The Impact of Trade Liberalization in the Presence of Political Distortions*

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Abstract

Political distortions are prevalent in many developing countries and can imply substantial productivity losses. Theory is ambiguous as to whether greater openness to trade amplifies or reduces the effects of such distortions. This paper shows that trade liberalization in India decreased the value of firms' political connections, suggesting a reduction in political distortions. First, using variation in firm connections stemming from political turnover, we identify that political connections increased firm performance by 10–20%. Second, we evaluate how the value of political connections changed after India's externally imposed tariff reductions, using a triple-difference and difference-in-discontinuities design. We find that political connections became substantially less valuable when tariffs on input goods were reduced. Our findings imply that access to international markets reduces firms' dependence on political connections to source input goods, thus reducing the distortionary effect of such connections. The effects appear stronger in more corrupt states, where baseline political distortions are expected to be higher. Our results suggest a new margin for gains from trade in the presence of political distortions through a direct effect of trade liberalization on the prevalence of such distortions

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1 Introduction

Political distortions that prevent an efficient allocation of resources across firms can substantially reduce aggregate productivity and affect economic outcomes (Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009). Such distortions are particularly prevalent in many developing countries, where weak institutions allow politicians to interfere in resource allocation. At the same time, developing countries are increasingly integrated into global markets. However, while the trade literature provides a clear rationale for trade liberalization (namely, trade induces a more efficient organization of production, which generates welfare gains), in the presence of political distortions, the effect of trade is ambiguous.

The gains from trade may be larger than expected if trade reforms, in addition to increasing efficiency through more well-known mechanisms, also mitigate distortions. For instance, increased access to imported intermediates may reduce firms' reliance on informal ties to politicians. On the other hand, if the pro-competitive effect of trade increases firms' dependence on political connections, trade liberalization may amplify distortions and make the gains from trade less clear. Given this ambiguity, it is important to evaluate whether trade reforms have a first-order effect on political distortions to fully understand the implications of trade in countries where firms face substantial political frictions (Goldberg and Pavcnik, 2016; Atkin and Khandelwal, 2020).[1]

In this paper, we shed light on this question by examining the impact of trade liberalization on the distortionary effects of political connections. Specifically, we investigate whether India's tariff reductions in the 1990s impacted the returns to firm-specific political connections. Firms in India face distortions that substantially affect their productivity, and political favoritism plays an important role in firms' exposure to frictions (Hsieh and Klenow, 2009; Asher and Novosad, 2017; Lehne et al., 2018). By exploiting India's externally imposed, rapidly implemented, and largely unexpected trade liberalization of the 1990s, we provide the first empirical evidence on how tariffs directly affect the value of political connections. In particular, we show that better access to inputs through lower tariffs on input goods reduces the distortionary effect of political connections. Our results suggest a new margin for gains from trade in the presence of political distortions, with tariff reductions affecting the prevalence of such distortions.

As a first step, we quantify connections between firms and the state-level politician who represents the constituency in which the firm is located and estimate the value of these firm-specific connections. We focus on connections with local politicians as they play an important role in helping individuals and firms in their constituency obtain inputs and services.[2] Since we cannot observe actual connections, we construct a surname-based

[1] This is particularly relevant since import tariffs remain relatively high in developing countries (UNCTAD, 2019).

[2] See Section 2.2 for more details.

measure of proximity between firms' board directors and politicians. This proxy for connections is well established as a meaningful identifier of social proximity in India (Banerjee et al., 2009; Fisman et al., 2017; Lehne et al., 2018) but has not previously been used for studying connections between firm directors and local politicians.[3] To identify the value of such connections for firms, we exploit changes in political turnover stemming from election outcomes by using a difference-in-differences (DiD) design and a close-elections regression-discontinuity (RD) design. The DiD design exploits the data's full panel dimension and therefore has more power but assumes that no unobservable confounding factors vary over time. The RD design relaxes this assumption but relies on a smaller sample and estimates a local treatment effect for firms located in politically competitive constituencies.

Using the two designs, we find a robust causal relationship between political connections and firm performance. In our main specification, connections to the winning politician increase firm sales and expenses by approximately 10–20% on average in the pre-reform period. This positive effect is driven by increased usage of capital and labor inputs rather than increased productivity and is comparable to those of other studies that have explored the relationship between firm outcomes and political connections. For instance, Akcigit et al. (2020) find that politically connected firms in Italy grow more relative to firms without connection in terms of size but not in productivity.[4] Moreover, we find no effect of political connections on firm profit. We argue that one possible explanation is that firms return favors to politicians through actions that benefit the politicians' reelection probability, such as increasing employment in the constituency, rather than boost firms' profit.[5]

Having shown that political connections matter for firms, suggesting that politicians distort resource allocation across firms, we turn to the main research question in this paper. Specifically, we examine the impact of increased trade exposure on the distortionary effect of political connections. To study this, we combine the exogenous variation in firms' connection status with India's externally imposed import tariff reductions in a triple-difference design. Again, to relax the assumptions, we complement the analysis with a difference-in-discontinuities design that combines tariff reductions with a close-election

[3]With this surname method, we are not claiming to pin down actual connections between politicians and firm directors. Rather, the measure reflects whether two individuals are more likely to be connected and/or favor each other based on a joint identification with the same social and ethnic community.

[4]Specifically, Akcigit et al. (2020) find that politically connected firms in Italy increase employment and value-added growth by 2–4 percentage points. Cingano and Pinotti (2013) also study Italian firms and find that political connections increase revenue by 6–9%. Schoenherr (2019) finds that newly elected Korean presidents appoint members of their networks as CEOs of state-owned firms, which increases assets, sales, and investment by approximately 14–42%. Fisman (2001) finds that firms connected to Suharto's regime in Indonesia saw declines of up to 60% in stock prices as rumors of Suharto's deteriorating health started to spread in the media.

[5]See, for instance, Bertrand et al. (2007), who show that politically connected CEOs influence the hiring decisions of their firm to increase incumbent politicians' reelection prospects.

RD and provides more local estimates for competitive political races.

To distinguish between different channels through which trade liberalization can affect the value of political connections, we separate changes in (i) access to inputs due to lower tariffs on input goods (i.e., input tariffs) and (ii) competition due to lower tariffs on final goods (i.e., output tariffs). This distinction is of particular interest since previous research highlights that access to intermediate inputs is important for firms in India and that input tariff declines have predominately driven trade-induced productivity changes (Goldberg et al., 2010a; Khandelwal and Topalova, 2011; Boehm and Oberfield, 2020).

Our results show that tariff reductions substantially reduce the value of political connections. In particular, a 1 percentage point reduction in input tariffs decreases the value of political connections for firms' mean sales by 0.5%. This is a sizable effect. The average firm in our sample experienced an input tariff reduction of approximately 20 percentage points, which implies that their returns to political connections fell by 10 percentage points. The results are similar when we estimate the effect of input tariff reductions on the impact of political connections in terms of total expenses and the use of capital and labor. These findings are corroborated by the difference-in-discontinuities estimates. In addition, by exploiting heterogeneity across geographic areas, we find that the effects are stronger in more corrupt states. This suggests that the impact of tariff reductions is proportional to the prevalence of distortions.

Throughout, we find no effect of output tariffs, i.e., tariffs on the final goods that firms produce, on the value of political connections. The null effect may imply either that increased competition does not affect the value of connections or that politicians do not primarily intervene in the output market. We show that firms in industries with high output tariffs in the pre-reform period did not systematically benefit more from connections, which we interpret as suggestive evidence for the latter interpretation.

To investigate the mechanisms behind the input channel, we analyze firms' use of input goods. We find that in the pre-reform period, while politically connected firms consumed more input goods, they imported fewer inputs than firms without connections. This suggests that the main effects are not driven by politicians helping connected firms import. Our findings imply that when tariffs are high and outside options are more expensive, local politicians have more leeway to intervene in favor of connected firms. Better access to inputs through importing provides an outside option to political connections, which reduces firms' dependence on these connections. Thus, our results suggest a new margin for gains from trade in the presence of political distortions through a direct effect of tariff reductions on the prevalence of such distortions.

Previous studies have shown that the effects of trade reforms in the presence of resource misallocation are theoretically ambiguous. In particular, Bai et al. (2019), Berthou et al. (2019), and Chung (2019) examine the implications of resource misallocation on gains from trade by incorporating firm-level distortions into heterogeneous-firm trade models.

However, they do not consider how trade can affect the underlying institutions that generate distortions. We contribute to this literature by showing that trade reforms can directly affect resource misallocation, which needs to be considered in evaluations of the implications of trade to avoid underestimation of the gains from trade in the presence of distortions.[6]

The empirical literature on how trade affects distortions is, as noted in a recent literature review by Atkin and Khandelwal (2020), very scant. This is partly due to difficulties in observing and measuring the sources of distortions. The few papers that exist focus on distortions stemming from state ownership and the impact of non-tariff barriers to trade. Our paper relates most closely to a study by Khandelwal et al. (2013), which shows how the removal of export quotas in China reduced misallocation by eliminating the preferential distribution of export licenses to state-owned firms. We focus on a more general and wider definition of distortion stemming from political connections rather than state ownership and study a conceptually different trade reform, i.e., tariff reductions, in which politicians' role is less straightforward. Thus, we provide the first empirical evidence on the impact of tariff reductions on the distortionary effects of political connections.

