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RESEARCH ARTICLE

Firm-specific characteristics, political connections, and financial outcomes: Evidence from Indian firms

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Abstract
Our selection and endogeneity corrected findings suggest that firms' political connections negatively influence their market value. We find that firms with a larger size, more operationally efficient in utilizing their assets, and those operating in more concentrated industries benefit more from the political connections than the otherwise corresponding firms. We also report that political connections do not influence firms' leverage choices. However, we find that politically connected firms with higher leverage have significantly lower market value. Further, we note that political connections help the firms operating in unregulated but more concentrated industries, probably to obtain 'private benefits', leading to their higher market value. Overall, our results indicate that the effect of political connections is not homogeneous across the sample firms. They also raise questions on the motivation of sample firms' political connections, suggesting that these firms probably obtain political connections for reasons other than enhancing their market value.

Keywords: political connections; market value; leverage; concentrated industries

Introduction

Do businesses benefit from their political connections? Firms owe their survival to external environment, which provides both opportunity and risk, opportunity by providing resources and growth avenues and risk by constraining opportunity set.[1] Governments often control the external environment of businesses through regulations, policy formulations, and enforcement. Businesses that obtain connections with the government can reduce the uncertainty arising from external environment, which may affect their market value. However, governments, particularly in promarket economies, depend on the businesses for their investments to achieve overall economic growth and job creation. In a way, there is a significant potential for nexus between businesses and government.

A good amount of recent academic scholarship has documented businesses' costs and benefits of political connections. Businesses nurture these connections either by financially contributing to the political parties for their electoral activities or by recruiting the current/former policy makers/bureaucrats to their board of directors. Pfeffer and Salancik observe that "when an organization appoints an individual to a board, it expects the individual will come to support the organization, will concern himself with its problems, will favourably present it to others, and will try to aid it."[2] Firms accrue various advantages from their political connections,[3] like easy access to key resources including institutional financing, preferential treatment in awarding government contracts, and government-sponsored bailouts. These advantages also include favorable external environment and effective prediction of potential regulatory/policy changes, thus providing the connected firm a head start in

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[1]Thompson (1967).
[2]Pfeffer and Salancik, 1978, p. 163.
[3]Faccio et al. (2006); Goldman et al. (2009); Bao et al. (2016).

identifying new opportunities.[4] In contrast, several studies report that political/bureaucratic connections have negative influence on the firms' performance and market value.[5] They show that politically connected board members lack business acumen, indulge in rent-seeking activities to benefit their political goals, and do not have incentive to maximize shareholders' wealth. Further, findings suggest that politically connected firms are more opaque, indulge in earnings management, and are more likely to suffer from their contractual uncertainty than their otherwise corresponding firms, leading to their poor performance and lower market value. Apparently, there is no consensus about the effect of political connections on the firms' financial outcomes. Such disparate empirical evidence may be attributable to the varied extent of institutional, regulatory, and economic developments across countries.[6] Political connections affect firms' financial outcomes through their influence on institutional mechanisms, including contract enforcement, along with lender compensation, and through sway on the managers to contribute to social objectives.[7] These institutional mechanisms are at different stages of their development across countries resulting in significant differences in the costs and benefits of corporate political connections. Further, firms with their cross-sectional heterogeneity may also differentially exploit the political connections for their advantages.

In the present study, we examine the influence of political connections on firms' financial outcomes, such as their market value and financial leverage. We have chosen India as a context for various reasons. Over the last three decades, India has been embracing the promarket economic reforms by effectively shedding its image of public-sector dominated mixed economy. The reforms have significantly increased the role of private-sector businesses as the drivers of economic growth. However, governments in India still impact business operations through their discretionary authority over regulated use of natural resources, infrastructure, and other policy instruments. Further, India as an "emerging economy" suffers from largely unaccountable political and bureaucratic systems, corruption, and weak contract enforcement due to the overburdened legal system.[8] Businesses in India continue to depend on their ability to anticipate and accommodate with the minimum costs to the changes in government policies.[9] In turn, the government's policy makers, for their political fortunes, also depend on the private-sector business investments for job creation and overall economic development. To navigate successfully through these institutional imperfections, firms often develop connections with the networks of policy makers and bureaucrats. Similar to France, as Bertrand et al. (2018) reported, in India businesses and bureaucrats/politicians have overlapping networks and bureaucrats/politicians often join private-sector firms after their retirement. For the purpose of this study, we consider a firm as politically connected if at least one of its board of directors has the experience of either government policy making or execution. Because India follows the federal government structure with the constitutionally defined jurisdictions for central and state governments, we consider the experience of policy making at both the levels while identifying the politically connected board members.

Our selection- and endogeneity-corrected findings suggest that firms' political connections significantly and negatively influence their market value. We report a similar relationship for firms operating in heavily regulated industries. The reported evidence suggests that the political connections destroy the shareholders' wealth in the case of our sample firms as the costs they incur because of political connections seem to outweigh the associated benefits. We found that political connections do not affect firms' financial leverage. Further, we argue that the effect of political connections is not homogeneous and varies across the firms depending upon their size, operational efficiency, leverage, and industry concentration. The prevailing research work has largely ignored the effect of these firm- and industry-specific attributes on the relationship between political connections and firms' financial outcomes. Our empirical setting offers us an opportunity to examine such heterogeneity in

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[4]Zhu and Chung (2014).
[5]Gul (2006); Bliss and Gul (2012); Hadani and Schuler (2013); Bertrand et al. (2018); Luo et al. (2020).
[6]Faccio (2006).
[7]Keefe (2019).
[8]Kshetri and Dholakia (2011); Ahsan (2013).
[9]Molitor (1977).

relationship. The findings suggest that firms with larger size, with greater operational efficiency, and operating in the more concentrated industries benefit more from political connections than their otherwise corresponding firms. Firms operating in the less regulated and more concentrated industries benefit more from the political connections. These firms seem to aim for their private benefits by recruiting a politically connected board of directors. We also report that firms with higher leverage experience an aggravated negative influence of political connections on their market value. The reported findings are robust for the various definitions of political connections and market value of sample firms. We attribute the negative effect of political connections on the firms' market value to the increased knowledge of market participants about the adverse consequences of corporate political connections.

This study contributes to the knowledge of market participants about the influence of corporate political connections and existing strands of literature at least in four ways. The first is those studies that examine the association between businesses and politics. These studies reported various benefits[10] and costs[11] of firms' political connections. We contribute to this literature by adding a hitherto neglected dimension of heterogeneity in the impact of political connections on firms' financial outcomes. We show that the effect of political connections is contingent upon various firm- and industry-specific characteristics. Second, is the strand of literature that studies how a board of directors' attributes affect the firms' financial leverage and market value. In this study, we consider the board of directors' political/bureaucratic connections as an important attribute because such connections help the firms absorb external uncertainties associated with government.[12] Contrary to the popular expectation, we report that corporate political connections negatively influence the shareholders' wealth. Third is the extant political economy and industrial organization literature that examines association between degree of industry concentration and firms' choice of political connections.[13] We have explored the effect of political connections on the market value of firms classified based on their degree of industry concentration. Finally, apparently, this is one of the first studies[14] that comprehensively examined the effect of political connections in the context of Indian listed firms. We believe that this study's findings will offer valuable information for the market participants evaluating Indian firms for potential investments.

This article is organized as follows. In the following section, we describe the institutional background. Section 3 develops the hypotheses. Section 4 presents the method wherein we describe the sample, variables, and estimation procedure. Section 5 discusses the empirical results, and section 6 offers the concluding remarks.

Institutional background

After its independence in 1947, India followed a mixed economy model, allowing both private and public sectors to contribute to economic growth. It emphasized the establishment of heavy industries and, in practice, accorded a prominent role for the public sector. The government regulated the private sector through licensing policy and provided protection from competition by preventing international imports. These license-permit raj policies made the entrepreneurial activities (both private as well as public) less productive and failed to yield desired economic growth. With the below-par success of this mixed economy model, since the late 1980s, India started adopting the probusiness policies, shifting the focus from redistribution of wealth to economic growth. The government started opening sectors that were formerly earmarked for the public sector to the private sector. These promarket reforms were implemented in two stages.[15] First, internal liberalization policies were introduced in 1980s. These

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[10]Agrawal and Knoeber (2001); Fisman (2001); Johnson and Mitton (2003); Faccio (2006).

[11]Gul (2006); Aggarwal et al. (2012); Bertrand et al. (2018); Luo et al. (2020).

[12]Pfeffer (1972).

[13]Olson (1965); Hart (2003); Hansen et al. (2005).

[14]In a recent study, examining a limited number of sample firms, Chahal and Ahmed (2020) reported a significant investment inefficiency in the case of politically connected Indian firms.

[15]Murali (2019).

policies include easing the restrictions of the Monopolies and Restrictive Trade Practices Act, allowing broad-banding and delicensing of twenty-five industries (e.g., paper, printing, pharmaceuticals, rubber, ceramics). Second, the reforms of 1991, reconfigured both external and internal economic policies including the elimination of industrial licensing system and reducing the government control over the private sector. These reforms turned the focus to the "private-sector investment" as the main engine of economic growth. The virtual elimination of the licensing system increased capital mobility and removed the controlling role of government in the location of private-sector investments. Further, multiparty coalition governments in India have advanced these reforms in fits and starts. This economic liberalization in India resulted in a greatly increased role for the private sector.

In India, political decision making is decentralized, with both central and state governments having constitutionally defined jurisdictions. Firms are governed by the guidelines and policies framed by both these central government and state governments. Central government makes laws pertaining to natural resources, financial markets, taxation, and international trade, among others. The state governments control policies on land, labor, police, local infrastructure, utilities (including electricity and water), and so on. With the delicensing of most of the industries since the 1980s, the role of state governments has increased in facilitating the private-sector investments and creating probusiness environment. Further, policy makers' political fortunes at both central and state governments, mostly tied to economic performance and job creation; hence they need to attract private capital to spur economic growth.

