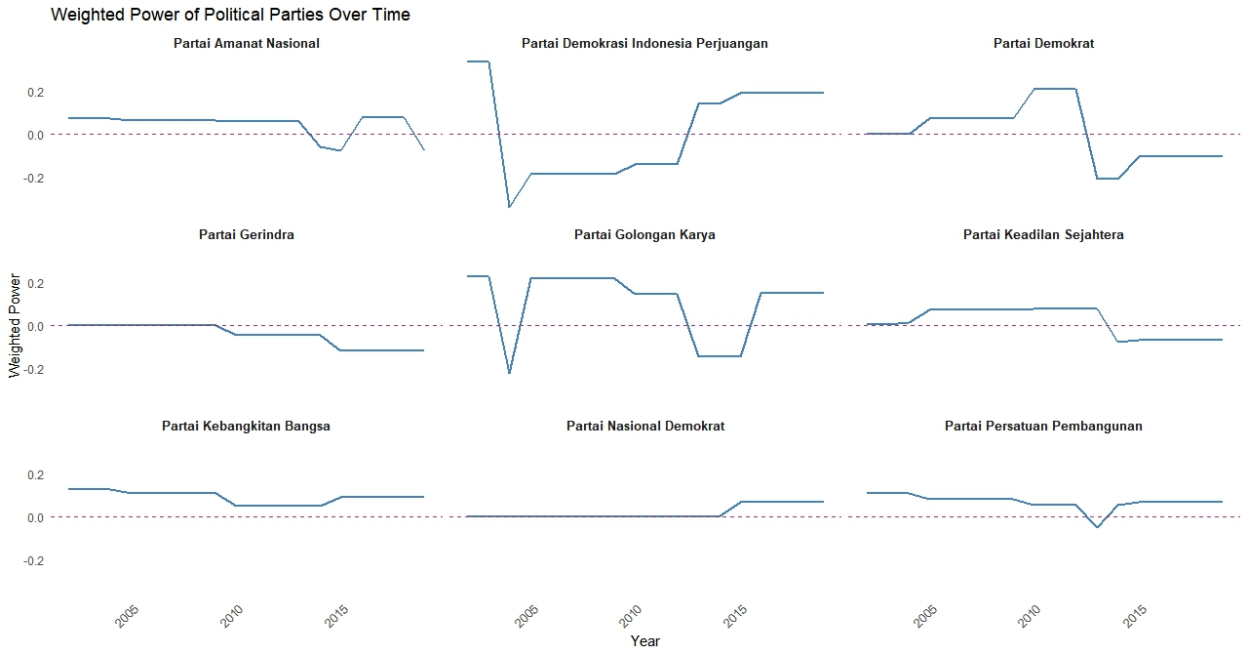

Figure 1: Trends in Weighted Power of Political Parties in Indonesia Over Time

This measure of political connection allows us to deal wit hand utilize the fact that some firms are connected to more than one party in Indonesia, an institutional detail critical to the nature of coalitional governance in the Indonesia.

Second, it ranks connection based on their closeness to politicians. This approach stands in contrast with the more common approach in the literature that treats connection to a

[1] In close-election RDD settings, "connection" is typically coded 0/1 with ties to losing candidates receiving weight 0 and ties to winners weight 1 (Akey, 2015; Heitz et al., 2023). Our use of -1 for opposition differs from this convention but is likewise a modeling normalization intended to capture potential downside of opposition alignment and to allow multi-party portfolios to net out. Under the plausible case that opposition ties are not as harmful as governing ties are helpful, and given that firms often hedge across parties, the -1 weight will tend to attenuate estimated effects by over-penalizing mixed portfolios, biasing coefficients toward zero. If anything, our estimates are therefore conservative. As a next step, we plan to decompose connections into ruling, opposition, and neutral components, and to show robustness to these weights.

politician as a binary measure and assumes a firm connected when they have any direct or indirect connection to a politician (Schoenherr, 2019; Chen et al., 2025). Our measure captures both the strength and proximity of a firm's connection to the political establishment.