Through this contribution, we also add to the literature on how international trade affects domestic institutions (see Nunn and Trefler (2014) for a review). Much of this literature studies historical events, such as medieval Venice's response to globalization (Puga and Trefler, 2014). We speak to this literature by providing novel evidence on how trade can affect informal political institutions in a modern developing-country setting.

More generally, this paper relates to a large body of literature that studies the implications of trade liberalization and, in particular, the effects of India's trade liberalization on firms' productivity (Khandelwal and Topalova, 2011), use of imported inputs (Goldberg et al., 2010a), product mix decisions (Goldberg et al., 2010b), and markups (De Loecker et al., 2016). We complement this body of research by establishing a new channel through which trade liberalization can affect firms in the presence of firm-specific frictions, i.e., through a direct effect of trade liberalization on firm-specific distortions. Finally, our paper contributes to a growing literature on how firms benefit from political connections (e.g., Fisman, 2001; Cingano and Pinotti, 2013; Lehne et al., 2018; Schoenherr, 2019; Akcigit et al., 2020; Brugués et al., 2020). We add to this literature by providing new findings on how political connections matter for firms in India.

The remainder of the paper is organized as follows. In the next section, we present the institutional background, including details on India's trade reform and the role of local politicians, as well as a conceptual framework to guide our reduced-form results. In Section 3, we describe the data sources, our measure of political connections, and the sample construction. Before we study the impact of trade liberalization on the distortionary effect

[6]Our findings also contribute more broadly to the literature on resource misallocation across firms (e.g., Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009; Bau and Matray, 2020).

of political connections, in Section 4, we describe the two empirical strategies used to estimate the value of political connections and present the results of those estimations. Section 5 turns to the primary focus of the paper, where we study whether the value of political connections is affected by trade liberalization. Section 6 discusses the mechanisms behind the effect of input tariffs. Section 7 concludes the paper.

2 Background and Conceptual Framework

In this section, we describe the features of India's trade liberalization of the 1990s, discuss the role of state-level politicians in India, and lay out a simple framework that demonstrates how politicians can distort resource allocation across firms and how tariff reductions may affect such distortions.

2.1 India's Trade Liberalization of the 1990s

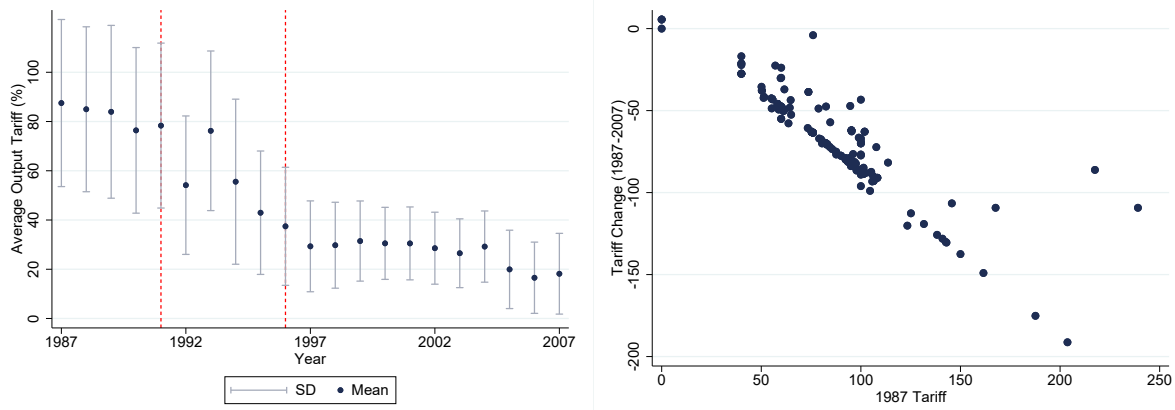
India's rapid and unforeseen trade liberalization, which started in 1991, was a response to a balance-of-payments crisis and part of an IMF adjustment program. The reform meant that India abandoned its restrictive trade policies that had been in place since its independence. The balance-of-payments crisis stemmed from a rise in macroeconomic imbalances (fiscal and balance-of-payments deficits), which increased India's vulnerability to economic shocks. As a result, the sudden increase in oil prices due to the Gulf War in 1990, the drop in remittances from Indian workers in the Middle East, slackened demand from important trading partners, and political uncertainty all served to undermine investor confidence and resulted in large capital outflows. To address its external payment problems, India's government requested a Stand-By Arrangement from the IMF in August 1991.

As part of the IMF adjustment program, India rapidly, drastically, and unilaterally reduced its tariffs and narrowed the dispersion in tariff rates across sectors. Figure 1a shows the evolution of tariff reductions throughout the liberalization period. The average tariff rate fell from approximately 80% in 1990 to 40% in 1996, and the standard deviation of tariffs dropped by approximately 30% in the same period. Figure 1b illustrates the change in tariffs for each industry in relation to the baseline (1987) tariff rate. The industries with the highest baseline tariffs received the largest tariff cuts, and there was significant variation in the tariff change across industries.

Following the trade liberalization, overall imports and particularly intermediate inputs increased (Goldberg et al., 2010a). Trade volume growth outpaced real output, and as a result, the ratio of India's manufacturing trade to GDP increased from an average of 13% in the 1980s to nearly 19% by 1999–2000.

India's trade liberalization was first examined by Topalova (2010), who studied the effects of trade on poverty and has since then been used in several papers to investigate different impacts of trade liberalization (see, e.g., Goldberg et al., 2010a,b; Khandelwal

Figure 1: Trade Liberalization and Tariff Changes



(a) Average Output Tariff, 1987–2007 (b) Pre-Reform Tariffs and Tariff Changes

Notes: Panel (a) shows the evolution of the average tariff rates and the standard deviation of tariffs over the Indian trade liberalization period. The first vertical dotted line indicates 1991, the year in which the liberalization started. The period between 1991 and 1996 denotes the most intensive period of tariff reductions. Panel (b) is a scatterplot of pre-reform tariff rates (measured in 1987) and the change in tariffs between 1987 and 2007. Each marker represents a 4-digit NIC industry.

and Topalova, 2011). This literature has shown that tariff changes were uncorrelated with pre-reform firm and industry characteristics such as productivity, size, output growth during the 1980s, and capital intensity. Thus, the trade liberalization does not appear to have been targeted toward specific industries and was not subject to common political pressure since the reform was largely unanticipated by firms. In Section 5, we verify that the tariff reductions were uncorrelated with pre-reform firm characteristics.[7]

2.2 The Role of State-Level Politicians

Throughout the paper, we focus on political connections stemming from firm directors' social proximity to the politician who represents their constituency in the state legislative assembly, i.e., the Member of the Legislative Assembly (MLA). In general, elections of MLAs take place every fifth year and are staggered across states. The elections are contested through a first-past-the-post system, where candidates compete in single-member legislative constituencies. The candidate who receives the most votes in a given constituency is granted a seat in the state parliament.[8] During the time period of our analysis, India had approximately 4,090 legislative constituencies consisting of 213,000

[7]While the tariff reductions were the main part of the IMF adjustment program, the program also included delicensing and relaxation of foreign direct investment (FDI) rules, aimed at increasing domestic competition. Section 5 discusses these reforms and shows that our results are robust to controlling for their impact.

[8]Typically, the party that receives the largest share of seats is given the opportunity to form a government. Depending on the distribution of seats, the ruling government can be either a single-party majority or a coalition.

individuals on average.[9]

India is a federal democracy with largely autonomous state-level governments and grants substantial administrative and legislative power to the states. The states incur approximately 60% of total expenditures and have administrative control over numerous areas, such as public goods provision, local labor markets, and public services (Asher and Novosad, 2017). While the official function of MLAs is to represent their constituents in state legislative assemblies, the assemblies rarely meet, and most political decisions are made by the executive (Chopra, 1996). Rather, as documented by Jensenius (2013), MLAs' primary role is to deal with constituent requests, i.e., to help individuals and firms in their constituency obtain inputs and services.

Such constituent requests are frequent and vary greatly. They include, among other things, helping constituents obtain necessary documentation, implementing regulations, intervening in disputes over land or contracts, and dealing with problems with the police, and they usually require MLAs to contact relevant bureaucrats or cabinet ministers on behalf of their constituents. MLAs influence on public officials is particularly crucial for firms since public officials have the ability to hold up the operations of firms, e.g., by limiting the supply of permits, demanding bribes, and initiating tax and labor use audits (Asher and Novosad, 2017).

Due to the high frequency of constituent requests, Jensenius (2013) observes that having a good relationship with their MLA is key. This is especially the case for firms since firms in India depend on public officials and government-supplied inputs in many areas of business (Panagariya, 1996). Moreover, survey data suggest that 20% of firms view corruption as the biggest obstacle and informal channels as crucial "to getting things done" (Enterprise Surveys, 2014). Previous literature has also shown that MLAs use their unofficial capacity as intermediaries to favor connected firms by allocating contracts to members of their network (Lehne et al., 2018). Thus, qualitative evidence and previous research suggest that politicians may indeed favor connected firms. For instance, by giving them priority when providing inputs and services or putting pressure on public officials on behalf of connected firms.