An examination of Indian business composition, three decades after proliberalization policies, reveals that old conglomerates and large business houses control a large share of its economy.[16] This can be attributed to the "emerging" status of the Indian business environment that still suffers from several institutional voids. Though India is the most densely populated and democratically governed, its bureaucratic and political system is largely unaccountable and corrupt.[17] Transparency International[18] places India as one of the highly corrupt countries with an index value of 41 on a scale of 0 to 100 (average score of all 180 countries assessed has been 43, and 67% of the countries score lower than 50), where 100 is very clean and 0 is highly corrupt, for the year 2019. Legal systems in India are overburdened and characterized by prolonged procedural delays in contract enforcement.[19] Bureaucratic red tape often causes inordinate delays, higher costs, and reduced flexibility for businesses to embark on their enterprising activities. However, India has witnessed rapid growth on a few elements of democracy that help entrepreneurship. They include a vibrant press, vocal media, and vigilant civil society. They keep a careful watch on politicians, bureaucracy, and companies.[20] Nevertheless, institutional mechanisms continue to provide avenues for government officials to apply their discretions.[21] In such an institutional environment, firms seek political connections to navigate through institutional and market imperfections and to obtain favorable consideration from the local and central governments.[22] In this context, we attempt to investigate the influence of political connections on various financial outcomes of Indian listed firms.

Literature and hypotheses development

Positive effects of political connections

Positive effects of firms' political connections can be explained using the resource-based theory of firm.[23] The theory suggests that firms possessing "strategic resources" have competitive advantage

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[16]Shah et al. (2015).

[17]Kshetri and Dholakia (2011).

[18]A report of Transparency International's Corruption Perceptions Index for the year 2019: https://www.transparency.org/files/content/pages/2019_CPI_Report_EN.pdf (accessed 7 November 2020).

[19]Ahsan (2013).

[20]Khanna and Palepu (2010).

[21]Arnoldi and Muratova (2019).

[22]Li et al. (2008).

[23]Barney (1991).

over their rivals, leading to sustained profits and higher market value. "Political connections" can be one of such firms' strategic resources as they are valuable, difficult to imitate, and nonsubstitutable, especially in emerging economies such as India. India, though adopted market-centric economic policies way back in 1980s, governments still control key resources such as business operating licenses in various industries,[24] infrastructure, electricity, land, and natural resources (crucial raw material for various industries). Owing to the underdeveloped nature of its market institutions, businesses in India face numerous obstacles.[25] Further, legal systems in India are too weak to enforce contracts and protect property rights. As argued by Li et al. (2008), in such an environment, close connection with the policy makers and/or bureaucrats helps businesses to successfully navigate through these ill-functioning institutions. In a way, political connections provide value to firms in India in terms of beneficial treatment by government-controlled enterprises (e.g., raw material producers for energy-generating firms), preference in government contracts, relaxed regulatory oversight, and access to the communication on expected changes in the relevant policies.[26]

Further, political connections, as strategic resources, help firms to obtain favorable policy environment,[27] access to institutional debt financing,[28] and support in times of their economic turbulence,[29] thereby leading to their enhanced market value.[30] Fisman (2001), examining a sample of Indonesian firms during 1995 and 1997 when there were rumors about President Suharto's health conditions, reported that firms' political connections positively influence their value. Johnson and Mitton (2003) noted the increased market value of politically connected Malaysian firms after the imposition of capital controls in September 1998. Faccio (2006), from her multicountry analysis, reports that political connections are valuable in the countries with a greater incidence of corruption. Bao et al. (2016) report that political connections help firms in accessing the financial markets by reducing the costs of initial public offering (IPO), including IPO rejection risk. Further, Goldman et al. (2009) note that political connections are strategic resources even in the context of well-developed legal and institutional mechanisms. In India, with its higher incidence of corruption and interventional government policies, we expect that firms prefer to have political connections to manage their external environment. Apparently, barring a few studies[31] that examined Indian firms as part of their multicountry analysis, there is no focused study that examined the value of corporate political connections in the context of Indian firms. Hence, we present our prediction in the form of the following hypothesis.

H1a. Firms' political connections positively influence their market value.

Negative effects of political connections

While resource-based theory of firm postulates positive association between firms' political connections and their financial outcomes, many scholars advocate negative effects of corporate political connections. In one of the seminal papers, Shilefer and Vishney (1994) show that firms benefit from political/bureaucratic connections if associated marginal benefits outbalance the marginal costs. The costs of political connections can be comprehended using several implications of the agency theory of firm. First (rent-seeking activities of politically connected board members), politically connected board members may pressurize the firms to undertake the activities that serve their political interests. These activities include providing the excessive employment, undertaking investment activities in the areas of their political interest, deferring the plant winding up activities to the nonelection years, aiding/acquiring poorly performing but sensitive companies for their political interest, and so on. These

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[24]These industries include coal, petroleum, telecommunications, power generation, fertilizers, and so on.
[25]Khanna and Palepu (2010).
[26]Faccio (2006).
[27]Li et al. (2008); Zhu and Chang (2014).
[28]Khwaja and Mian (2005).
[29]Faccio et al. (2006).
[30]Fisman (2001); Johnson and Mitton (2003); Faccio (2006).
[31]E.g., Faccio (2006).

rent-seeking activities of politically connected board members can be expensive and negatively influ-ence the value of politically connected firms.[32] Second (information asymmetry/opaqueness), corpo-rate political connections are more often the manifestation of existing executives' personal preference for ideology rather than to further economic benefits of the firm.[33] Aggarwal et al. (2012), examining the US firms, report that firms' political donations negatively influence their long-term stock return performance. Further, politically connected firms are more opaque with their managed earnings and higher related party transactions than similar nonconnected firms.[34] Gul (2006), examining the Malaysian politically connected firms, reported that they are prone to financial misstatements leading to increased audit efforts and related fees. Such an opaque environment provides a ground to indulge in expropriation by controlling shareholders. These agency problems between politically connected board members and minority shareholders contribute to the lower valuation of politically connected firms. Third (less professionalism), firms appoint politically connected board members for their net-work connections with the policy formulation and implementation. These politically connected board members tend to have less business acumen and subject expertise leading to inferior corporate deci-sions.[35] Further, firms do not prefer to fire politically connected board members even if their perfor-mance don't meet the expectations.[36] In a way, these directors may not be truly independent and may not deliver their fiduciary duties in monitoring the senior management. They will exacerbate the agency problems, especially in emerging markets leading to lower firm valuation.[37] Fan et al. (2007), examining the post-IPO stock return performance of Chinese firms, reported that politically nonconnected firms outperform connected firms as market participants believe that Chinese firms with political connections have the board of directors with a lower degree of professionalism.

Fourth (uncertainty in contract enforcement), politically connected firms may potentially influence the contract enforcement, leading to an unfavorable ex-ante adjustment of their contracts.[38] Keefe (2019) shows that loans to a politically connected borrower have a lower contract enforcement probabil-ity, causing an ex-ante upward adjustment of their interest rates. Bliss and Gul (2012), examining Malaysian firms, reported that lenders charge higher interest rates on the loans when advanced to polit-ically connected firms. They consider these firms are risky in terms of uncertainty in enforcing contracts. For similar reasons, politically connected firms face difficulties in nurturing or developing associations with technology providers, raw material suppliers, and customers. Luo et al. (2020) show that connected new generation firms have difficulty in making partners as other firms will be concerned about the pos-sible abuse of power to extract more than negotiated in contracts, leading to depriving politically con-nected firms of advanced technology and other capabilities available with prospective partners. Finally (ex-ante poor performance), politically connected firms are often ex-ante poor-performing ones. That is, poor-performing firms often seek political connections to obtain favorable policy support in terms of subsidies and bailout in the case of their financial distress.[39] Managers of these politically connected firms then may indulge in excessive risk-taking with the confidence that political patronage would bail-out them in the case of financial distress, leading to their lower shareholders' wealth.[40]

We note that our sample firms are not responsible for policy outcomes[41] as is the case of Chinese firms but are highly prone to incur the previously described agency costs due to political connections. These agency costs are expected to be prominent in the context of our sample firms, given the

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[32]Betrand et al. (2018).

[33]Aggarwal et al. (2012).

[34]Gul (2006); Chaney et al. (2011); Wang and Lin (2017).

[35]Hadani and Schuler (2013); Boateng et al. (2019).

[36]Cao et al. (2017).

[37]Dharwadkar et al. (2000).

[38]Tirole (2006).

[39]Shleifer and Vishny (1994).

[40]Faccio (2010); Boubakri et al. (2013).

[41]Our sample firms are not state controlled firms and their objective is shareholders' wealth maximization. The board mem-bers of these firms less likely to be concerned about the governments' social and political objectives.

underdeveloped nature of legal and institutional mechanisms in India. Hence, we present our prediction in the form of the following hypothesis.

H1b: Firms' political connections negatively influence their market value.

Moderating effect of firm- and industry-specific characteristics

Is the influence of political connections the same across all the firms? We argue that the effect of political connections may be heterogeneous across the connected firms. Though the available literature has largely ignored this heterogeneity, we posit that firm- and industry-specific characteristics, including their size, operational efficiency, financial leverage, and the degree of concentration in their industry, would differently moderate the cost and benefits of corporate political connections.

Firm size

Large firms attract nonmarket threats, mainly from social forces demanding them to share their fortune with society. Political connections help these firms to mitigate such threats. Further, the expenses of building political connections can be modest in the context of larger firms. However, these nurtured political connections may be necessary but not sufficient to enhance the connected firms' market value. The only available empirical evidence suggests that the political connections at the board level have a significant positive influence on the market value of large firms.[42] Goldman et al. (2009), examining US firms' stock market performance following their announcement of politically connected board members' nominations, report that the political connections positively influence the sample firms' market value, and this effect is more significant in the case of large firms in the sample. We argue that larger firms are better positioned, in terms of bearing the costs of political connections and accruing the benefits from thereof, to exploit the resource advantages of political connections than otherwise smaller firms. We propose to empirically test this using the following hypothesis.

H2: Firms' size positively influences the effect of political connections on their market value.