Third, our new measure of political connection is at least partially exogenous to firm decisions, as it incorporates the external political power of connected parties. While we later include lags of both the outcome and the PC variable to address potential endogeneity concerns more directly, it is also safe to assume that changes in party power, such as shifts in parliamentary share or administrative position, are exogenous to individual firm performance.

3 Empirical Strategy

Our primary goal is to estimate the causal effect of political connections (PC) on firm growth, credit access, and financial performance. We do so using an unbalanced panel of publicly listed Indonesian firms from 2002 to 2019. The key regressor of interest is a novel, continuous political connection score that captures both the intensity of ties and the political power of connected actors, improving on binary indicators used in earlier studies. Our outcome variables include the log of total assets, log of sales, the debt-to-equity ratio, and profit margins.

A core challenge in estimating the effect of PC is endogeneity. Political ties are not randomly assigned; they reflect firm characteristics and can co-evolve with outcomes. We are concerned with two broad sources of identification threat. First, *omitted-variable bias*: (i) time-invariant, firm-specific factors (e.g., firm size and ownership structure, managerial networks, reputation) that drive both PC and performance, and (ii) time-varying economy-wide or political shocks that shift both outcomes and the returns to connections. Second, *selection and reverse causality*: firms may adjust their political portfolios in response to performance (e.g., sustained growth spurring influence-seeking; downturns inducing protection-seeking), and politicians may target ties toward already successful firms, generating dynamic feedback between outcomes and PC.

Our empirical strategy addresses these concerns in three steps. We include firm fixed effects (α_i) to absorb time-invariant heterogeneity and year fixed effects (δ_t) to capture common shocks. We then model state dependence explicitly by including multiple lags of the dependent variable, which mitigates spurious correlation arising from persistence in both outcomes and PC. Finally, we treat PC as endogenous and estimate dynamic panel specifications using system GMM, instrumenting PC and lagged outcomes with their own deeper lags; this approach accommodates co-evolution of PC and performance and selection into ties (Acemoglu et al., 2019; Dörffel and Freytag, 2023). In addition, the construction of our power-weighted PC measure provides plausibly exogenous within-firm variation through shifts in party power (parliamentary share and coalition status). By reweighting a firm's existing affiliations when the political landscape changes, these party-power movements supply identifying variation that is orthogonal to firm-specific shocks. The baseline equation is:

$$y_{it} = \alpha_i + \delta_t + \beta\,\mathrm{PC}_{it} + \sum_{j=1}^{p} \gamma_j y_{i,t-j} + \varepsilon_{it}, \tag{2}$$

where y_{it} denotes one of the firm-level outcomes, PC_{it} is the political connection score, and ε_{it} is the idiosyncratic error.

Estimating Equation 2 by OLS within estimator would result in biased estimates due to the correlation between lagged dependent variables and the firm-specific error component. This is especially problematic in panels with a short time dimension ($T \approx 10$), as in our case. To address this, we employ the system Generalized Method of Moments (system GMM) estimator proposed by Blundell and Bond (1998), which combines moment conditions from both the differenced and level specifications.

System GMM is well suited to our setting. In the differenced equation, we use lagged levels of the dependent variable and political connection score as instruments, while in the level equation, lagged differences serve as instruments. This dual system improves efficiency and addresses the weak instrument problem that can arise with highly persistent variables. Following best practice, we treat PC as endogenous and use internal instruments derived from its own lagged values, beginning at $t-1$, and collapse the instrument matrix to limit the threat of overfitting (Roodman, 2009). The dependent variable is also instrumented with its deeper lags. We assess the validity of our instrument set using the Hansen test, the Arellano-Bond test for second-order autocorrelation.

Our panel is unbalanced due to staggered firm entry and exit. System GMM accommodates this structure by constructing moment conditions over the available observations for each firm, ensuring efficient use of information. Furthermore, our use of a continuous political connection score helps address weak instrument concerns that often arise with binary or infrequently changing variables in short panels.