2.3 Conceptual Framework and Reduced-Form Predictions

To lend structure to our empirical results, we lay out a framework where we assume that firms produce good Y using the following production function:

$$Y_i = A_i(K_i^{\alpha} L_i^{1-\alpha})^{1-\mu} M_i^{\mu},$$

which exhibits diminishing marginal returns in each input. A_i is a firm's exogenous

[9]For state-level elections, these constituencies are called assembly constituencies, which are different from the electoral constituencies used in elections for the national parliament (parliamentary constituencies).

technology, K_i and L_i are capital and labor inputs, and M_i is the material input bundle. A cost-minimizing firm consumes each input factor until its marginal revenue is equal to its marginal cost so that inputs are efficiently allocated across firms.

As discussed in the previous section, there are reasons to believe that MLAs interfere in resource allocation by prioritizing the provision of necessary inputs and services to connected firms. Such interference may distort the efficient resource allocation across firms. We follow standard practice in the literature and model distortions as a wedge in the firm's production process (Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009). The firm-specific wedge, υ_i, can be negative, implying that a politically connected firm benefits from subsidies, or positive, implying that firms without connections pay an additional cost. The price paid by firm i for input X is then $(1+\upsilon_i^X)p^X$, where $X \in \{K, L, M\}$. A firm's profit function is:

$$\pi_i = P_i Y_i - \sum_{X \in \{K,L,M\}} (1+\upsilon_i^X)p^X X_i - r^{pc},$$

where politically connected firms are exposed to an additional term, $r^{pc} \geq 0$, which can be thought of as returned favors from the firm to the politician. For instance, investments that help increase the politician's reelection prospects (see, e.g., Bertrand et al. 2007 on how political connections can have significant costs for the connected firms due to higher rates of job creation).

The presence of wedges impacts firms' performance through its proportional effect on the cost of production.[10] Firms that face high wedges face higher costs and therefore use fewer inputs than they would in a frictionless setting. Thus, resource allocation across firms depends on the wedges that they face. Our empirical tests identify the impact of political connections on firms' performance and the use of inputs. If we find an effect, we can infer that politicians intervene in resource allocation across firms.

Why Do Tariffs Matter for Political Distortions? In an open economy, firms can import input goods. Thus, the material input bundle consists of inputs produced domestically, D_i, and a bundle of imported input goods, F_i, according to the constant elasticity of substitution (CES) aggregator:

$$M_i = (D_i^\rho + F_i^\rho)^{\frac{1}{\rho}},$$

where the input bundles are themselves CES aggregates. In the presence of political distortions, the price of domestically produced input goods, D_i, is $(1+\upsilon_i^D)p^M$. The price of imported goods is $(1+\tau)p^M$, where τ is the per-unit trade cost modeled in the standard iceberg formulation, according to which $\tau > 1$ units of a good must be shipped for 1 unit

[10] A cost-minimizing firm consumes an input X_i until the marginal revenue of that input is equal to its marginal cost: $P_i \frac{\partial Y_i}{\partial X_i} = (1+\upsilon_i^X)p^X$.

to arrive at the destination. Tariffs have a direct effect on trade costs. When tariffs are high, so that $\tau > \upsilon_i^D$, firms are more dependent on domestic inputs and thus on the wedge that they face. When tariffs fall, the outside option becomes cheaper, and firms' input choice shifts toward imported goods. If firms without connections face higher wedges, they shift to imported inputs to a higher degree when tariff reductions imply that $\tau < \upsilon_i^D$. This reduces the wedge's impact on resource allocation since firms can circumvent their wedges through importing. Our empirical tests enable us to identify the effect of reduced input tariffs, i.e., lower tariffs on input goods, on the value of political connections and infer whether tariff reductions impact the distortionary effects of political connections.

In addition to increasing access to inputs, import tariff reductions can increase competition due to lower tariffs on final goods, i.e., output tariffs. Theoretically, reductions in output tariffs can also impact political distortions. If politicians assist connected firms by restraining *local* competition, trade-induced increased foreign competition may decrease the value of political connections. On the other hand, if politicians can restrict foreign competition or compensate by introducing additional costs or obstacles for unconnected firms, the dependence on political connections may increase or remain unchanged when output tariffs are reduced. Our empirical approach allows us to test whether output tariffs matter for the value of political connections. While a positive (negative) effect suggests that increased competition increases (decreases) firms' dependence on connections, a null effect may imply that competition has no effect on connections or that politicians do not primarily intervene in the output market.

3 Data, Definitions and Descriptive Statistics

To examine how the trade liberalization in India affected distortions stemming from political connections, we use data from three different sources: firm-level data from the Prowess database, electoral data from the Socioeconomic High-resolution Rural-Urban Geographic (SHRUG) project (Asher et al., 2019; Jensenius and Verniers, 2017), and tariff data provided by Khandelwal and Topalova (2011). This section describes these data as well as our measure of political connections and the sample construction.

3.1 Firm-Level Data

The firm-level data used in the analysis come from the Prowess database, constructed by the Centre for Monitoring the Indian Economy (CMIE). The data are a panel that starts in 1987/88 and are based on firms' income statements and balance sheets.[11] Prowess covers all listed companies and mainly large and medium-sized unlisted private and public companies. The database accounts for more than 70% of the economic activity in the

[11] For the majority of firms, the reporting year refers to the period April 1st to March 31st.

organized industrial sector of India. It covers 75% of corporate taxes and 95% of excise duties collected by the government of India. We primarily use different measures of firm size (sales and total expenses), profit, capital (measured as gross fixed assets), and the wage bill.[12] To estimate total factor productivity (TFP), we also use data on raw materials, power, and fuel expenses.[13]

For our purposes, the Prowess data have several advantages over alternative datasets on Indian firms. First, unlike the Annual Survey of Industries and the Economic Census, Prowess is a panel, which makes it possible to track firm outcomes over time. Second, the dataset spans the period of the Indian trade liberalization. Third, and importantly, Prowess reports detailed information about each firm's board of directors, which is essential for constructing our measure of political connections. However, Prowess is not particularly well suited for studying market entry or exit since firms are under no legal obligation to report to the data collecting agencies. Moreover, since the panel is not balanced, we perform a series of tests that investigate whether the data reporting and attrition are related to firms' political connections and tariff reductions (see Section 5).

Prowess data have been used in previous literature on the Indian trade liberalization (De Loecker et al., 2016; Goldberg et al., 2010a; Goldberg et al., 2010b; Khandelwal and Topalova, 2011). In particular, Goldberg et al. (2010a) provide a detailed discussion of the credibility and suitability of the database for studying firms for the period of the trade liberalization.

3.2 Electoral Data

We use electoral data from the SHRUG project (Asher et al., 2019; Jensenius and Verniers, 2017). These data cover all assembly constituency elections during India's pre-delimitation period, for which we can spatially match firms (1987–2007). The dataset includes information on constituency characteristics, such as the timing of elections, turnout, number of contestants, and reservation status (SC/ST),[14] as well as information about individual candidates, such as their name, party affiliation, vote share, gender, and

[12] In the main analysis, we use the logarithm of all firm variables. Since our data include negative observations for profit (losses), we add the largest observed negative value to all observations of profit. This does not affect our results but simplifies the interpretation. Moreover, since the database has limited coverage of the number of employees, we use data only on wages as a measure of firms' workforce.

[13] We estimate TFP as suggested by Levinsohn and Petrin (2003), using the generalized method of moments (GMM) estimation proposed by Wooldridge (2009). For the production function estimation, we measure output as deflated sales and use deflators for India made available by Allcott et al. (2016). Sales are deflated using three-digit commodity price deflators, and materials deflators are measures of the average output deflator of a given industry's suppliers using the 1993–1994 input-output table. For capital and wages, we use an implied national deflator.

[14] SCs (scheduled castes) and STs (scheduled tribes) are groups of historically disadvantaged individuals in India. To ensure representation of these groups, some constituencies are reserved for candidates with these backgrounds.

alignment status.[15]

Data on individual candidates in India are not marked with identifiers. Instead, we rely on names to link candidates across elections. Since the same candidate's name is sometimes spelled differently across elections, we employ a fuzzy matching algorithm specialized for Indian names to consistently match candidates across elections.[16] Thus, we are further able to construct additional control variables, such as incumbency status and whether a candidate ever stood for election before. We restrict the electoral data to candidates who came first or second in the race for constituency representation since these are the candidates of interest in the implementation of our empirical strategies.

3.3 Tariff Data

We use tariff data from Khandelwal and Topalova (2011). The tariffs are reported at the 6-digit Harmonized System (HS) level and cover the full sample period (1987–2007). To match tariffs to the firm-level data, we aggregate tariffs to the 4-digit National Industrial Classification (NIC) level, using the concordance by Debroy and Santhanam (1993). For each 4-digit NIC industry, we construct input tariffs as the weighted average of tariffs on inputs used in the production of the final output of that industry. The weights are constructed as the input industry's share of the output industry's total output value using India's input-output matrix for 1993–1994. Formally, input tariffs are defined as $\tau_{\ell t}^{Input} = \sum_k a_{k\ell} \tau_{kt}^{Output}$, where τ_{kt}^{Output} is the tariff on industry k at time t, and $a_{k\ell}$ is the share of industry k in the value of industry ℓ. For example, if a final good use two intermediates with tariffs of 10% and 20% and value shares of 0.25 and 0.75, respectively, the input tariff for this good is 17.5%.