Efficiency

Firms with greater operating efficiency in utilizing their assets are arguably better positioned to exploit the resource advantages of political connections and achieve sustained competitive advantage. Political connections reduce uncertainties associated with firms' external environment by helping them in obtaining key resources and favorable government policy outcomes. Chen et al. (2011), examining non-state-owned Chinese firms, show that political connections improve their investment efficiency by enhancing their competitive position. However, the available evidence from the multicountry analysis shows that political connections negatively influence the operating efficiency of firms, particularly of those operating in countries with higher corruption.[43] Saeed et al. (2017) report that political connections distort the firms' investment expenditure, leading to their overall operational inefficiency. Jackowicz et al. (2014) note that political connections negatively influence the listed firms' operating performance in Poland. However, with value maximization as the dominant objective, we argue that sample firms with greater operating efficiency utilize political connections to maximize their competitive advantage, while the firms with below-par operating efficiency seek to protect their market position with the help of their political connections. In a way, operationally efficient firms with political connections are better placed to enhance their shareholders' wealth. We hypothesize the same as follows:

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[42]Goldman et al. (2009).
[43]Faccio (2010).

H3: Firms' operational efficiency positively influences the effect of political connections on their market value.

Financial leverage

The conventional wisdom suggests that managers of highly levered firms embark on suboptimal corporate financial and investment decisions, including overinvestment activities.[44] In the case of connected firms, such inadvertent investments could be unabated, as they are perceived to be more likely to get bailed out in the case of their financial distress, leading to their lower valuation.[45] Chahal and Ahmad (2020) report that these overinvestment activities of politically connected firms lead to greater investment inefficiency. Further, firms with higher leverage and political connections are not the preferred alliance partners for technology collaborations as they are prone to the greater uncertainty of contract enforcement.[46] In a way, the available evidence suggests that politically connected firms with higher leverage destroy the shareholders' wealth. Our empirical setting offers us an opportunity to test this argument. We hypothesize the same as follows:

H4: Financial leverage negatively influences the relationship between firms' political connections and their market value.

Industry concentration

The effect of industry concentration on the firms' choice of political connections has been documented in the extant political economy and industrial organization literature.[47] Olsonian hypothesis states that firms transacting in highly concentrated industries are inclined to have political connections than those operating in the less concentrated industries. In the industries with less concentration, firms choose not to expend on nurturing political connections as their expected private benefits from such connections would be insignificant.[48] However, firms operating in the concentrated industries or the industries of oligopolistic nature do not "free ride" in groups as the benefits of their efforts through nurturing political connections will largely accrue to the active participants. These industry-wide expected public/general benefits may range from protecting trade barriers (e.g., in the industries such as sugar, mining) to softening or lenient implementation of environmental legislation. Further, firms operating in concentrated industries are often engaged to maximize profits by grabbing sales from their competitors. The objective of the firms' political connections in these industries will also be aimed at their "private benefits" such as obtaining government contracts/licenses and advance information about the possible policy changes that their competitors might otherwise capture.

   The empirical findings of earlier studies concerning the relationship between firms' industry concentration and their choice of political connections have been mixed. Pittman (1988), Zaleski (1992), and Bhuyan (2000) report that firms in the concentrated industries often embark on having political connections as they gain more from beneficial regulations. However, Zardkoohi (1985) argues that if the industry concentration results from proprietary knowledge or exclusive possession of crucial inputs, then political connections will not have a greater role in enhancing firms' value. Further, he notes that firms in the less concentrated industries, in the absence of competitive advantage, have a motivation to seek political connections. However, apparently there is no direct empirical evidence to validate whether firms operating in the concentrated industries benefit from the political connections, potentially in terms of their market valuation. Our empirical setting provides us an opportunity to test the preceding argument. We hypothesize the same as follows:

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[44]Mello and Parsons (1992).
[45]Faccio et al. (2006).
[46]Bliss and Gul (2012); Keefe (2019).
[47]Olson (1965); Bhuyan (2000); Hart (2003); Hensen et al. (2005).
[48]Bhuyan (2000); Hensen et al. (2005).

H5: Firms operating in more concentrated industries benefit more from the political connections than their counterparts in less concentrated industries.

Firms' political connections and their leverage

The available empirical evidence indicates that politically connected firms often use greater debt capital than nonconnected firms.[49] Lenders prefer to extend the credit to politically connected firms despite their poor operating performance as they are more likely to get rescued in the instance of their distressing financial position.[50] Further, politically connected firms can use their political network in securing preferential access to debt financing,[51] especially from government-controlled institutional lenders.[52] In India, public debt market is not yet well-developed, and firms predominantly depend on the institutional lenders for their debt financing. India's value of corporate bonds to GDP ratio has been a mere 17.16%, whereas the same statistic for the United States, Brazil, and Malaysia are 123.47%, 99.05%, and 44.5%, respectively.[53] Because Indian firms predominantly depend on banks (of which public-sector banks, where the government is the major shareholder, account for 59.8% of the total value of loans[54] as of November 2020) for their debt financing, we expect that firms' political connections help them in securing favorable treatment from these lending institutions, leading to the higher leverage in the case of politically connected firms.

However, lenders may charge higher interest rates or shun politically connected firms, given their inherent internal agency problems, associated uncertainty with their contract enforcement, and well-documented opaqueness or prevalence of their accounting misstatements. Lenders understand that politically connected firms may (not deploy the borrowed funds productively) divert the portion of the borrowed funds for unproductive purposes, which decrease the returns/cash flows available to repay the loans.[55] As mentioned earlier, lenders also see uncertainty in ex-post contractual enforcement with politically connected firms, and ex-ante charge higher interest rates while lending to politically connected firms.[56] Further, politically connected firms in emerging markets, with their opaque financial disclosures, are less likely to choose inexpensive global financing as it attracts greater public scrutiny with the attention of foreign analysts and international financial press.[57] With the preceding understanding, we propose to empirically test the following hypotheses in the context of Indian firms.

H6a: Firms' political connections positively influence their financial leverage.

H6b: Firms' political connections negatively influence their financial leverage.

Method

We test the preceding developed hypotheses using the firm-level data of listed firms in India.

Sample and data

We consider the study period from 2006 to 2019. We choose 2006 as the beginning year for our study as capital markets regulator, Securities Exchange Board of India (SEBI) implemented revised Clause 49

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[49]Johnson and Mitton (2003); Fraser et al. (2006); Faccio (2010).
[50]Faccio et al. (2006).
[51]Dinc (2005).
[52]La Porta et al. (2002); Khwaja and Mian (2005).
[53]Reserve Bank of India Bulletin, January 2019: https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/2ICBMIMM141 CFFF458BB4B3A9F4C006F4AE4897F.PDF (accessed 5 December 2020).
[54]Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, Reserve Bank of India, released on 25 November 2020.
[55]Keefe (2019).
[56]Bliss and Gul (2012).
[57]Leuz and Oberholzer-Gee (2006).

of the listing agreement to the Indian stock exchange, effective 31 December 2005. It has then become mandatory for the Indian firms to implement the robust corporate governance guidelines along with their disclosures from 2006. We obtained sample firms' financial and market price information from PROWESS-DX, a database created and maintained by the Center for Monitoring Indian Economy (CMIE). The PROWESS-DX provides the information on financial performance of Indian firms obtained from their annual reports and various disclosures (including statutory disclosures). The PROWESS database was earlier utilized by many studies for examining the Indian firms' performance[58] and leverage choices.[59] We accessed information about sample firms' board of directors from the Indian Boards database maintained by Prime Database Group. The Indian Boards database includes the information on the board of directors of all the companies listed on the National Stock Exchange (NSE).[60] Using the board of directors' profiles from the database, we hand collected the relevant information, including their professional details. Because the board of directors' profiles are accessible only for the NSE-listed firms, we confine our empirical investigations to the NSE-listed firms.

We exclude all government-controlled firms from the analysis as their board of directors' selection process and their operating decisions are often not driven by objective economic and market criteria. We also exclude all financial services firms as they follow varied disclosure requirements. Further, we eliminate firm-year observations with negative book value of equity and those with negative net sales to exclude the firms with financial distress and those with no or negligible operating activities.[61] Our final sample is an unbalanced one with 13,753 firm-year observations, consisting 1,649 unique firms with an average of 8.34 firm-year observations each. We note that the percentage of firms with political connections in each year of the study period[62] averages approximately 25%. Table 1 provides an industry-wide distribution of firm-year observations, including those with political connections across the industries. We identify the sample firms with their three-digit National Industrial Classification (NIC) code[63] and further regroup them into thirty broad industries. In classifying sample firms into industry groups, we follow Fama and French (1997) industry classification[64] in spirit, though we made minor changes to their basic criteria to adapt to the differences between NIC and SIC (Standard Industrial Classification) codes.

From table 1, we observe that a greater percentage of sample firms operating in the industry of electricity and gas (i.e., 59.7%) are politically connected, followed by firms operating in the industries such as transportation and warehousing (47.9%) and mining (41.8%). These findings are consistent with those of Agrawal and Knoeber (2001), who reported the highest share of politically connected companies in the industries where political connections matter more. In the case of utility industries such as electricity and gas, where government is the predominant customer and also plays a role of supplier or

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[58]Khanna and Palepu (2000); Gopalan et al. (2007); Aggarwal et al. (2019).

[59]Guha-Khasnobis and Bhaduri (2002); Manos et al. (2007).

[60]NSE India Limited is the India's largest stock exchange in terms of market capitalization.

[61]Bhagat et al. (2005).

[62]Refer to appendix B.

[63]We make use of the industry classification details provided by the CMIE. The CMIE classifies firms into various industries using the National Industrial Classification (NIC) codes, prepared and released (in 2008) by the Ministry of Statistics and Programme Implementation, Government of India. This classification was developed in line with the International Standard Industrial Classification (ISIC) and was utilized by the several earlier studies that examined the Indian firms (including Khanna and Palepu [2000]; Gopalan et al. [2007]). Both NIC and SIC are similar as they are the systems of classifying the industries based on their major economic activity. They are subdivided at a more granual level into different industry groups. The SIC uses the four-digit code to classify firms into industry groups with similar business activities, whereas NIC uses five-digit code to group the firms into different industries.

[64]It is available at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library/det_48_ind_port_old.html (accessed 14 October 2020).