4 Results

The dynamic panel estimates in Table 4 provide evidence of both stronger persistence in firm financial outcomes and modest but meaningful effects of political connections. Compared to the within estimations reported in Table 3, the GMM results reveal a higher degree of path dependence. The sum of the coefficients on the first and second lags of the dependent variable is 0.93 for log assets, 0.80 for log sales, and 0.29 for the debt-to-equity ratio (DER), indicating that past performance is a strong predictor of current outcomes—particularly for size and growth measures. These higher persistence values underscore the importance of addressing potential bias arising from dynamic panel structures. In contrast, the corresponding within estimates are 0.60 for both assets and sales, and 0.32 for DER. The upward shift in the GMM estimates is consistent with the expected direction of Nickell bias, whereby fixed-effects estimators in short panels tend to underestimate persistence due to the correlation between lagged outcomes and unobserved firm effects (Chen et al., 2019).

Turning to the main explanatory variable of interest, the power-weighted political connection score (PC) is positively and significantly associated with all three firm outcomes in the GMM models. Given a sample mean of 0.25 and a standard deviation of 0.91, a one-unit increase in PC, slightly more than one standard deviation, is associated with a 0.02 increase in log total assets and a 0.03 increase in log sales. Interpreted in percentage terms, this corresponds to roughly a 2% increase in firm assets and a 3% increase in sales. These effects, although moderate in size, are economically meaningful given the compounded nature of

firm growth and the fact that the political connection variable is highly skewed, with only a small share of firms holding a large number of ties.

The impact of political connections on credit access, proxied by the debt-to-equity ratio, is similarly positive. A one-unit increase in PC is associated with a 0.05 increase in DER. Considering the sample mean of DER is 1.76, this corresponds to a 2.8% increase in leverage relative to the average firm. This finding aligns with the view that political capital facilitates access to external finance, potentially by improving perceived creditworthiness or enabling preferential treatment from politically influenced financial institutions (Khwaja and Mian, 2005; Faccio, 2010).

While the within estimator yields qualitatively similar results—positive and significant coefficients on political connections across all outcomes—there are some notable differences in magnitude. For instance, the estimated effect of PC on credit access is higher under the within estimator (0.10) than in the GMM model (0.05), and on sales (0.033 vs. 0.03), though these differences are within a comparable range. The GMM results, however, are arguably more reliable given their ability to correct for endogeneity and capture dynamic adjustment more fully. Moreover, the GMM framework better accommodates firm-level persistence and mitigates concerns about measurement error in lagged regressors, making the estimates more suitable for assessing long-run firm dynamics.

Taken together, the results suggest that political connections function as a valuable intangible asset that can support firm expansion and financial flexibility. Although the estimated effects may appear modest, their dynamic accumulation especially in persistently growing firms can lead to substantial long-term advantages.

Table 3: Within Estimation Results

	(1) Assets	**(2) Sales**	**(3) Credit Access**
Lag 1 DV	0.492***	0.492***	0.260***
	(0.029)	(0.029)	(0.039)
Lag 2 DV	0.106***	0.106***	0.056**
	(0.025)	(0.025)	(0.025)
Political Connection	0.014**	0.033***	0.100***
	(0.007)	(0.011)	(0.032)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	6,087	5,709	5,003

Notes: All models include firm and year fixed effects. Standard errors are clustered at the firm level. All financial variables are winsorized at the 3rd and 97th percentiles. Banks and financial firms are excluded.
DV abbreviates dependent variable. Leverage is measured as the debt-to-equity ratio; asset and sales are log-transformed.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: GMM Estimates: Effects of Political Connection on Financial Outcomes

	(1) Assets	(2) Sales	(3) Credit Access
Lag 1 DV	0.78***	0.67***	0.26***
	(0.03)	(0.04)	(0.05)
Lag 2 DV	0.15***	0.13***	0.03
	(0.02)	(0.03)	(0.025)
Political Connection	0.02**	0.03**	0.05*
	(0.01)	(0.01)	(0.029)
Time FE	Yes	Yes	Yes
Observations	6,087	5,709	5,003
Hansen p	0.28	0.13	0.14
AR(2) p	0.19	0.71	0.69

Notes: Two-step system GMM estimates with Windmeijer-corrected standard errors in parentheses. Instruments are collapsed to limit proliferation. DV indicates the dependent variable.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5 Mechanism and Heterogeneity Analysis

Having established the effects of political connections (PCs) on firm size, growth, and access to credit, we now turn to possible underlying mechanisms that generate these outcomes and the heterogeneity in their impact across firms.