3.4 Quantifying Political Connections

Since we cannot observe actual connections between firm directors and politicians, we quantify political connections by constructing a surname-based measure of proximity between politicians (MLAs) and firm directors in a given constituency. For this purpose, we follow Banerjee et al. (2014), Fisman et al. (2017) and Lehne et al. (2018) and utilize the fact that Indian surnames typically carry information about community belonging, called *jatis*.[17] Specifically, individuals in India can be classified into one of five social classes called *varnas* (castes). Each *varna* is a unification of hundreds of different *jatis*

[15] Alignment status is defined as a dummy variable equal to 1 if the party of an individual candidate is part of the ruling party majority or a coalition government.

[16] For instance, the same candidate's given names may appear in a different order, be translated differently into the Latin alphabet, and/or use abbreviations to varying degrees across elections.

[17] *Jati* affiliation is an important determination of individuals' social community and interactions in India. For instance, 95% of marriages occur between individuals from the same *jati*. For a discussion of the importance of *jatis* in the Indian economy, see, for instance, Lowe (2019), Munshi (2019), and Oh (2020).

(communities/subcastes). Within a region, an individual's last surname typically reflects the *jati* to which they belong. Hence, Indian surnames indicate social proximity at a local geographic level.[18]

Because we do not have information about which *jati* a surname belongs to, we rely on a more restrictive definition. We consider a firm to be politically connected if at least one of its board members shares his or her last surname with the politician (MLA) who represents the constituency in which the firm's headquarter is located.[19] Using surname matching as a proxy for community belonging (e.g., belonging to the same *jati*) has previously been utilized by Lehne et al. (2018). With this method, we are not claiming to pin down actual connections between politicians and firm directors. Rather, the measure reflects whether two individuals are more likely to be connected and/or favor each other based on a joint identification with the same social community. Such within-community favoritism in India has been documented in previous literature (see, e.g., Banerjee et al., 2009; Fisman et al., 2017; Lehne et al., 2018).[20]

3.4.1 Validating Political Connections: A Feature Selection Approach

The surname measure of social proximity is well established in the previous literature but has two distinct shortcomings: (i) it captures a narrow definition of connections, and (ii) it does not account for surname frequency. For these reasons, we complement the analysis by using a data-driven feature selection method to quantify political connections, which allows for more power in the estimations and adjusts for surname frequency. The method draws on the previous finding that boards in Indian firms are overwhelmingly homogeneous in terms of social status and religion (Bhagavatula et al., 2018). This suggests that if two surnames appear on the same board, the respective individuals are more likely to belong to the same social community. Using data on board members and exploiting the probability of two surnames appearing on the same board, we categorize whether two surnames are dependent, i.e., connected to the same community, rather than randomly distributed across boards.

[18]Naming conventions differ across India. Our name-based approach provides a more accurate measure of connections in areas where there is a strong association between surnames and *jatis*. As a general rule, however, the last surname follows the paternal line and is specific to caste or religion. One clear exception to this rule appears in the state Tamil Nadu, where naming conventions are different and imply that surnames do not provide the same information regarding community belonging. Moreover, the *jati* classification mainly applies to Hindu society in India and individuals with Hindi surnames. Thus, for the non-Hindu population, surnames are rather an indication of religion, which might serve as a noisier indicator of connections.

[19]To account for different spellings of the same surname, we implement a fuzzy matching algorithm optimized for Indian names. The algorithm, "Masala-Merge," was developed by Paul Novosad (`http://www.dartmouth.edu/~novosad/code.html`). It is based on the Levenshtein edit distance algorithm, which calculates the number of edits, deletions, and insertions required to get from one name to another but is adjusted to lower the cost of certain substitutions that are common in Hindi.

[20]More generally, ethnic favoritism has been established in many other countries (see, e.g., Burgess et al. (2015) and De Luca et al. (2018)).

Formally, we calculate Pearson's χ^2 statistic for each surname pair (m, n) in district d:[21]

$$\chi^2_d(m,n) = \sum_{e_m \in \{0,1\}} \sum_{e_n \in \{0,1\}} \frac{(N_{e_m e_n} - E_{e_m e_n})^2}{E_{e_m e_n}}$$

where e_m (e_n) is equal to 1 if a board contains surname m (n) and 0 otherwise. $N_{e_m e_n}$ counts the observed number of occurrences of surnames m and n, while $E_{e_m e_n}$ calculates the expected number of such occurrences assuming independence of the two surnames. If the surname counts are drawn from (possibly different) multinomial distributions, χ^2 is a test statistic for the null hypothesis that the two surnames are independent. Thus, if we can reject the null hypothesis, the surname pair is categorized as dependent. We use the χ^2 calculations and define a firm as connected to a politician if any of the firm's board members' surnames and the politician's surname are defined as dependent by the feature selection method.

3.5 Sample Construction and Descriptive Statistics

The main analysis sample is restricted to the period 1987–2007. India substantially redrew its state electoral boundaries in 2008, making it difficult to map constituencies across the two boundary regimes consistently. For this period, the Prowess database consists of 31,018 unique firms. Since our experiment relies on a surname matching procedure, we drop 2,191 firms in Prowess (approximately 7% of the sample) that do not report any information about board members. We also drop 410 firms (1.3% of the sample) with missing industrial classification (NIC) data and 350 firms (approximately 1.1% of the sample) located in the union territories Chandigarh, Dadra and Nagar Haveli, and Daman and Diu as these territories have no independent legislative assemblies.

To merge firm and electoral constituency data, we combine the detailed geographical information about each firm's headquarters address and locate the headquarters coordinates using postal code geocoordinates from the GeoNames database. To locate firms within the pre-delimitation constituency boundaries, we use the headquarters geolocations and match firms to the bounding polygons of legislative constituencies for the relevant period.[22] For 13% of the sample (4,020 firms), the geographical data are missing, incomplete, or impossible to match with the legislative constituencies for the relevant period, and these firms are therefore dropped from our main analysis sample.

Figure 2 illustrates maps of India's legislative constituencies, where each marker represents a firm's geographical location. Panel (a) contains the 24,047 unique firms in

[21] The χ^2 statistic can be calculated at both a lower (e.g., city or postal code) and higher (e.g., state) geographical level. The choice of district reflects a trade-off between bias in surname matching and precision.

[22] The maps are provided by ML Infomap (http://www.mlinfomap.com).

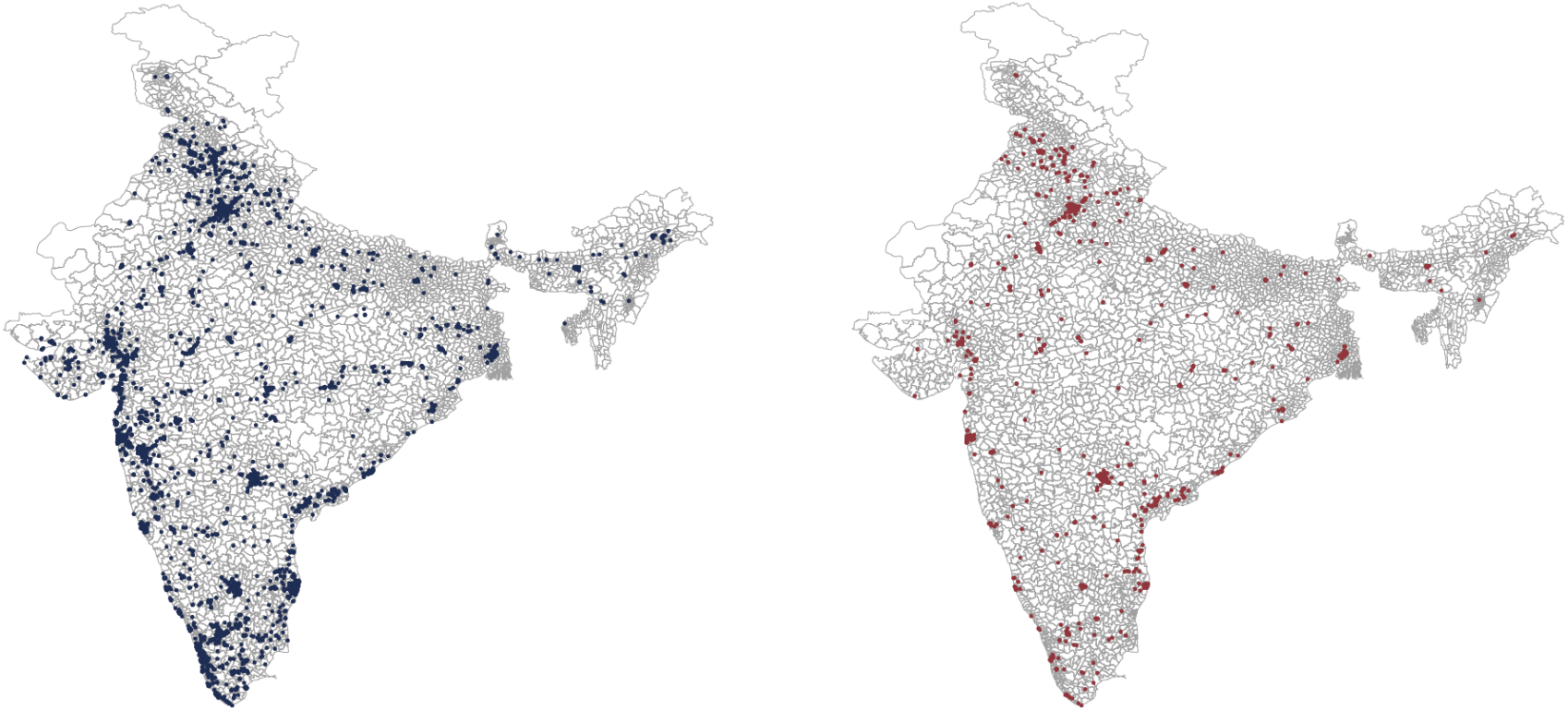
our main analysis sample. Panel (b) is restricted to the 2,193 firms that at some point in time were connected to either the winner or the runner-up politician, i.e., the analysis sample for our alternative empirical strategies (the RD and Diff-in-Disc designs).[23] The geographical distribution is largely the same in both samples. Firms are distributed virtually all over India, although there are clusters around larger cities.[24]