Table 1: Sample distribution across industries

Sl. No.	Industry	Total no. of observations	Firms with political connection	
			Number of observations	Percent
1	Agriculture	139	16	11.5%
2	Mining	91	38	41.8%
3	Food and food products	506	146	28.9%
4	Beverages and smoke	160	51	31.9%
5	Textiles, fabrics, and apparel	1,223	165	13.5%
6	Wood, furniture, and paper products	277	77	27.8%
7	Books and publishing	142	38	26.8%
8	Petroleum and chemicals	1,207	415	34.4%
9	Pharmaceuticals and medical equipment	785	127	16.2%
10	Rubber and plastics	489	110	22.5%
11	Nonmetallic	542	149	27.5%
12	Basic metals	843	272	32.3%
13	Computers and electronics	180	22	12.2%
14	Electrical products	590	111	18.8%
15	Machinery	508	101	19.9%
16	Motor vehicles and transport equipment	760	242	31.8%
17	Jewellery	141	27	19.1%
18	Electricity and gas	134	80	59.7%
19	Construction of buildings and civil engineering	1,228	385	31.4%
20	Trading: wholesale and retail	1,086	220	20.3%
21	Transportation and warehousing	257	123	47.9%
22	Hotel and accommodation	217	88	40.6%
23	Entertainment	356	120	33.7%
24	Telecommunications	148	41	27.7%
25	Computer and I&T services	855	142	16.6%
26	Management, technical, and other professional activities	197	36	18.3%
27	Rental and leasing services	123	21	17.1%
28	Education	82	6	7.3%
29	Healthcare	103	36	35.0%
30	Diversified	384	89	23.2%

Note: Table presents the distribution of all sample firm-year observations along with those politically connected across the industries. We identify the sample firms with their three-digit NIC code and further regroup them into thirty broad industries using Fama and French (1997) industry classification.

facilitator of crucial raw materials (such as coal) in these industries. The working knowledge with government regulations and licensing are crucial for the firms to successfully navigate in the industries such as transportation and mining. We also note that firms operating in the industries such as education (7.3%), agriculture (11.5%), and computers and electronics (12.2%) are less likely to have political connections given the limited importance of regulatory process in these industries.

Variables

Dependent variables

In the present study, we examine the effect of firms' political connections on their market value and financial leverage. Following earlier literature,[65] we consider Tobin's Q[66] as the measure of market value of assets. It is a ratio of the market values of debt and equity to the replacement cost of assets. However, calculating Tobin's Q is difficult in the context of Indian firms, as in the case of many developing economies, due to the nonavailability of information on market value of debt and replacement cost of assets. Indian firms predominantly depend on the institutional sources for their debt financing, which is not traded in the financial markets. Additionally, these firms often report the assets value at their historical costs. Hence, following the previous studies,[67] we calculate Tobin's Q by considering book values of debt and assets in the place of their respective market values. We measure financial leverage as the ratio of borrowings to total assets.[68]

Independent variables

Our main independent variable of interest is firms' political connections. Because political decision making and implementation are decentralized in India, we consider firms' political connections in terms of their access to the policy-making power corridors both at the level of central and state governments.[69] Accordingly, we identify a firm as politically connected in a year if at least one of its board of directors is connected to the policy making/execution at the level of either central or state governments. A board member is considered as connected to policy making (execution) if he/she currently holds or held in the past a position such as a policy maker[70] (bureaucrat[71]). Directors who have experience in dealing with policy making/implementation can help in the political/bureaucratic dealings of sample firms by utilizing their skills and experience to predict/influence government actions. As identified by Agrawal and Knoeber (2001), politicians/bureaucrats accrue such skills or experience from their past experience of participating in government policy making and execution. Our definition of "politically connected firm" is similar to a number of earlier studies that examined the effect of political connections on various outcomes of sample firms' activities in different institutional settings.[72]

We construct the political connection variable in two ways. First, as defined earlier, we consider a firm is politically connected if at least one of its board of directors has the experience of either policy making or execution at the level of either central or state governments. It is a dummy variable that identifies the politically connected firms. Second, a continuous variable measuring the number of board of directors with political connections. Further, to assess the influence of firm- and industry-specific factors on the relationship between firms' political connections and their financial outcomes, we consider factors such as firms' size, leverage, operational efficiency, and degree of their industry concentration. We measure firms' size as the natural logarithm of the value of their total assets, expressed at the constant prices of 2011. Firms' operational efficiency relates to the optimum

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[65]Morck et al. (1988); Dowell et al. (2000); Villalonga and Amit (2006).

[66]Scholars also use it as a market-based measure of firm performance (e.g., Bharadwaj et al. [1999]).

[67]Chen et al. (2009); Wu et al. (2010); Deng et al. (2018).

[68]Rajan and Zingales (1995); Frank and Goyal (2009).

[69]Fisman (2001).

[70]A board member is considered as policy maker if he or she currently holds or held in the past one of the following positions: member of parliament (either in lower house or in upper house), member of state legislature (either in lower house or in upper house, where available), minister (either at state-level or central-level), or member of house (either at state-level or at central-level) committee.

[71]A board member is considered as being held a position of policy implementor if he or she in the past belonged to the cadre of All India Administrative/Revenue/Economic/Foreign Services, Gazetted officer and held one of the following positions: chief secretary, secretary, deputy secretary, associate secretary, additional secretary in any of the ministries of state or central government. We note that bureaucrats in India are not permitted to take up the commercial assignments during their service. However, they may take up the postretirement employment at private-sector companies after obtaining the required approvals from the relevant authorities.

[72]Agrawal and Knoeber (2001); Faccio (2006); Goldman et al. (2009); Betrand et al. (2018).

utilization of their resources. We measure the operational efficiency using asset turnover ratio, which reflects the efficiency with which a firm uses its assets to produce sales.[73] Following the earlier literature,[74] we employ a four-firm industry concentration ratio to measure the sample firms' degree of industry concentration.

Control variables

We include several variables that may affect our dependent variables as control variables[75] in the multivariate analysis. These control variables include firms' sales growth, capital expenditure scaled by total assets, age, business group affiliation, and firm-specific risk that might influence their market value. We consider firms' sales growth and capital expenditure scaled by total assets to account for their expected growth opportunities and investment activities respectively. Age, computed as the difference between current year and the year of incorporation, accounts for the firms' life-cycle effects on their performance and financing choices. Business group affiliation is a binary variable that identifies firms affiliated to business groups.[76] Business group affiliated firms share important financial linkages that potentially affect their financial position and valuation.[77] Similar to the earlier studies, we use CMIE's definition in identifying business group affiliated sample firms. In our sample, 54.5% of firms are affiliated to business groups. We measure the firm-specific risk as the standard deviation of the residuals of the market model, where by the corresponding firm's stock daily returns over a period of one year are regressed against a market value weighted index[78] returns. Such a measure is expected to account for the firm-level risk associated with its operations and financing choices.[79]

Further, following the earlier literature,[80] we also consider variables such as profitability, tangibility, and nondebt tax shields (NDTS) that may affect the sample firms' financial leverage. Profitability is measured as return on assets (ROA), which is the ratio of firm's operating income to total assets. Firms' profitability can have both positive and negative effects on their leverage. Higher profitability, on the one hand, improves firms' debt servicing capacity (positive influence) and, on the other hand, provides greater internally generated cash flows (negative influence) to finance their investment activities. We measure tangibility of firms' assets as a ratio of the value of fixed assets to total assets. As tangible assets serve as collateral, firms with greater tangible assets are positioned to have higher leverage. NDTS, measured as a ratio of depreciation and amortization expenses to total assets, expected to have negative influence on firms' financial leverage as potential tax benefits of debt financing are offset by the available nondebt tax shields.

Estimation methods

Effect of political connections on firm value

Firms' decision to have political connections is their endogenous choice and needs to be empirically accounted while assessing the influence of firms' political connections on their financial outcomes, such as firm value. Barring a few,[81] most of the prior studies[82] often ignored the same and considered

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[73]Fairfield and Yohn (2001).

[74]Zaleski (1992); Bhuyan (2000); Hansen et al. (2005).

[75]Fisman (2001); Chen et al. (2017).

[76]"Business group" constitutes a set of separate legal entities operating in various industries, controlled by a common group of insiders, mostly family members of a single family (Khanna and Yafeh [2007]).

[77]Ibid.

[78]We consider Nifty 100 index as a proxy of market index. It represents all the major sectors of the economy. The combined market capitalization of its constituents accounts for approximately 76.8% of the market capitalization of all the stocks listed on NSE. The details of this index are available at https://www1.nseindia.com/products/content/equities/indices/nifty_100.htm (accessed on 19 December 2020).

[79]Anderson and Reeb (2003); Villalonga and Amit (2006).

[80]Rajan and Zingales (1995); Frank and Goyal (2009).

[81]Chen et al. (2011); Croci et al. (2017).