5.1 Mechanism

In this section, we examine a relatively underexplored mechanism through which PCs influence firm performance: the facilitation of inter-firm connectedness. Drawing on network theory and the idea that PCs grant privileged access to elite circles, we argue that politically connected firms are more associated with board interlocks with other firms. These inter-firm ties can provide strategic advantages such as enhanced information flow, increased credibility, and access to business opportunities that support asset accumulation and sales growth.

Our analysis complements and extends the mechanisms reviewed in Wei et al. (2023), who highlight heterogeneity in the benefits of PCs based on market capability, political salience, and the nature of the connection. While these factors help explain who gains more from PCs, our focus is on how these connections translate into improved firm outcomes, specifically through the expansion of a firm's position in business networks.

Although it is plausible that larger or more successful firms are more likely to form board ties, our dynamic panel approach with lagged variables is designed to assess whether PCs enable firms to embed themselves in inter-firm networks rather than simply reflect pre-existing advantages. In the following section, we also test whether the marginal returns to

FC are greater for firms with initially weaker network positions. This is consistent with the view that PCs serve as a compensatory mechanism for more peripheral firms.

While both our FC (inter-firm connections) and PC (political connections) variables are continuous by design, making it challenging to directly visualize their correlation at the firm level in a panel data setting, Figure 3.2 presents the trends in their yearly averages across firms. We observe that the number of inter-firm connections increased steadily until 2014, after which it began to decline. The initial rise is consistent with the expansion in the number of listed firms over time, while the decline after 2014 may reflect a negative shock to the power of certain political parties, which in turn reduced the political connection scores of their associated firms. Political connections also display notable fluctuations around election years. In particular, the 2014 election of Joko Widodo (Jokowi), an outsider candidate who campaigned on anti-establishment and anti-corruption platforms, appears to have prompted a significant reconfiguration of political ties. This likely weakened connections for firms linked to parties associated with the previous administration and strengthened connections for those more aligned with Jokowi's coalition. This pattern aligns with the shifts in effective party power illustrated earlier in Figure 3.1.