Appendix Table A1 reports summary statistics for the electoral data. Columns (1)–(3) show descriptive statistics for all winner and runner-up politicians in the constituencies where firms in the Prowess data are located. This sample contains 5,474 politicians, where 50% are winners (MLAs) by construction. In columns (4)–(6), we include only the 10% of the politicians in this sample who are defined as connected to at least one firm. On average, these politicians have a slightly higher margin of victory, reflecting that the connected sample consists of somewhat more winners (54%). As demonstrated in the last two columns, the two samples are similar in terms of political party representation, gender, incumbency, and alignment with the state-level government, suggesting that the connected sample is a valid representation of all politicians. However, connected politicians are represented to a lesser degree in constituencies reserved for SC/ST candidates, reflecting that board directors less frequently belong to these groups.

[23] We drop the 0.8% of firms coded as connected to both the winner and the runner-up politician since our experiment does not apply to these observations.

[24] Appendix Figure A.1 illustrates that the firms connected to the winner and those connected to the runner-up politicians are evenly distributed across sectors.

Figure 2: Prowess Firms and Constituency Boundaries



(a) All Firms

(b) Connected Firms

Notes: This figure is a map of Indian assembly constituencies in India's pre-delimitation period. The borders represent assembly constituencies, and each marker represents the location of a firm's headquarters. Panel (a) includes the full sample of firms (24,047 firms), and Panel (b) includes the sample of firms connected to either winner or runner-up politicians (2,193 firms).
Source: Constituency boundaries: ML Infomap.

Descriptive statistics for the firm-level data are reported in Appendix Table A2. Columns (1)–(3) report data for all firms, while columns (4)–(6) focus on the 6% of firms defined as connected to a winner *or* runner-up politician in their constituency. Approximately 60% of these 6% are connected to the winning politician. With the χ^2 definition of political connections, 15% of the firms are connected to a winner or runner-up politician, of which 62% are connected to the winning politician. The correlation between the two measures of political connections is 0.63. The average output and input tariffs are slightly lower in the full sample, which implies that firms with connections to the winner or runner-up politician belong to somewhat more protected industries than firms in the full sample. Moreover, connected firms are larger in terms of size, profit, and input factors but similar in terms of productivity. Among the firms in both samples, 90% are private firms owned by Indians. The table also presents summary statistics for the five most common surnames in the firm dataset.[25]

Finally, Appendix Figure A.2 shows the distributions of years in which firms are connected to the winning politician and years in which firms gain such connections. Both distributions are relatively stable over time.

4 Effects of Political Connections on Firm Performance

Before studying the impact of the trade liberalization on the value of political connections, we start by separately examining the returns to firms' political connections in this section. Estimating the causal effect of firms' political connections is important for understanding the implications of connections in our context and validating the surname measure of social proximity. Since a firm's connection status is likely not randomly assigned, the key empirical challenge is that firms with political connections might be systematically different from firms without such connections. We utilize two empirical approaches to address such endogeneity concerns: a DiD specification and a close-elections RD design.

The DiD design estimates the effect of connections across the full sample but assumes that no unobservable confounding factors vary over time. With the RD design, we relax this assumption but rely on a smaller sample and estimate a local treatment effect for firms in politically competitive constituencies. We can theoretically expect different results for such constituencies. If more political competition implies that the politician has less room to engage in favoritism, the RD estimates may be lower than the DiD estimates. However, if more competition instead induces the winning politician to not only favor connected firms but also penalize firms connected to the runner-up candidate, the RD

[25]The sample for which TFP data are available is smaller since calculating this measure requires data on firm inputs, for which we have less coverage. Similarly, we lack extensive panel data on total director remuneration. For this reason, these variables are not included in the most data-demanding parts of the analysis (i.e., in the RD and Diff-in-Disc designs). Definitions of all variables are provided in Appendix Table A3.

estimates may be relatively larger. Thus, using the two designs serves two purposes: (i) it allows us to investigate the robustness of our estimates, and (ii) it enables us to evaluate the external validity of competitive elections.

4.1 Empirical Strategy

We begin by estimating the following DiD specification:

$$y_{ikct} = \beta Connected_{ict} + \alpha_i + \gamma_t + \epsilon_{ikct}, \tag{1}$$

where y_{ikct} denotes different measures of firm size, profit or factors of production for firm i in industry k (at the 4-digit NIC level), constituency c and year t. $Connected_{ict}$ is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. When defining firms' connection status, we use the board composition of the year before the election to prevent endogenous adjustments. However, our results are not sensitive to this choice since boards of Indian firms are homogeneous in terms of social status and religion.[26] α_i and γ_t denote firm and year fixed effects, respectively, to account for time-invariant firm characteristics and common macroeconomic shocks. In robustness specifications, we control for constituency- and candidate-level covariates as well as industry-level linear time trends to account for underlying heterogeneity and industry-specific trends. Throughout the paper, the standard errors are two-way clustered at the constituency and industry level to account for serially correlated errors within constituencies and industries (Cameron and Miller, 2015; Abadie et al., 2017).[27]

The coefficient of interest is β, which measures the effect of connections to the politician who won the election (the MLA). For β to be identified, it is required that firms connected to the winning candidate would have had similar trends to firms without such connections in the absence of the election outcome. To relax this assumption, we also estimate an alternative specification that includes an additional dummy equal to 1 if a firm is defined as connected to either the winner *or* the runner-up politician in year t and 0 otherwise. In this alternative specification, β estimates the effect of connections to the winner *relative* to the effect of connections to the runner-up politician. The identifying assumption is then that firms connected to the winning candidate would not have had trends different from those of firms connected to the runner-up candidate in the absence of the election outcome.

[26] As discussed in Section 3.4, Bhagavatula et al. (2018) show that boards of Indian firms are overwhelmingly homogeneous. In Appendix Figure C.1, we validate this finding by showing that the share of directors connected to the winning politician within a constituency does not systematically increase after the election. This suggests that the variation in connection status is explained by the election outcome rather than by endogenous adjustments by firms.

[27] The results are robust to alternative two-way clustering of standard errors by industry and year or state and industry.

The parallel trends assumption cannot be formally tested, but it is possible to validate the assumption by studying trends in firm outcomes prior to the connection event. If there are no observable differences between connected and unconnected firms prior to firms gaining connections, it is more plausible that any post-connection difference can be attributed to connections with winning politicians. We study differences in firm outcomes before and after a connection event by estimating the following event study regression:

$$y_{ikct} = \sum_{j=-5, j\neq -1}^{5} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}, \tag{2}$$

where E_i is the year in which firm i gains a connection to a winning politician and j represents years relative to this event. The π_j coefficients estimate the effect of connections to a winning politician who is elected at time $t = E_i$ for years around the connection event. We follow standard practice and normalize the year before each event to zero, such that $\pi_{-1} = 0$. This means that each coefficient is interpreted as the difference in the outcome in comparison with the outcome the year before the connection status changes.

While different firms become connected at different periods in time, there exists a large control group in all periods. Thus, the under-identification issues discussed by, e.g., Borusyak et al. (2021), are not a concern. However, the treatment effects may be heterogeneous across time or firms, leading to a negative-weighting issue and biased estimates, as has been highlighted by a growing literature (de Chaisemartin and D'Haultfoeuille, 2020; Callaway and Sant'Anna, 2021; Goodman-Bacon, 2021; Sun and Abraham, 2021). Specifically, de Chaisemartin and D'Haultfoeuille (2020) show that in a setting when units switch in and out of treatment, linear regressions with period and group fixed effects estimate weighted sums of the average treatment effects (ATE) in each group and period, with weights that may be negative. Due to the negative weights, the linear regression coefficient may be negative while all the ATEs are positive, leading to a biased estimate. As suggested by de Chaisemartin and D'Haultfoeuille (2020), we estimate the weights used in the estimation of the average treatment effect. In our main specification, we find that 85% of the weights are strictly positive and 15% are negative. These negative weights sum to -0.0016, suggesting that their relative importance is limited.