[82]E.g., Faccio (2006); Fan et al. (2007); Goldman et al. (2009).

that firm's choice to have political connections as exogenous, leading to the violation of random assignment assumption, causing serious self-selection problem. We make use of Heckman two-step treatment effects procedure[83] to address the self-selection problem. Accordingly, we use the following empirical models to examine the influence of firms' political connections on their market value.

$$PolConn_{it} = f(X_{it}, \quad \delta_t, \quad \alpha_d) \tag{a}$$

$$FirmValue_{it} = g(PolConn_{it}, X_{it}, \quad \delta_t, \quad \alpha_d) \tag{b}$$

In the preceding models, $PolConn_{it}$ is a binary variable taking one if firm i is politically connected in year t and zero otherwise. $FirmValue_{it}$ is the market value measure of firm. X_{it} is the vector of control variables including size, financial leverage, sales growth, asset turnover ratio, capital expenditure, industry four-firm concentration ratio, age, business group affiliation, and firm-specific risk. These models also include time (δ_t) and industry (α_d) dummies to account for the time and industry fixed effects. The functional forms of the preceding models can be specified as follows.

$$d_{it} = X_{it}\gamma + \delta_t + \alpha_d + v_{it} \tag{1}$$

In the preceding equation, d_{it} refers to the firm's decision to have political connection.

$$y_{it} = d_{it}\gamma + X_{it}\beta + \delta_t + \alpha_d + e_{it} \tag{2}$$

where y_{it} is the financial outcome variable, firm value, of firm i in period t. To account for the self-selection bias arising from the firms' endogenous choice of having political connections, we estimate selection equation (i.e., equation – 1) using the Probit regression estimator. It allows us to compute inverse Mills ratio (λ).[84] We use it as one of independent variables in the outcome equation (i.e., equation 2). Thus, the extended outcome equation as per the Heckman two-step method is specified as follows.

$$y_{it} = d_{it}\gamma + X_{it}\beta + \lambda_{it}\rho + \delta_t + \alpha_d + \varepsilon_{it} \tag{3}$$

This estimation procedure assumes that the error terms of equations 1 and 2 follow a standard bivariate normal distribution and accounts for the potential correlation between them. Further, such a selection model requires valid "exclusion restriction." That is, a variable(s) that determines a firm's decision to have political connection but does not affect the outcome variable, firm value. We considered variables such as firms' internationalization,[85] economic policy sensitivity,[86] institutional ownership,[87] and industry political connectedness[88] as the possible exclusion restrictions. But, we find that firms' economic policy sensitivity, internationalization, and institutional ownership are not the valid exclusion restrictions in our dataset. Hence, because we use industry political connectedness as the exclusion restriction, firms transacting in the industries that are highly regulated are more likely to have a political connection. However, firms' market value is more influenced by other firm-specific variables than their industries' political connectedness. The findings of exclusion restriction test[89] indicate the validity and relevance of industry political connectedness as the exclusion restriction in our analysis as it is correlated with firms' political connections and uncorrelated with firms' market value.

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[83]Heckman (1979).

[84]Greene (2003) provides the detailed explanation on inverse Mills ratio.

[85]We measure the internatioanlization as the ratio of export income to total income (Wang et al. [2019]).

[86]Following Akey and Lewellen (2017), economic policy sensitivity of the sample firms is measured by considering the economic policy uncertainty index, prepared by Baker et al. (2016).

[87]Institutional ownership is measured as the percentage of equity ownership by the nonpromoter institutions (Fraser et al. [2006]).

[88]Croci et al. (2017).

[89]Quality test: $\chi^2(1)=165.86$; p-value is 0.000.

Further, unobserved firm-specific heterogeneity may affect the findings as firms' political connections may be correlated with the unobserved firm characteristics. Heckman's two-step procedure, described previously, does not control this potential endogeneity problem. Semykina and Wooldridge (2010) showed that, in the presence of unobserved firm-specific effects, mere inclusion of the Mills ratio in equation 2 will not provide the consistent estimates. They offered a correction for selection bias that accounts for potential endogeneity. The proposed correction suggests an addition of time average of all the exogenous explanatory variables in the equations 1 and 2. Because this procedure corrects for selection bias and potential endogeneity along with the accounting for firm-specific unobserved heterogeneity, researchers[90] exploring the similar issues in the extant literature have preferred the results obtained using Semykina and Wooldridge (2010) approach. We also focus on the estimates obtained using Semykina and Wooldridge (2010) method in examining the influence of political connections on the sample firms' market value.

Effect of political connections on leverage

We investigate the effect of firms' political connections on their leverage using the following functional form.

$$Lev_{it} = Lev_{it-1}\partial + d_{it}\gamma + X_{it}\beta + \delta_t + \alpha_d + \vartheta_{it} \tag{4}$$

where Lev_{it} is the leverage of ith firm in year t. The X_{it} in the preceding equation is the vector of control variables, including return on assets, sales growth, nondebt tax shields, tangibility, size, age, business group affiliation, industry concentration (four-firm concentration ratio), firm-specific risk, and industry median leverage, that affect firms' leverage choice. We estimate the preceding dynamic equation using system generalized methods of moments (system GMM) estimator suggested by Blundell and Bond (1998). The GMM estimator corrects the endogeneity of the input variables using internally generated instruments. Further, system GMM estimator addresses the "finite sample bias"[91] inherent in the estimation of dynamic panel data model (i.e., equation 4). The system GMM estimator is a system of two equations at levels as well as at differences. We consider lagged values of all the independent variables up to three years as instruments in the case of both level and difference equations. We test the null hypothesis of zero serial correlation in first differenced residuals (AR1 and AR2) and report their p-values. Further, we investigate the validity of instruments using Hansen test of overidentification and difference-in-Hansen test of exogeneity. We report p-values of these two tests with the null hypotheses that the instruments are both valid and exogenous respectively.

Results and discussion
Univariate analysis

Table 2 reports the summary statistics along with pairwise correlation coefficients of the variables included in the empirical analysis. We winsorize the ratio variables at 1 and 99 percentiles to do away with the effect of outliers. In our sample, 25.4% of the total firm-year observations have political connections. The reported statistics indicate that political connections are positively correlated with firms' size, age, market value, operating profit, and industry concentration. It is negatively correlated with firms' leverage. Sample firms' leverage reports to have positive correlation with size, tangibility, capital expenditure, and nondebt tax shields. It has negative correlation with sample firms' performance (Tobin's Q and ROA), efficiency (asset turnover ratio), and sales growth. However, variance inflation factors suggest that there is no multicollinearity problem[92] in our dataset.

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[90]Sanarelli and Tran (2016); Komera et al. (2018); Laborda et al. (2020).

[91]Nickell (1981).

[92]The mean of variance inflation factors of variables included in the analysis is 1.35, which is much lower than the threshold point of 10.

Table 2: Descriptive statistics and pairwise correlation matrix

Variable	Mean	SD	Size	Age	Q	ROA	Lev	Sales growth	ATO	CAPEX/ TA	C4	TANG	NDTS	Firm-specific risk	BG
Size	8.852	1.520	1.000												
Age	3.264	0.671	0.197***	1.000											
Q	1.660	1.383	0.154***	0.047***	1.000										
ROA	0.093	0.083	0.106***	0.075***	0.489***	1.000									
Lev	0.285	0.185	0.124***	−0.044***	−0.310***	−0.287***	1.000								
Sales growth	0.130	0.349	0.027**	−0.065***	0.092***	0.226***	−0.025***	1.000							
ATO	0.835	0.566	−0.155***	0.046***	0.189***	0.368***	−0.093***	0.131***	1.000						
CAPEX/TA	0.059	0.092	0.055***	−0.045***	0.009	0.080***	0.133***	0.165***	0.055***	1.000					
C4	0.545	0.202	0.014***	−0.100***	0.073***	0.047***	−0.142***	−0.001	−0.092***	0.016*	1.000				
TANG	0.463	0.301	−0.123***	0.091***	−0.126***	−0.058***	0.227***	−0.047***	0.109***	0.382***	−0.030***	1.000			
NDTS	0.027	0.019	−0.106***	−0.026***	0.030***	0.029***	0.116***	−0.020**	0.174***	0.338***	0.035***	0.698***	1.000		
Firm-specific risk	0.001	0.006	−0.063***	−0.021**	−0.051***	−0.046***	0.005	−0.015*	−0.019**	−0.004	−0.018**	−0.002	−0.006	1.000	
BG	0.545	0.498	0.349***	0.219***	0.038***	0.033***	0.000	−0.009	−0.014	−0.008	0.007	0.112***	0.029***	−0.043***	1.000
PolConn	0.254	0.435	0.259***	0.048***	0.045***	0.026***	−0.021**	−0.004	−0.061***	0.019**	0.072***	0.035***	−0.013	−0.029***	0.157***
No. of observations: 13,753															

Note: Table provides the descriptive statistics and pairwise correlation of the variables included in the analysis for all the firm-year observations. The definitions of these variables are provided in appendix A. To control for the outliers, we winsorize all the ratio variables at 1 and 99 percentiles. The correlation coefficient estimates among the included variables have been tested for their statistical significance and reported accordingly. ***, **, and * refer to 1%, 5%, and 10% significant levels, respectively.

Table 3: Comparison of politically connected and nonpolitically connected sample firms

Variable	Average			Median		
	Connected	Non connected	P-value of t-test	Connected	Non connected	P-value of Rank sum test
Total assets	62,438	17,936	0.000	11,368	5,264	0.000
Age	34	32	0.000	28	26	0.000
Size	9.527	8.622	0.000	9.339	8.569	0.000
Q	1.766	1.623	0.000	1.191	1.124	0.000
ROA	0.097	0.092	0.002	0.089	0.086	0.002
Lev	0.279	0.288	0.020	0.269	0.281	0.023
Sales growth	0.127	0.130	0.664	0.098	0.104	0.448
ATO	0.776	0.855	0.000	0.674	0.774	0.000
CAPEX/TA	0.062	0.058	0.024	0.048	0.044	0.005
C4	0.570	0.537	0.000	0.545	0.479	0.000
TANG	0.481	0.457	0.000	0.450	0.417	0.000
NDTS	0.027	0.027	0.121	0.023	0.024	0.251
Firm specific risk	0.001	0.001	0.001	0.001	0.001	0.000
BG	0.678	0.499	0.000	1.000	0.000	0.000
No. of observations:	3,494	10,259				

Note: Table presents comparative statistics of sample firms partitioned based on their political connections. The definitions of above variables are provided in appendix A. To control for the outliers, we winsorize all the ratio variables at 1 and 99 percentiles. The values of total assets are expressed in real terms (at the constant prices of 2011) of INR millions. The mean differences are tested using the t-test for their statistical significance. The median differences are tested for their significance using Wilcoxon rank sum test. Accordingly, the p-values of t-test and rank sum test with the null hypothesis that there is no difference between politically connected and nonconnected firms are reported.

Difference between politically connected and nonconnected firms

Table 3 presents univariate comparative statistics of the variables for the samples split based on their political connections. Politically connected firms, both in terms of their mean and median values, are larger[93] and more matured than nonconnected firms.[94] They spend more on capital expenditure, and report greater market valuation and better operating income (measured using the return on assets; ROA) than nonconnected firms. The reported findings suggest that firms operating in highly concentrated industries are more likely to have political connections. Contrary to the evidence reported by the earlier studies,[95] our politically connected sample firms report on an average lower leverage ratio than nonconnected firms, though the median difference in their leverage is not statistically significant at the acceptable levels. Further, we note that politically connected and nonconnected sample firms have similar historical sales growth rates.