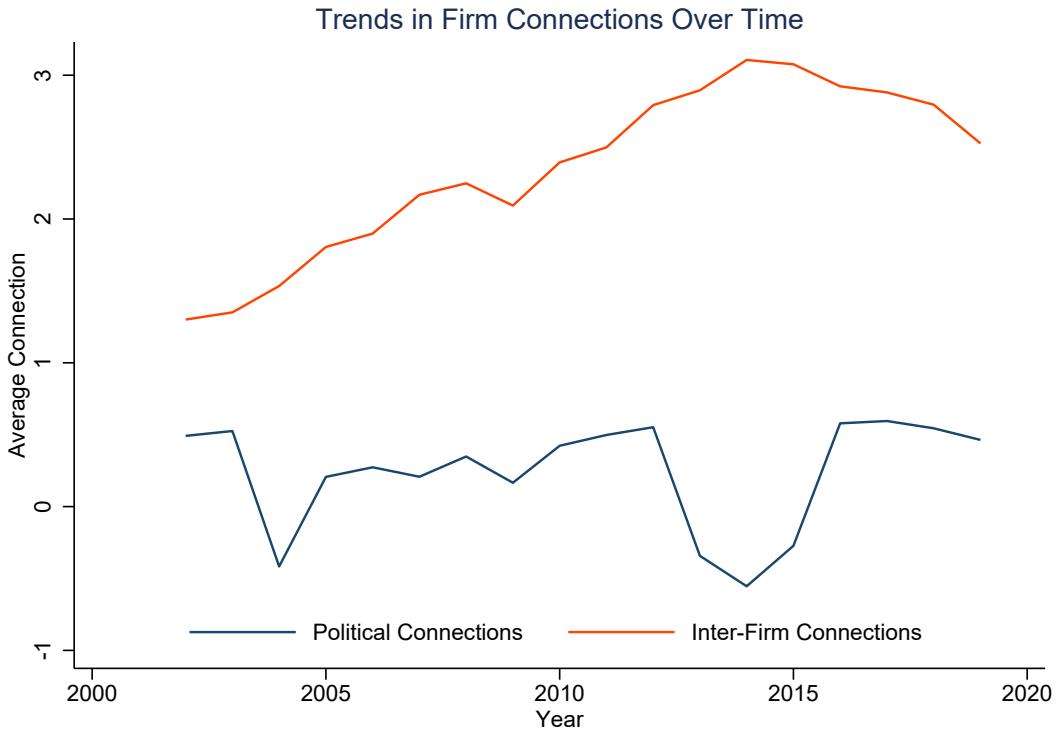

Figure 2: Average Political Connection and Inter-Firm Connections Over Time.

To empirically test whether FC plays a mediating role, we follow a two-step approach. First, we show that PC and FC are associated with direction of effect seems to be going from PC to FC. The following results confirm that political connections significantly increase inter-firm connectedness, supporting the first step of the mechanism.

Table 5: Effect of Political Connection on Firm Connectedness

	(1) Firm Connectedness
Lag 1 FC	0.758***
	(0.025)
Lag 2 FC	0.083***
	(0.028)
Lag 3 FC	−0.061**
	(0.023)
Political Connection	0.093**
	(0.044)
Time FE	Yes
Observations	5,926
Hansen p	0.081
AR(2) p	0.886

Notes: GMM estimations with Windmeijer-corrected standard errors in parentheses. The dependent variable is the number of unique firms each firm is connected to via shared board members (Firm Connectedness). Instruments are collapsed to limit proliferation.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Next, to examine the mediating role of FC, we estimate a modified version of our baseline growth regression that includes both PC and FC as jointly endogenous regressors:

$$y_{it} = \alpha_i + \delta_t + \beta_1 \text{PC}_{it} + \beta_2 \text{FC}_{it} + \sum_{j=1}^{p} \gamma_j y_{i,t-j} + \varepsilon_{it}, \tag{3}$$

where y_{it} denotes firm growth outcomes such as log total assets or log sales. Both PC_{it} and FC_{it} are treated as endogenous and instrumented using their respective lagged values, following the same approach as in the baseline specifications.

Table 5 confirms this relationship: political connections have a positive and statistically significant effect on firm connectedness, as measured by the number of unique firms a company is linked to via shared board members. The coefficient of 0.093 on political connection in Table 5 implies that a one-unit increase in the power-weighted political connection score leads to an increase of approximately 0.093 in the number of inter-firm ties a company maintains through shared board members. Given that the average firm in the sample is connected to 2.44 other firms (Table 1), this effect represents about a 3.8% increase in inter-firm connectedness. These findings suggest that politically connected firms not only access political capital but also occupy more embedded positions within the corporate network, likely benefiting from privileged access to elite circles and enhanced reputational capital.

To assess whether inter-firm connectedness mediates the effect of political connections on financial outcomes, Table 6 presents estimates from a model where both PC and FC enter jointly as endogenous variables. The results show that once firm connectedness is included in the model, the coefficient on political connection becomes smaller and statistically insignificant, while the coefficient on firm connectedness remains positive and highly significant for

both asset and sales outcomes. This pattern is consistent with a mediation mechanism, where part of the benefit of political capital materializes through improved network integration rather than direct political rents alone. This is consistent with partial mediation, as discussed in Imai et al. (2010), Pearl (2014), and more recently Cinelli et al. (2024). While we refrain from making strong claims about causal mediation, this evidence is suggestive of a meaningful pathway through which political capital influences firm growth indirectly via enhanced inter-firm connectivity.