4.1.1 A Close-Elections Regression Discontinuity Design

We complement the previous empirical strategy with an RD design to relax the assumption of no time-varying unobservable confounding factors. The RD design builds on the intuition that in close elections, the winning status of a politician can be considered as good as randomly assigned and compares firms connected to politicians who won and lost by a narrow margin (Imbens and Lemieux, 2008; Lee, 2008; Lee and Lemieux, 2010). Thus, the RD estimates a local treatment effect that is primarily valid for the sample of firms whose connection status was determined by a narrow margin.

To classify these close elections, we follow Lehne et al. (2018) and define the running variable, $Margin_{pce}$, as the margin of victory for politician p:

$$Margin_{pce} = \begin{cases} VoteShare_{ce}^{Winner} - VoteShare_{ce}^{Runner\text{-}up} & if \quad Winner_{pce} = 1 \\ VoteShare_{ce}^{Runner\text{-}up} - VoteShare_{ce}^{Winner} & if \quad Winner_{pce} = 0, \end{cases} \tag{3}$$

where $Winner_{pce}$ is a dummy variable equal to 1 if candidate p won election e in constituency c and 0 if the candidate came in second. $Margin_{pce}$ is positive (negative) if candidate p in constituency c won (lost) election e. We match the electoral results with the firm-level data. Firms connected to either the winner or the runner-up candidate are assigned the margin of their connected candidate. Thus, the RD analysis sample includes firms connected to either the winner or the runner-up politician.

We estimate the following (local linear) RD equation:

$$\begin{aligned} \Delta y_{ikce} = \theta_0 + \theta_1 Connected_{ice} + \theta_2 Margin_{pce} + \theta_3 Connected_{ice} \times Margin_{pce} \\ + \alpha_{se} + \varepsilon_{ikce} \quad \forall Margin_{pce} \in (-h, +h). \end{aligned} \tag{4}$$

As before, i denotes a firm, k denotes an industry, and c denotes a constituency. In this specification, we use the first difference of each firm outcome between election terms, e, as the dependent variable, Δy_{ikce}.[28] Taking the first difference contributes to precision and simplifies the comparison with the DiD results for the full sample of firms. $Connected_{ice}$ is a dummy variable taking the value of 1 if a firm is defined as connected to the winning candidate and 0 if the firm is connected to the runner-up candidate. We control for the running variable, $Margin_{pce}$, and the interaction $Connected_{ice} \times Margin_{pce}$ to allow for a different relationship between the outcome variable and $Margin_{pce}$ among firms connected to the winning and losing candidates. α_{se} is a state-by-election year fixed effect which is not necessary for identification but improves the efficiency of the estimates.[29] The coefficient of interest is θ_1, which estimates the causal effect of connections to the winning politician. In Appendix E, we discuss the identification assumptions necessary for estimating θ_1 and provide checks supporting that these assumptions are satisfied.

4.2 Results—Returns to Political Connections

We start by evaluating the identification assumption for the DiD design. Figure 3 shows the results from estimating Equation (2) on the set of outcome variables. Throughout, we

[28] Specifically, y_{ikce} denotes average yearly firm outcomes in each election term, e, since this is the level of variation in the running variable, $Margin_{pce}$. Thus, $\Delta y_{ikce} = y_{ikce} - y_{ikce-1}$ corresponds to the average growth rate between two election terms.

[29] In this specification, the identifying variation relies on cross-candidate rather than within-firm comparisons. Therefore, we do not include firm fixed effects.

find no evidence of differential pre-trends in the outcome variables before a firm gains a connection to the winning politician. This suggests that the parallel trends assumption is satisfied. Moreover, the figure illustrates a positive effect on firm performance, as measured by sales and total expenses as well as the use of input factors, at time $j > 0$, i.e., the years after firms gain connections. This implies that firms benefit from political connections. The positive effect appears immediately in the year after a firm becomes connected and remains throughout the 5-year length of an electoral term.

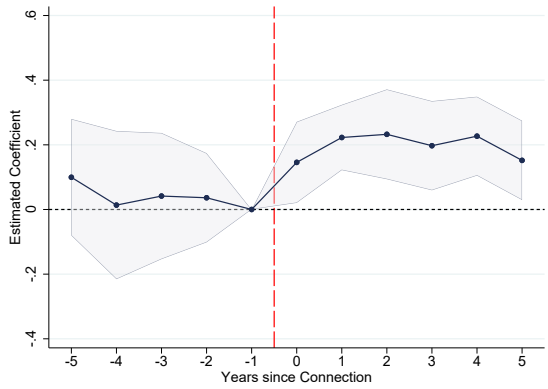
Table 1 reports the results from estimating Equation (1) using measures of firm performance as dependent variables. Panel A presents the main estimates, where the first three columns show the estimated effects of political connections on sales. In column (1), we find a positive effect of 0.110, which is statistically significant at the 1% level. This estimate implies that connections to the winning politician increase firms' sales by approximately 11% on average. Column (2) estimates the alternative specification (including a dummy variable equal to 1 if a firm is defined as connected to either the winner or the runner-up politician), which focuses the comparison on firms with connections to the runner-up politician. The estimate is similar in magnitude (0.12) but is slightly less precisely estimated. Column (3) includes control variables and industry-by-year fixed effects, which increase the precision of the estimates.[30]

Columns (4)–(9) in Table 1 estimate the effect of political connections on other measures of firm performance—total expenses and profit. Across specifications, the results suggest that political connections increase firms' total expenses by approximately 10%. Together with our findings on sales, this implies that politicians favor connected firms in a systematic way that stimulates their growth. However, we find no effect on profit. Consistent with our conceptual framework, the null effect may be interpreted as connected firms returning favors to politicians by, for instance, prioritizing increased employment rather than profit to increase politicians' reelection probabilities.

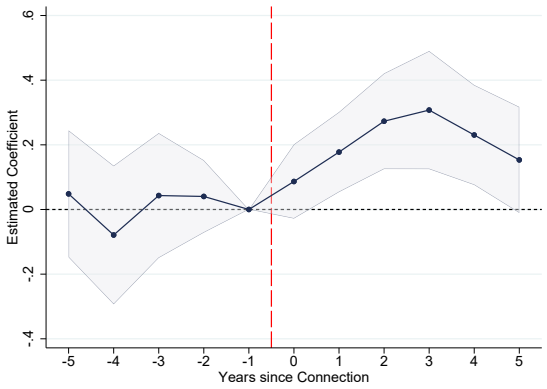
Panel B in Table 1 reestimates the regression using the χ^2 measure of political connections. The results are very similar across model specifications and outcome variables, but the coefficients are slightly smaller. This could result from a larger measurement error in the independent variable when we use the broader definition of connections. Moreover, as a result of the broader definition, the standard errors are smaller. Finally, Panel C presents the results estimated after we restrict the analysis to firms in the manufacturing sector since these are the firms of interest in the analyses of the trade reform. While the sample size is smaller, the coefficients are similar in magnitude to those in Panel A.

[30] Appendix Figures C.2a and C.3a show that the effect is not driven by firms in any individual manufacturing industry or state.

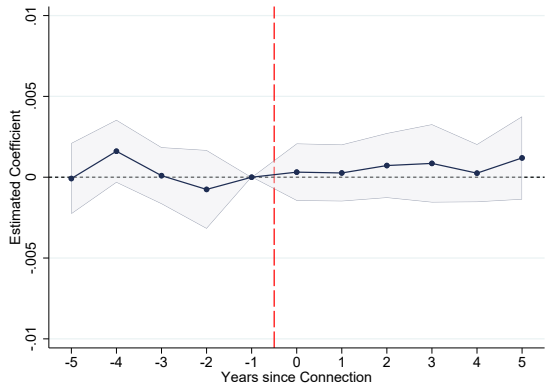
Figure 3: DiD Estimates—Dynamic Effects of Political Connections on Firm Outcomes



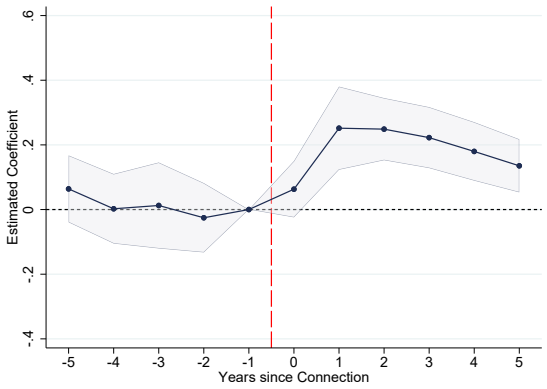
(a) Log Sales



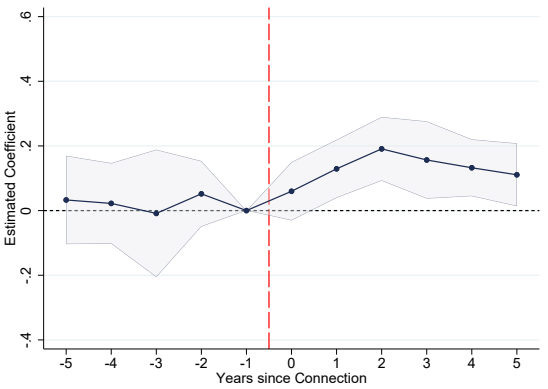
(b) Log Total Expenses



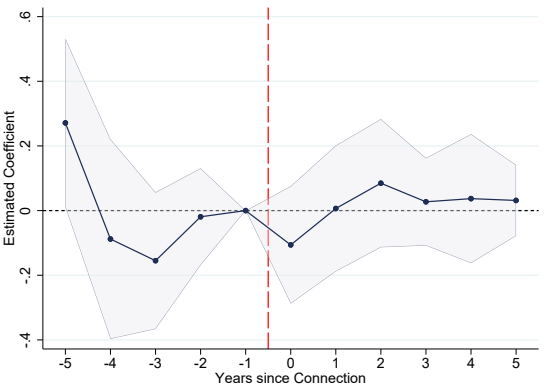
(c) Log Profit



(d) Log Capital



(e) Log Wage Bill



(f) Log Director Remuneration

Notes: This figure illustrates the dynamic impact of political connections and examines pre-trends by plotting estimates ($\hat{\pi}_j$s) from the regression $y_{ikct} = \sum_{j=-5, j\neq -1}^{5} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}$. We normalize the year prior to the election to 0. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