Multivariate/regression analysis

This section presents findings of our regression analysis, examining the effect of corporate political connections on the sample firms' financial outcomes, namely market value and financial leverage. Further, we assess the moderating effect of firm- and industry-specific characteristics on the

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[93]The value of total assets are expressed at the constant prices of 2011 in terms of INR millions. The average INR per US dollar in 2019 was 70.4203: https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20541 (accessed 18 September 2021).

[94]Agrawal and Knoeber (2001); Faccio (2006); and Goldman et al. (2009).

[95]Faccio et al. (2006).

relationship between corporate political connections and firms' market value. As described in the "Estimation Methods" section, we use Heckman's two-step procedure to control the possible self-selection problem. As per the Heckman procedure, first, we investigate the firm's choice of having political connections (equation 1) using the Probit regression estimator.[96] We then estimate inverse mills ratio and include the same in equation 3 to account for the self-selection problem. In the second stage, we estimate equation 3 using pooled ordinary least squares estimator. Further, to account for the potential endogeneity as well as self-selection problems, we implement the Semykina and Wooldridge (2010) procedure. We report the findings of Heckman's second-stage estimation and Semykina and Wooldridge's (2010) estimation approach in table 4.

The reported findings in table 4 suggest that after controlling for all the potential determinants, political connections negatively influence the sample firms' market value. The selection and endogeneity corrected findings imply that, after controlling for all the relevant factors, politically connected sample firms on an average report 3.13% lower market value than nonconnected firms. The other determinants of firms' market value take the expected signs. In accordance with the results of Chen et al. (2009) and Wu et al. (2010), firm size has a negative influence on the firms' market value. As expected, firms' operating efficiency, industry concentration and growth opportunities (measured using sales growth) have a significant positive influence on the market value of firms, whereas leverage, age, and risk influence the sample firms' market value negatively. The reported negative influence of political connections on the sample firms' market value supports our hypothesis: H1b. The evidence suggests that financial market participants believe that, on average, the costs of firms' political connections outweigh the benefits from those connections. As discussed, these costs could be a combination of rent-seeking activities of politically connected board members,[97] higher information asymmetry associated with politically connected firms,[98] the opaqueness of their earnings numbers,[99] lack of business acumen or professionalism in the case of connected board members,[100] and contract enforcement uncertainty associated with the politically connected firms.[101] Accordingly, market participants report to value, on average, politically connected firms lower than the nonconnected firms.

Further, we argue that the influence of political connections is heterogeneous across the connected firms. We estimate the moderating effect of firm- and industry-specific factors such as their size, operational efficiency, financial leverage, and degree of industry concentration on the relationship between firms' political connections and their market performance. Table 5 reports the findings of an empirical investigation into the interaction effect of firms' specific factors on the relationship between sample firms' political connections and their market value. The reported findings suggest that political connections continue to have negative influence on the sample firms' market value. The significantly positive coefficient of interaction term (refer to model 5) between firm size and political connections supports our hypothesis (H2) that larger firms utilize the benefits of political connections better than the corresponding smaller sample firms. That is, an unit increase in the size of the sample firms reduces the negative effect of political connection on their market value on an average by 6.74%. Such a finding is attributable to the resource advantage of larger firms and their requirement of protection from the nonmarket forces through political connections. The reported finding is also in accordance with Goldman et al. (2009) who reported that the influence of political connections is more evident in the case of larger firms. The results in table 5 suggest that operational efficiency, measured in the form of asset turnover ratio,[102] have significant positive influence on the relationship between the firms' political connections and their market value. It implies, as hypothesized in H3, that firms with greater operating efficiency are per-

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[96]The findings of Probit regression estimator are reported in appendix C.
[97]Bertrand et al. (2018).
[98]Aggarwal et al. (2012).
[99]Gul (2006).
[100]Cao et al. (2017); Boateng et al. (2019).
[101]Keefe (2019); Luo et al. (2020).
[102]Fairfield and Yohn (2001).

Table 4: The influence of political connections on firms' market value.

Variables	Heckman's second stage	Endogeneity and selection corrected
Dependent variable: Tobin's Q		
PolConn	−0.044*	−0.052**
	(0.024)	(0.024)
Size	−0.173***	−0.207***
	(0.023)	(0.049)
Lev	−1.525***	−0.639***
	(0.065)	(0.124)
ATO	0.455***	0.463***
	(0.024)	(0.051)
C4	0.459*	0.518*
	(0.253)	(0.269)
Sales growth	0.199***	0.100***
	(0.029)	(0.031)
Capex/Ta	0.512***	-0.005
	(0.117)	(0.122)
Age	−0.050***	−0.035*
	(0.019)	(0.019)
BG	−0.503***	−0.456***
	(0.032)	(0.032)
Firm-specific risk	−7.253***	−3.520***
	(1.977)	(1.259)
Mills ratio	−0.669***	−0.604***
	(0.035)	(0.034)
Constant	6.243***	6.754***
	(0.382)	(0.524)
Mills × Time ($\chi^2(13)$)		66.26***
P-value of Mills × Time ($\chi^2(13)$)		(0.000)
Time	Yes	No
Industry	Yes	Yes
R-squared	0.301	0.311
Observations	11,375	11,375

Note: Table presents the findings of estimating equation 3. It includes (1) second step of Heckman two-step estimation method (i.e., outcome equation corrected for self-selection by including inverse Mills ratio) and (2) endogeneity and selection corrected (i.e., second step of Semykina and Wooldridge [2010] approach). *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors. Appendix A provides the definitions of all the variables.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

ceived by market participants to be in an advantageous position to make use of the positive external environment facilitated by the political connections. The reported results suggest that the negative effect of political connections reduces on an average by 15.7% for an unit increase in the operational efficiency. Accordingly, financial markets value operationally better efficient politically connected firms greater than the respective less efficient firms.

Table 5: Influence of firm- and industry-specific factors on the relationship between corporate political connections and market value of firms

Variables	1	2	3	4	5	6	7	8	9	10
Dependent variable: Tobin's Q										
PolConn	−0.719***	0.081	−0.194***	−0.462***	−1.394***	−0.525***	0.114***	−0.087***	−0.288***	−0.910***
	(0.143)	(0.055)	(0.041)	(0.068)	(0.193)	(0.088)	(0.039)	(0.023)	(0.048)	(0.120)
Size × PolConn	0.072***				0.094***	0.054***				0.070***
	(0.015)				(0.017)	(0.009)				(0.010)
Lev × PolConn		−0.472***			−0.362***		−0.394***			−0.347***
		(0.139)			(0.140)		(0.097)			(0.091)
ATO × PolConn			0.177***		0.219***			0.114***		0.110***
			(0.053)		(0.054)			(0.035)		(0.035)
C4 × PolConn				0.743***	0.702***				0.495***	0.418***
				(0.126)	(0.126)				(0.086)	(0.082)
Size	−0.235***	−0.205***	−0.202***	−0.200***	−0.231***	−0.237***	−0.201***	−0.198***	−0.203***	−0.234***
	(0.050)	(0.049)	(0.049)	(0.049)	(0.050)	(0.050)	(0.050)	(0.050)	(0.049)	(0.050)
Lev	−0.642***	−0.513***	−0.631***	−0.649***	−0.546***	−0.643***	−0.496***	−0.629***	−0.650***	−0.517***
	(0.123)	(0.130)	(0.123)	(0.124)	(0.130)	(0.124)	(0.129)	(0.124)	(0.124)	(0.128)
ATO	0.467***	0.465***	0.421***	0.467***	0.422***	0.468***	0.464***	0.425***	0.464***	0.435***
	(0.051)	(0.051)	(0.052)	(0.051)	(0.052)	(0.051)	(0.051)	(0.052)	(0.051)	(0.051)
C4	0.541**	0.521*	0.521*	0.290	0.338	0.536**	0.523*	0.500*	0.285	0.336
	(0.268)	(0.269)	(0.269)	(0.272)	(0.271)	(0.268)	(0.269)	(0.269)	(0.271)	(0.270)
Mills ratio	−0.618***	−0.605***	−0.603***	−0.599***	−0.616***	−0.616***	−0.596***	−0.595***	−0.595***	−0.613***
	(0.035)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.034)	(0.034)	(0.034)	(0.035)
Controls and constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mills × Time ($\chi^2(13)$)	66.47***	67.04***	66.52***	66.55***	67.73***	66.44***	66.95***	66.48***	66.66***	68.03***
P-values of Mills × Time ($\chi^2(13)$)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.313	0.312	0.313	0.314	0.318	0.313	0.313	0.312	0.314	0.319
Observations	11,375	11,375	11,375	11,375	11,375	11,375	11,375	11,375	11,375	11,375

Note: Table presents the findings of second step of Semykina and Wooldridge (2010) estimation method. Models 1–5 consider political connection variable as a binary one identifying the politically connected firm-year observations. Models 6–10 consider political connection variable as continuous variable measuring the number of politically connected board of directors. *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors. Appendix A provides the definitions of all the variables.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

We empirically estimate the moderating effect of leverage on the relationship between firms' political connections and their market value. In consistent with our hypothesis (H4), the coefficient of the interaction term between political connections and leverage is negative and statistically significant. That is, an one unit increase in the leverage amplifies the negative effect of political connections on the market value by 25.9%. This evidence supports the argument that politically connected firms with higher leverage are more likely to engage in the suboptimal investment decisions, leading to their lower valuations in the market. Further, we investigate whether the political connections have differential impacts on the market value of firms operating in the industries with varied degree of concentration. The reported results, supporting our hypothesis (H5), suggest that political connections positively influence the value of firms operating in the more concentrated industries. If the industry concentration, measured by four-firm concentration ratio goes up by one unit, it reduces the negative effect of political connections on the market value by on an average 50.3%. This implies that financial markets in India believe that firms operating in more concentrated industries derive greater benefits from political connections than those operating in the less concentrated industries. This finding complements the earlier studies such as Pittman (1988), Zaleski (1992), and Bhuyan (2000). They report that firms operating in the concentrated industries are more inclined to embark on political connections as they gain more from beneficial regulations.