Table 6: Effects of Firm and Political Connectedness on Financial Outcomes

	(1) Log Assets	**(2) Log Sales**	**(3) Credit Access**
Lag 1 DV	0.757***	0.661***	0.236***
	(0.032)	(0.036)	(0.047)
Lag 2 DV	0.147***	0.144***	0.046
	(0.023)	(0.028)	(0.028)
Firm Connectedness	0.030***	0.036***	0.018
	(0.007)	(0.011)	(0.019)
Political Connection	0.009	0.005	0.052
	(0.010)	(0.014)	(0.033)
Time FE	Yes	Yes	Yes
Observations	6,087	5,709	5,003
Hansen p	0.150	0.055	0.136
AR(2) p	0.253	0.423	0.679

Notes: Windmeijer-corrected standard errors in parentheses. Instruments are collapsed to control for proliferation. Firm Connectedness is the number of unique firms a company is connected to via board interlocks. Credit Access is measured via the debt-to-equity ratio (DER).
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Taken together, these results point to a politically induced expansion of network centrality as a plausible mechanism by which firms with political access experience better growth.

5.2 Heterogeneity Analysis

To explore whether the effects of political connections vary depending on firms' positions in inter-firm networks, we focus on a binary indicator derived from eigenvector centrality. Specifically, we construct the variable *Powerful Firm Connection* (PFC), which equals one if a firm is in the top quartile of the eigenvector centrality distribution in a given year. This measure captures both the extent and quality of a firm's inter-firm ties—identifying those that are not only well connected but embedded within the core of Indonesia's corporate elite.

We estimate the following dynamic panel specification (Equation 4), which includes political connection (PC), PFC, and their interaction, to assess whether the effects of political

capital differ across network positions. The results are reported in Table 7.[2]

$$\begin{aligned} \mathrm{Y}_{it} = \alpha_1 \mathrm{Y}_{i,t-1} + \alpha_2 \mathrm{Y}_{i,t-2} + \beta_1 \mathrm{PC}_{it} + \beta_2 \mathrm{PFC}_i + \beta_3 (\mathrm{PC}_{it} \times \mathrm{PFC}_i) \\ + \delta_t + \mu_i + \epsilon_{it}, \end{aligned} \tag{4}$$

where Y_{it} denotes a financial outcome, here log assets or log sales. PC_{it} is the firm's political connection score, and PFC_i is the binary indicator of whether the firm is well-positioned in the inter-firm network. The model includes firm and year fixed effects and is estimated as before.

In this formulation, the coefficient β_1 captures the effect of political connections on firms that lack powerful connections to other firms. The interaction coefficient β_3 reflects how this effect differs for firms that are already well connected. A negative and significant β_3 would suggest that political connections are more valuable for firms on the periphery of business networks while a positive coefficient would imply that politically connected firms gain more when already central in elite business circles. The sum $\beta_1 + \beta_3$ represents the total effect of political connections for highly connected firms.

Table 7: Heterogeneous Effects of Political Connections by Powerful Firm Ties

	(1) Log Assets	**(2) Log Sales**	**(3) Credit Access**
Lag 1 DV	0.809***	0.647***	0.223***
	(0.030)	(0.040)	(0.044)
Lag 2 DV	0.165***	0.122***	0.040
	(0.025)	(0.032)	(0.027)
Powerful Firm Connection (PFC)	0.084***	0.013	−0.103
	(0.025)	(0.039)	(0.093)
Political Connection (PC)	0.033***	0.050**	0.033
	(0.012)	(0.020)	(0.042)
PC × PFC Interaction	−0.028**	−0.018	0.039
	(0.013)	(0.023)	(0.052)
Time FE	Yes	Yes	Yes
Observations	6,087	5,709	5,003
Hansen p	0.361	0.058	0.200
AR(2) p	0.435	0.801	0.625

Notes: Corrected standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The coefficient on PC in column (1) indicates that for firms outside the central elite (PFC = 0), a one-unit increase in political connections is associated with a 0.033 increase in log assets—roughly a 3.3% increase in firm size. This is substantially higher than the average GMM effect of 0.02 reported earlier (Table 4), suggesting that political ties are particularly valuable for less-connected firms. The interaction term is negative and statistically significant

[2]We also constructed an alternative binary indicator, *Top Firm Connectivity* (TFC), based on the top 25% of firms in terms of the number of direct board interlocks. However, interaction terms using TFC were not statistically significant.

(–0.028, p ¡ 0.05), indicating that this advantage fades among firms that are already central in the business network. For these firms (PFC = 1), the marginal effect of PC is just 0.005, which is not statistically different from zero.