Table 1: Difference-in-Differences Estimates—Effect of Political Connections on Firm Size

	Log Sales			Log Total Expenses			Log Profit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: All Firms									
Connected	0.110***	0.120*	0.137**	0.114***	0.099**	0.104**	0.001	0.000	0.001
	(0.041)	(0.065)	(0.063)	(0.043)	(0.048)	(0.044)	(0.001)	(0.001)	(0.001)
Mean of Outcome	15.12	15.12	15.12	14.54	14.54	14.53	20.73	20.73	20.73
Observations	61,997	61,997	61,334	79,174	79,174	78,523	79,678	79,678	79,028
R^2	0.900	0.900	0.911	0.914	0.914	0.921	0.699	0.699	0.726
Panel B: All Firms – χ^2 Measure									
χ^2 Connected	0.073**	0.068**	0.075**	0.072***	0.056**	0.058**	-0.000	-0.001	-0.000
	(0.028)	(0.034)	(0.034)	(0.027)	(0.025)	(0.025)	(0.000)	(0.001)	(0.001)
Mean of Outcome	15.12	15.12	15.12	14.54	14.54	14.53	20.73	20.73	20.73
Observations	61,997	61,997	61,334	79,174	79,174	78,523	79,678	79,678	79,028
R^2	0.900	0.900	0.911	0.914	0.914	0.921	0.699	0.699	0.726
Panel C: Manufacturing Firms									
Connected	0.068	0.118*	0.110	0.096	0.126**	0.128**	0.002*	0.002	0.003*
	(0.043)	(0.071)	(0.068)	(0.065)	(0.057)	(0.055)	(0.001)	(0.001)	(0.001)
Mean of Outcome	16.03	16.03	16.03	15.95	15.95	15.95	20.73	20.73	20.73
Observations	31,266	31,266	30,942	32,534	32,534	32,218	32,564	32,564	32,248
R^2	0.892	0.892	0.904	0.890	0.891	0.901	0.668	0.668	0.722
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Industry × Year FE	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports the estimated effect of political connections on firm size outcomes, as specified by Equation (1). Panel A reports results for the full sample of firms, Panel B uses the alternative χ^2 definition of political connections, and Panel C restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable for each of the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of candidates who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

To clarify the mechanisms behind the positive effect on firm size, Table 2 reports the effect of political connections on productivity and inputs in the production function. Columns (1)–(3) show that there is no significant effect on productivity (TFP). However, columns (4)–(9) estimate that political connections increase capital and wages by approximately 10% each, which indicates that both factors of production contribute to the increase in firm size.[31] These estimates are in line with the findings by Akcigit et al. (2020) who show that politically connected firms in Italy eliminate regulatory burden and therefore grow more in revenue and labor even though they do not necessarily grow in productivity. Finally, columns (10)–(12) show that political connections have no effect on director compensation.

[31] Assuming a Cobb-Douglas production function with constant returns to scale, the effect of political connections on capital and labor fully adds up to the effect on firm size, which confirms the null effect on productivity.

Table 2: Difference-in-Differences Estimates—Effect of Political Connections on Firm Production

	Log TFP			Log Capital			Log Wage Bill			Log Dir. Remun.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: All Firms												
Connected	0.012	-0.010	0.000	0.099***	0.076**	0.092***	0.099***	0.103***	0.104***	0.002	0.043	0.041
	(0.019)	(0.022)	(0.025)	(0.036)	(0.034)	(0.034)	(0.028)	(0.029)	(0.024)	(0.046)	(0.072)	(0.070)
Mean of Outcome	0.64	0.64	0.64	15.30	15.30	15.30	12.37	12.37	12.36	9.97	9.97	9.98
Observations	29,760	29,760	29,470	84,200	84,200	83,541	70,612	70,612	69,951	27,074	27,074	26,471
R^2	0.931	0.931	0.938	0.933	0.933	0.939	0.932	0.932	0.939	0.831	0.831	0.845
Panel B: All Firms – χ^2 Measure												
χ^2 Connected	0.022	0.019	0.018	0.071***	0.050*	0.058*	0.084***	0.087***	0.079***	0.033	0.035	0.027
	(0.014)	(0.019)	(0.019)	(0.022)	(0.030)	(0.033)	(0.019)	(0.024)	(0.027)	(0.034)	(0.048)	(0.048)
Mean of Outcome	0.64	0.64	0.64	15.30	15.30	15.30	12.37	12.37	12.36	9.97	9.97	9.98
Observations	29,760	29,760	29,470	84,200	84,200	83,541	70,612	70,612	69,951	27,074	27,074	26,471
R^2	0.931	0.931	0.938	0.933	0.933	0.939	0.932	0.932	0.939	0.831	0.831	0.845
Panel C: Manufacturing Firms												
Connected	0.012	-0.010	0.000	0.055	0.057	0.089**	0.069*	0.112**	0.100*	0.002	0.009	0.020
	(0.019)	(0.022)	(0.025)	(0.046)	(0.044)	(0.044)	(0.038)	(0.047)	(0.053)	(0.052)	(0.074)	(0.073)
Mean of Outcome	0.64	0.64	0.64	16.04	16.04	16.04	13.22	13.22	13.22	10.23	10.23	10.24
Observations	29,760	29,760	29,470	33,251	33,251	32,937	31,597	31,597	31,279	13,759	13,759	13,421
R^2	0.931	0.931	0.938	0.928	0.928	0.935	0.926	0.926	0.934	0.847	0.847	0.863
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Industry × Year FE	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports the estimated effect of political connections on firm production outcomes, as specified by Equation (1). Panel A reports results for the full sample of firms, Panel B uses the alternative χ^2 definition of political connections, and Panel C restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of candidates who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Heterogeneity By Pre-Connections Status To explore heterogeneity in the returns to political connections, Appendix Figure B.1 reestimates the event study regression on sales for different subgroups of firms, depending on their pre-connection status.[32] The effect for firms that switched status from being unconnected to either the winner or the runner-up politician to being connected to the winner is very similar to the effect in the full sample of firms that gain connections. However, we find a substantially (almost four times) larger effect for firms that switch status from being connected to the runner-up politician to becoming connected to the winner. This suggests that these firms might be systematically different (e.g., have higher growth potential that is unleashed by having the right connections) or that firms connected to the runner-up politician are punished (e.g., by being actively opposed by the MLA). Moreover, while this group constitutes on average 12% of all connected firms, in close elections, they constitute a larger share (30% in elections where the winning candidate won by a margin of less than 2% and 20% when the margin is less than or equal to 5%). This supports the hypothesis that the estimated effects may differ in more competitive political races and suggests that the RD estimates are larger.

4.2.1 RD Results

Appendix Figure B.2 plots local linear RD regressions on outcome variables related to firm size and production.[33] The figure confirms the results from the DiD design, i.e., that firms in India benefit from political connections. In particular, we find positive and statistically significant discontinuities for sales and total expenses but no effect on profit. The effects on capital and wages are smaller, however, and not statistically significant.

Panel A in Appendix Tables B1 and B2 reports RD estimates using the optimal bandwidth as suggested by Calonico et al. (2014). Except for capital and wages, the RD estimates are substantially larger than the DiD estimates. This could mean that higher political competition induces the winning politician to favor connected firms more or penalize firms connected to the runner-up to a larger degree. We also know from Appendix Figure B.1 that the effect size is larger for the subgroup of firms that switch status from being connected to the runner-up politician to being connected to the winner, which constitutes a larger share in competitive races than in the full sample. However, the confidence intervals for the RD estimates are large, and the 99% confidence intervals include the DiD estimates, which suggests that we should not put too much weight on the particular point estimates. Panel B shows the estimates from using the χ^2 definition of political connections, which gives similar overall results but somewhat different point estimates and precision. Last, Panel C in these tables presents similar findings when

[32] The pattern is similar for total expenses, capital, and wages.

[33] As previously discussed, due to the limited coverage of TFP and director remuneration, these variables are not included in the RD analysis.

restricting the analysis to firms in the manufacturing sectors.