Political connections as a continuous variable

We reexamine the effect of firms' political connections on their market value by considering the number of board of directors with political connections as the variable of interest instead of a dichotomous variable that identifies the politically connected firms. Models 6–10 in table 5 present the findings of equation 3 estimated using both the Heckman two-step procedure and endogeneity corrected Semykina and Wooldridge procedure. The reported findings are in line with the findings reported in Models 1–5 of table 5 considering political connections as a binary variable.

Case of regulated industries

Government is the major source of uncertainty for the firms operating in heavily regulated industries.[103] Through political connections, firms operating in these industries aim to obtain favorable policy formulations and implementation. Accordingly, firms operating in these industries are more presumably appoint current or former politicians/bureaucrats to their board of directors than firms operating in the less-regulated industries. Hillman (2005), examining a sample of US firms, reported that firms with political connections have better market performance, and this positive association is more prominent among firms operating in heavily regulated industries. Hadani and Schuler (2013), however, report that firms with politically connected board members are negatively associated with market-based performance measures. However, they find that board-level political connections have a positive influence on the value of firms operating in heavily regulated industries. Our preliminary summary statistics presented in table 1 suggest that firms operating in heavily regulated industries (e.g., electricity and gas, transportation, mining, healthcare) are more likely to have political connections. But, are these firms (those operating in heavily regulated industries) truly achieving their financial objectives by having politically connected members on their board? We examine this empirical question in the backdrop of our sample firms. Further, we assess if there is any heterogeneity based on firm characteristics in the impact of political connections on the market value of firms' operating in industries with varying degrees of regulation.

We consider an industry as regulated if the firms operating in that industry face a significant influence from government policy instruments. Following Pittman (1977), we consider three aspects of government's influence on the industry. They are government regulation of industry,

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[103]Hillman (2005); Hadani and Schuler (2013).

Table 6: Subsample analysis: The effect of political connections on firms' market performance among regulated and unregulated industries.

Variables	PolConn as binary variable		PolConn as number	
	Regulated	Unregulated	Regulated	Unregulated
Dependent variable: Tobin's Q				
PolConn/PolConn_Number	–1.280***	–1.614***	–0.872***	–1.087***
	(0.330)	(0.238)	(0.232)	(0.145)
Size × PolConn	0.106***	0.094***	0.082***	0.066***
	(0.028)	(0.021)	(0.020)	(0.012)
Lev × PolConn	–0.192	–0.025	–0.328**	–0.095
	(0.208)	(0.174)	(0.154)	(0.096)
ATO × PolConn	0.546***	0.133**	0.145***	0.131***
	(0.100)	(0.060)	(0.056)	(0.040)
C4 × PolConn	–0.243	1.169***	0.050	0.714***
	(0.201)	(0.173)	(0.122)	(0.114)
Controls and constant	Yes	Yes	Yes	Yes
Mills ratio	–1.863***	0.069*	–1.863***	0.069*
	(0.085)	(0.038)	(0.085)	(0.038)
Mills × Time ($\chi^2(13)$)	43.00***	38.62***	42.68***	39.13***
P-values of Mills × Time ($\chi^2(13)$)	0.000	0.000	0.000	0.000
Industry	Yes	Yes	Yes	Yes
R-squared	0.569	0.289	0.566	0.292
Observations	3391	7,984	3391	7,984

Table presents findings of second step of Semykina and Wooldridge (2010) approach for the subsamples classified based on the intensity of their industry regulation. *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors. Appendix A provides the definitions of all the variables.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

government purchase of industry output (or government supply of industry's crucial input), and government antitrust investigation of industry.[104] We employ this definition to define regulated industries. Such industries include electricity and gas, transportation, mining, petroleum and chemicals, telecommunication, construction of buildings and civil engineering, healthcare, and pharmaceuticals and medical equipment. We estimate equation 3 separately for firms operating in regulated and less regulated industries using the Semykina and Wooldridge procedure. The findings are recorded in table 6.

The evidence in table 6 suggests that corporate political connections have a significant negative influence on the market value of sample firms operating in both regulated and less regulated industries. Similar to the findings reported earlier for the entire sample, larger firms and firms that are operationally more efficient make use of the benefits of political connections better than their corresponding counterparts in the case of both regulated and less regulated industries. Further, we note that unlike the findings of the entire sample, firms operating in concentrated industries that are heavily regulated do not benefit from political connections. But, firms operating in the concentrated industries that are less regulated seem to benefit from the political connections in terms of their market value as we report a significant positive coefficient estimate for the interaction term of industry concentration with political connections. These findings imply that firms operating in the heavily regulated industries that are

[104]Grier et al., 1994; Hadani and Schuler, 2013.

more concentrated seek political connections for the benefit of overall industry. But the firms operating in the less regulated industries that are more concentrated seek political connections for their "private benefits" such as obtaining government contracts/licenses and advance information about the possible policy changes that their competitors might otherwise capture.

Political connections and financial leverage

We examine the association between sample firms' political connections and their financial leverage by estimating equation 4. We employ system-GMM estimator to estimate the dynamic leverage equation as it accounts for the endogeneity of input variables using the internally generated instruments. Table 7 reports the findings. The Hansen test of overidentification and difference-in-Hansen test of exogeneity validate the instruments and tests that they are exogenous. We consider both the definitions of political connection variable: political connections as a binary variable (models 1 and 2) and as a continuous variable (models 3 and 4). We also control for the conventional determinants of leverage. The reported evidence suggests that political connections do not influence sample firms' financial leverage. The results are consistent for both the measures of political connections: binary and continuous variables. In a way, these findings do not support our hypotheses H6(a) and H6(b). They imply that both the positive and negative aspects of political connections on the firms' financial leverage tend to offset each other in the context of our sample firms. That is, political connections do not seem to influence an average sample firm's financing choices.

Additional tests

We employ at least four additional analyses to further confirm the findings presented in the previous subsections. First, following earlier studies,[105] we also consider log transformation of market capitalization to measure sample firms' market value. We again estimate equation 3, where log-transformed market capitalization as the dependent variable, using Heckman as well as Semykina and Wooldridge procedures. The results are qualitatively similar to those reported in the previous sections where we use Tobin's Q to measure the market value. Political connections continue to have negative influence on the market value of sample firms. Further, the evidence also suggests that sample firms with larger size, with greater operating efficiency, and those operating in the more concentrated industries benefit more from the political connections than their corresponding counterparts.

Second, we have measured industry concentration using four-firm concentration ratio[106] and presented the analyses in the previous sections. Alternatively, researchers also use Herfindahl–Hirschman index (HHI) to quantify the industry concentration. HHI is computed by squaring the market share (in terms of sales) of each firm operating in the industry and then adding the resulting numbers. To test the robustness of our findings, we also consider HH index as a measure of sample firms' industry concentration and reestimate the proposed econometric models. We find that the results are consistent and similar whether we employ HHI or four-firm concentration ratio to measure the sample firms' industry concentration.

Third, we report that, in the context of India, political connections do not significantly influence the firms' financial leverage. This finding is contradictory to the observations of earlier studies that reported a significant positive influence of the political connections on the corporate leverage.[107] The anecdotal evidence in the context of India, particularly during the early 2014 blamed the corporate political connections for the overwhelming nonperforming assets of institutional lenders, suggesting the wide presence of crony capitalism in India.[108] This coincided with the Indian central bank

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[105]Tuschke and Sanders (2003); Hillman (2005); Hadani and Schuler (2013).
[106]Bhuyan (2000); Hart (2003).
[107]E.g., Faccio (2010).
[108]Gowda and Sharalaya (2016); Raghuram Rajan (2014). Finance and Opportunity in India. Twentieth Lalit Doshi Memorial Lecture on 11 August 2014: https://www.rbi.org.in/scripts/BS_SpeechesView.aspx?Id=908 (accessed on 25 January 2021).

Table 7: Influence of firms' political connections on their financial leverage

Variables	1	2	3	4
L.Lev	0.775***	0.774***	0.774***	0.774***
	(0.018)	(0.018)	(0.018)	(0.018)
PolConn	−0.002	−0.040		
	(0.014)	(0.079)		
Size × PolConn		0.004		
		(0.009)		
PolConn_Number			−0.006	−0.039
			(0.010)	(0.050)
Size × PolConn_Number				0.003
				(0.005)
ROA	−0.475***	−0.475***	−0.476***	−0.477***
	(0.042)	(0.042)	(0.042)	(0.042)
Sales growth	−0.004	−0.004	−0.004	−0.004
	(0.007)	(0.007)	(0.007)	(0.007)
NDTS	−0.311	−0.305	−0.324	−0.311
	(0.214)	(0.214)	(0.214)	(0.214)
Tang	−0.031**	−0.031**	−0.029*	−0.029*
	(0.016)	(0.016)	(0.016)	(0.016)
Size	0.013***	0.012***	0.014***	0.013***
	(0.004)	(0.005)	(0.004)	(0.005)
Age	−0.012*	−0.011*	−0.012*	−0.011*
	(0.007)	(0.007)	(0.006)	(0.006)
BG	−0.036**	−0.036**	−0.035**	−0.035**
	(0.015)	(0.015)	(0.015)	(0.015)
C4	0.085	0.087	0.086	0.088
	(0.073)	(0.073)	(0.073)	(0.072)
Firm-specific risk	1.013	1.043	1.004	1.033
	(0.979)	(0.979)	(0.970)	(0.972)
IndMed_Lev	0.146*	0.142*	0.146*	0.137*
	(0.075)	(0.075)	(0.075)	(0.075)
Time	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
AR1	0.000	0.000	0.000	0.000
AR2	0.590	0.604	0.583	0.588
Hansen-test (p-value)	1.000	1.000	1.000	1.000
Diff - Hansen (p-value)	0.740	0.888	0.916	0.849
Observations	10,837	10,837	10,837	10,837

Note: Table records the results of system – GMM estimator, used to estimate the effect of political connections on the sample firms' leverage (equation 4). The Hansen test of overidentification and the difference-in-Hansen test of exogeneity are based on the null hypothesis that all the instruments are valid and exogenous, respectively. *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors. Appendix A provides the definitions of all the variables.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

releasing the stringent guidelines for revitalizing distressed assets in January 2014.[109] These guidelines outline corrective action plans for institutional lenders that necessitated early identification of distressed assets and timely restructuring of those assets. These guidelines prompted the lenders to be more vigilant while advancing loans under the political/bureaucratic pressures as such loans also attract greater attention from the media and public scrutiny. We are concerned that our findings are probably influenced by such lending preferences of institutional lenders following the release of central bank guidelines on the identification of potential distressed assets in early 2014. To examine such a possibility, we partition the sample observations at the year 2014 into two subsamples and estimate equation 4 using system-GMM estimator separately for both the subsamples. We note that the results of the subsample analysis are similar to those reported for the entire sample (table 7). Further, we also considered alternative definitions of leverage including the ratio of total borrowings to market value of assets (i.e., sum of the book value of debt and market value of equity) and reestimated the equation 4. This additional analyses confirm that political connections do not significantly influence the sample firms' financing choices.