For sales (column 2), a similar pattern holds: politically connected peripheral firms experience a 0.050 increase in log sales (approximately 5.1%), which exceeds the average GMM estimate of 0.03. Again, the interaction with PFC is negative, though not statistically significant at conventional levels, suggesting a weaker but directionally similar attenuation among central firms.

For credit access (column 3), neither the direct effect of PC nor its interaction with PFC is statistically significant. This may reflect the fact that debt markets in Indonesia are shaped less by inter-firm ties and more by direct relationships with financial institutions or political gatekeepers—mechanisms not necessarily captured by board network centrality.

Overall, these findings suggest that political connections operate as a form of compensatory capital: their value is greater for firms that are less integrated into elite business circles. For firms already well embedded in the corporate network, political connections offer little additional advantage, at least with respect to size and sales growth.

6 Robustness

A potential concern in interpreting the relationship between political connections (PC) and firm connectedness (FC) is the threat of reverse causality. While our main results suggest that political ties facilitate the expansion of inter-firm networks, it is conceivable that firms already well embedded in business networks are more likely to attract politically connected individuals to their boards or gain proximity to political power. If this reverse channel were operative, the observed association between PC and FC could partly reflect endogenous selection into political connectivity rather than a causal mechanism running from PC to FC.

To examine this possibility, we estimate a dynamic panel model where political connection is the dependent variable and firm connectedness is included as a regressor. As shown in Table 8, the coefficient on firm connectedness is statistically insignificant (0.003, $p > 0.10$), providing no evidence that firms with greater board interlocks systematically acquire more political ties in subsequent periods. The lag structure on PC also exhibits expected dynamics, but FC itself does not appear to drive PC in this specification.

Moreover, the Hansen test of overidentifying restrictions yields a p-value of 0.037, suggesting weaker instrument validity in this reversed model relative to our baseline specification (Table 5, Hansen $p = 0.081$). This discrepancy may indicate that the identifying assumptions are less plausible when reversing the direction of causality. One reason is that political connections are shaped by unobserved reputational or strategic factors that are more persistent and difficult to instrument effectively. In contrast, changes in firm connectedness are more observable and structurally linked to appointment decisions, making the forward-looking specification more defensible from an econometric standpoint.

Taken together, both the lack of statistical support and the relatively poor model diagnostics in the reverse specification suggest that the direction of causality is more likely to run from political connections to firm connectedness, not the other way around.

Table 8: Effect of Firm Connectedness on Political Connection (System GMM)

	(1) Political Connection (PC)
Lag 1 PC	0.509***
	(0.033)
Lag 2 PC	−0.079**
	(0.031)
Lag 3 PC	−0.111***
	(0.032)
Firm Connectedness	0.003
	(0.010)
Time FE	Yes
Observations	5,610
Hansen p	0.037
AR(2) p	0.335

Notes: Corrected standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

7 Conclusion

This study examines how political connections shape firm outcomes in Indonesia by focusing on three key dimensions: firm size, growth, and access to credit. Using a panel of publicly listed firms from 2002 to 2019 and dynamic panel estimations that account for persistence and endogeneity, we find that political connections have modest but economically meaningful effects on firm expansion and leverage. Politically connected firms grow larger, generate more sales, and exhibit higher debt-to-equity ratios suggesting privileged access to financial markets and growth-enabling resources. Beyond direct effects, we uncover a mechanism through which political ties translate into firm-level advantage: the expansion of inter-firm connectedness via board interlocks. Our results show that political capital facilitates a firm's embeddedness in elite business networks, which in turn contributes to performance improvements. Mediation analysis indicates that part of the benefit of political connections is realized indirectly through this expanded network centrality.

We further explore heterogeneity in these effects and show that political connections are particularly valuable for firms with weaker initial access to inter-firm networks. Among firms on the periphery of Indonesia's corporate elite, the marginal effect of political connections on firm size and growth is significantly stronger, suggesting that political capital may act as a substitute for network-based forms of embeddedness.

Taken together, these findings contribute to a growing literature on political economy and corporate governance in emerging markets by highlighting how political capital interacts with network structures to shape firm trajectories.

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