Finally, as we noted earlier that firms establish political connections to manage their external environment either by contributing to their election process or by employing the politically connected individuals on their board as the directors. The analyses presented in the previous sections focus on the later in identifying the politically connected sample firms. It is possible that there are a few sample firms that are accruing the benefits of political connections by donating to the political parties. Unfortunately, such donations to political parties by firms or individuals are still a taboo phenomenon in India and are not well reported/documented. However, we make use of the donations records that are made available on data depository platform,[110] managed by the Association of Democratic Reforms (ADR), an Indian nongovernmental organization that works in the area of electoral and political reforms. A little more than 95% of the donation records available on this platform are of the individual donors. We employ an intensive process of company name search and matching with that of our sample firms. A sample firm is then identified as politically connected in a year if it has contributed to any political party in the corresponding year or in the past. In this way, we could identify 949 firm-year observations with political connections, leading to an increase in the total percentage of firm-year observations with political connection to 29.9%. We then reexamined the effect of political connections on firms' market value including the potential influence of firm- and industry-specific factors on this relationship. The findings are reported in the appendix D. The results of this additional analysis remain qualitatively similar to those reported in the earlier sections.

Conclusion

We examine the influence of political connections on firms' financial outcomes, such as their market value and financial leverage. Our endogeneity corrected empirical evidence suggest that political connections negatively influence the market value of sample firms. This finding indicates that the costs of political connections outbalance associated benefits in the context of Indian firms, supporting the agency theory perspective. Further, we show that the effect of political connections is not homogeneous. The reported evidence suggests that firms with larger size, greater operational efficiency, and those operating in the more concentrated industries benefit more from the political connections than their corresponding counterparts. These findings are consistent with the various definitions of market value and political connections. Further, we report that political connections do not influence sample firms' financial leverage. The average negative effect of political connections on the firms' financial outcomes can be attributed to the increased awareness of participants in the financial markets about the costs of corporate political connections, owning to prevailing unconstrained open media and vigilant civil society in India. Investors do not seem to appreciate the

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[109]Reserve Bank of India releases Framework for Revitalizing Distressed Assets in the Economy on 30 January 2014: https://www.rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30519 (accessed on 25 January 2021).

[110]Source: https://myneta.info/party/ (accessed 10 September 2021). We thank our anonymous referee for pointing us toward this open data depository platform.

firms for their political connections as they probably believe that the costs of having politically connected board members in terms of their lack of professionalism and business acumen outweigh the benefits that firms accrue from them. Our findings also raise questions on the motivation of Indian firms' political connections. They suggest that most of these firms probably seek political connections to shield their opaqueness in their disclosures, operational inefficiencies, and for the reasons other than enhancing their market value.

Though we adopted a robust strategy to empirically test the proposed hypotheses, as with most research, our empirical investigation is not free from limitations. First, one can argue that our findings are not caused by the board of directors being politically connected, but rather by their lack of expertise in the functional activities of the respective sample firms. To investigate its possibility, we may need to sort politically connected firms into two groups: those firms with the politically connected board members whose technical expertise is functionally related to the firms and those firms with the politically connected board members whose expertise is not functionally related to the firm. We could not investigate such differential impact as we do not have access to the information that precisely defines the expertise (in terms of its impact on the functionalities of corresponding firm) of the board members. Second, with our empirical findings, we imply that the costs of political connections are higher than the associated benefits, leading to lower market valuation in the case of politically connected firms. But, our study does not present the direct evidence on the possible costs of such connections in the case of sample firms. We believe that future studies in this direction can offer promising implications for the policy makers and market participants.

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Appendix A: Variables description

Variable	Description
Size	Natural logarithm of book value of total assets
Age	Natural logarithm of firm's age, computed using its year of incorporation
Q	Ratio of market value of total equity plus book value of total debt to book value of total assets
ROA	Ratio of operating income to total assets
Lev	Ratio of firm's total borrowings to total assets
IndMed_Lev	Industry median ratio of total borrowings to total assets
Sales growth	Ratio of change in sales to previous year's sales
ATO	Ratio of sales to total assets
CAPEX/TA	Ratio of change in gross fixed assets to total assets
C4	Sum of the market share of four largest firms in the industry
TANG	Ratio of gross fixed assets to total assets
NDTS	Ratio of depreciation and amortization to total assets
Firm-specific risk	It is the standard deviation of residuals of market model
PolConn	A firm is considered as politically connected in a year if at least one of its board members is connected to the policy making/execution at the level of either central or state governments
PolConn_Number	Number of board of directors who are connected to the policy making/execution at the level of either central or state governments
Industry Pol. Con	Average number of politically connected firms in a given industry

Appendix B: Sample distribution across the study period

Year	Total no. of observations	Firm years with political connection	
		No. of observations	Percent
2006	540	119	22.04%
2007	687	142	20.67%
2008	809	174	21.51%
2009	832	199	23.92%
2010	918	229	24.95%
2011	1,014	264	26.04%
2012	1,043	264	25.31%
2013	1,054	270	25.62%
2014	1,059	282	26.63%
2015	1,049	294	28.03%
2016	1,116	318	28.49%
2017	1,169	316	27.03%
2018	1,237	314	25.38%
2019	1,226	309	25.20%
Total	13,753	3,494	25.40%

Note: Table reports the distribution of firm-year observations, including those that are politically connected across the study period, i.e., from 2006 to 2019.

Appendix C: Determinants of firms' political connections

Variables	Heckman first stage (Selection equation)
Dependent Variable: Political connections	
Q	0.067*
	(0.036)
Size	0.674***
	(0.068)
Lev	−0.538**
	(0.262)
Sales growth	0.011
	(0.080)
ATO	0.024
	(0.105)
Capex/Ta	0.408
	(0.309)
C4	−1.376**
	(0.605)
Age	−0.011
	(0.137)
Business Group	0.674***
	(0.188)
Firm specific risk	3.949
	(5.682)
Industry Pol. Connections	7.316***
	(0.606)
Constant	−9.977***
	(1.139)
Time	Yes
Industry	Yes
Log Likelihood	−2757.35
χ^2	0.000
Observations	11,375

Note: Table presents the results of selection equation (i.e., equation 1), estimated using the Probit regression estimator. *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors. Appendix A provides the definitions of all the variables.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.

Appendix D: Additional test: Effect of firm- and industry-specific factors on the relationship between corporate political connections and market value of firms

Variables	1	2	3	4	5	6
Dependent variable: Tobin's Q						
PolConnGrand	−0.047**	−1.044***	0.144***	−0.207***	−0.337***	−1.594***
	(0.022)	(0.140)	(0.052)	(0.039)	(0.064)	(0.184)
Size × PolConnGrand		0.108***				0.137***
		(0.015)				(0.017)
Lev × PolConnGrand			−0.679***			−0.647***
			(0.131)			(0.132)
ATO × PolConnGrand				0.195***		0.245***
				(0.050)		(0.050)
C4 × PolConnGrand					0.532***	0.481***
					(0.117)	(0.118)
Size	−0.385***	−0.444***	−0.382***	−0.378***	−0.382***	−0.447***
	(0.050)	(0.051)	(0.050)	(0.050)	(0.050)	(0.051)
Lev	−0.319***	−0.308**	−0.100	−0.315***	−0.324***	−0.094
	(0.122)	(0.122)	(0.130)	(0.122)	(0.122)	(0.129)
ATO	0.444***	0.449***	0.449***	0.389***	0.447***	0.389***
	(0.050)	(0.050)	(0.050)	(0.052)	(0.050)	(0.051)
C4	0.759***	0.796***	0.759***	0.757***	0.590**	0.649**
	(0.266)	(0.264)	(0.266)	(0.265)	(0.268)	(0.266)
Mills ratio	−0.850***	−0.881***	−0.852***	−0.847***	−0.850***	−0.886***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)

Appendix D: *(Continued.)*

Variables	1	2	3	4	5	6
Other controls and constant	Yes	Yes	Yes	Yes	Yes	Yes
Mills × Time ($\chi^2(13)$)	55.50***	56.18***	56.33***	55.59***	55.76***	57.5***
P-values of Mills × Time ($\chi^2(13)$)	0.000	0.000	0.000	0.000	0.000	0.000
Industry	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.332	0.336	0.334	0.334	0.334	0.341
Observations	11,375	11,375	11,375	11,375	11,375	11,375

Note: Table presents the findings (second step of Semykina and Wooldridge [2010] approach) of one of the additional tests, where we consider the political donation data along with the board of director's professional details in defining the politically connected sample firms. PolConnGrand is a binary variable that identifies the politically connected firms that have either at least one board of director who was either a policy maker or a former bureaucrat, or donated to at least one of the political parties (as mentioned at the https://myneta.info/party/). Appendix A provides the definitions of all the variables. *Time* and *Industry* refer to the year and industry fixed effects. The numbers in the parentheses are corresponding robust standard errors.
The superscripts of ***, **, and * represent statistical significance at the 1%, 5%, and 10% confidence levels, respectively.