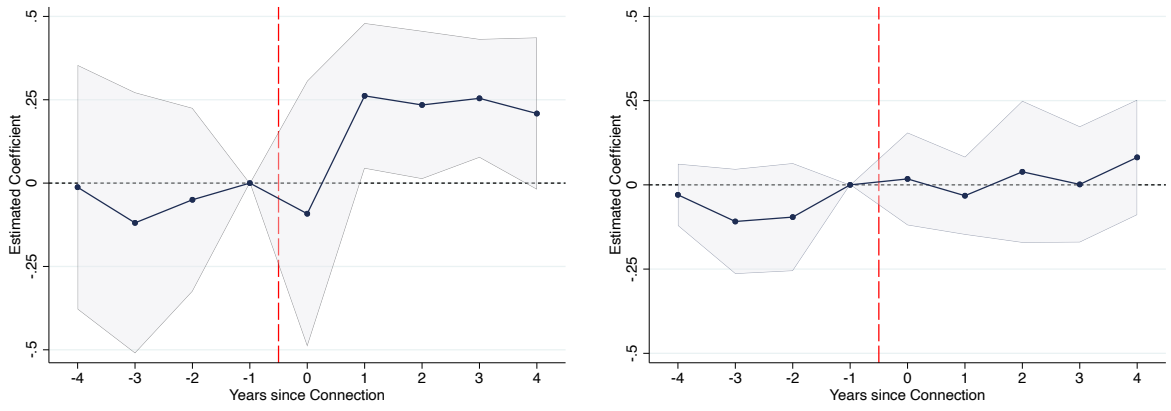
To verify that the RD results are robust to alternative bandwidth choices, we estimate Equation (4) for a range of different bandwidths and report the estimated coefficients on $Connected_{ice}$ for the full set of outcome variables in Appendix Figure C.4. The figure shows that the RD effects are stable for all but very small bandwidths.

Taken together, our findings show that firms benefit from political connections. The positive effect of political connections on firm size is driven by increased use of input factors rather than increased productivity. This suggests that the allocation of resources across firms depends on political connections and that the firm-specific wedges decline as firms gain connections. Thus, our results imply that politicians influence the allocation of resources across firms in favor of connected firms.

5 The Impact of Trade Liberalization on the Value of Political Connections

In this section, we turn to the primary focus of this paper, which is to study whether India's trade liberalization in the 1990s affected returns to political connections. To illustrate the intuition behind the design, we begin by estimating the effect of political connections on firm sales separately for the periods before and after the most intensive reduction in tariff rates. As shown in Figure 4, firms benefited substantially from connections before tariff reductions occurred. However, this positive effect disappeared entirely in the post-reform period.

Figure 4: Heterogeneous Effects of Political Connections on Sales, by Time Period



(a) Before Reform (1987–1993)

(b) After Reform (1995–2007)

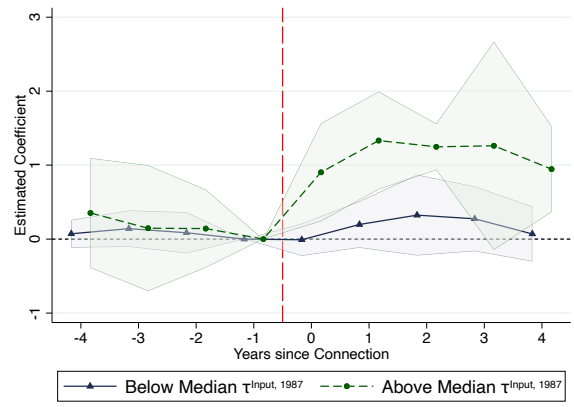
Notes: This figure illustrates the dynamic impact of political connections on (log) firm sales separately for the pre- and post-reform periods by plotting estimates ($\hat{\pi}_j$s) from the regression $y_{ikct} = \sum_{j,j\neq -1} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}$. The year prior to the election is normalized to 0. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

To more formally gauge whether these effects are related to tariff reductions, we reestimate the effect separately for firms in industries characterized by low and high baseline trade protection (as measured by the 1987 tariff rate). Since the industries that faced the largest tariff rates in 1987 also experienced the largest tariff reductions, we expect this group to face the largest change in returns to their connections if reduced trade protection matters for the value of connections.

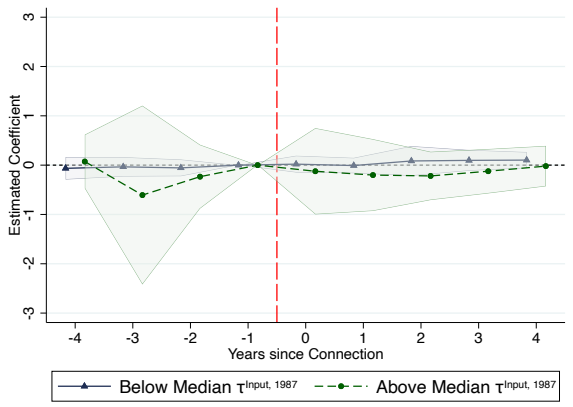
Figure 5 summarizes the estimations. In Panel (a), we estimate an event study equation for firms with above- and below-median input tariffs in the pre-reform period (1987–1993). Firms in industries with above-median input tariffs benefited from political connections in the pre-reform period, but there is no significant effect of connections for firms in below-median input tariff industries. Panel (b) reestimates the same equation for the post-reform period (1995–2007), with neither group seeming to be affected by political connections. The pattern suggests that firms in industries with high baseline input tariffs, i.e., firms that experienced higher tariffs on inputs used in their production, benefited from political connections. These benefits were no longer present after tariffs were reduced in the 1990s. As illustrated in Panels (c) and (d), we do not find any similar pattern when we use baseline output tariffs to define groups, which suggests that politicians do not primarily intervene in the output market.

Together, these figures illustrate differential returns to political connections before and after the trade liberalization and suggest that the value of political connections is indeed related to levels of trade protection. To estimate the average impact of these effects, we implement a triple-difference design and check robustness with a difference-in-discontinuities approach. As the tariff reductions primarily affected manufacturing industries, the analysis is restricted to firms within this sector.

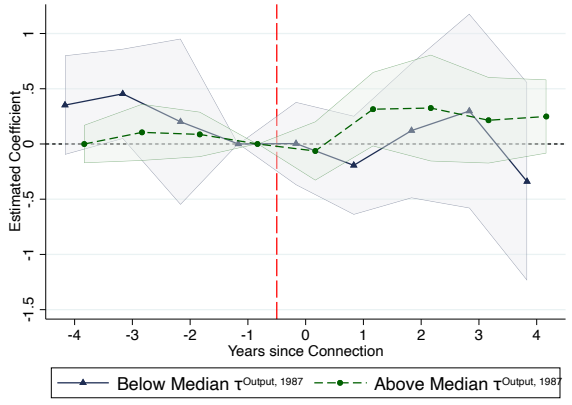
Figure 5: Heterogeneous Effects of Political Connections on Sales, by Time Period and Pre-Reform Trade Protection



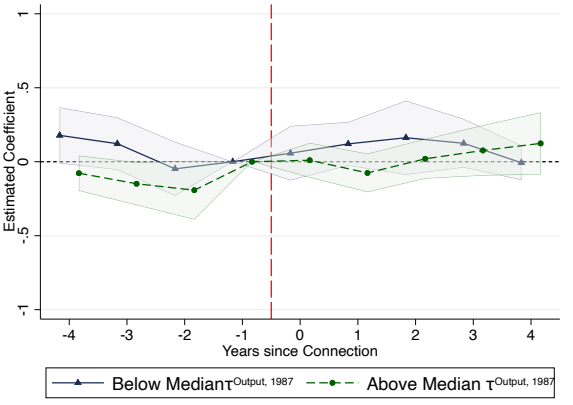
(a) By Input Tariff (1987–1993)



(b) By Input Tariff (1995–2007)



(c) By Output Tariff (1987–1993)



(d) By Output Tariff (1995–2007)

Notes: This figure illustrates the dynamic impact of political connections on (log) firm sales by time period and degree of pre-reform trade protection by plotting estimates ($\hat{\pi}_j$s) from the regression $y_{ikct} = \sum_{j,j\neq -1} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}$. The sample is split into firms in industries with tariffs below the median tariff level in 1987 and firms in industries with tariffs above the median tariff level in 1987. Panel (a) reports estimates for each of the two groups separately in the pre-period (1987–1993) and Panel (b) reports estimates for each of the two groups separately in the post-period (1995–2007) using input tariffs. Panel (c) and Panel (d) report the equivalent estimates when using output tariffs to split the sample. In all estimations, the year prior to the election is normalized to 0. 95% confidence intervals are used for inference, and standard errors are two-way clustered by industry and constituency.

5.1 Empirical Strategy

We begin by augmenting Equation (1) with tariff rates and estimate the following triple-difference regression:

$$
\begin{aligned}
y_{ikct} = {} & \rho_1 Connected_{ict} + \rho_2 \tau_{kt}^{Input} + \rho_3 \tau_{kt}^{Output} \\
& + \rho_4 (Connected_{ict} \times \tau_{kt}^{Input}) + \rho_5 (Connected_{ict} \times \tau_{kt}^{Output}) \\
& + \alpha_i + \gamma_t + \upsilon_{ikct}. \qquad (5)
\end{aligned}
$$

τ_{kt}^{Output} and τ_{kt}^{Input} denote demeaned output and input tariff rates for industry k in year t. The output tariff captures the effect of changed competition on firms' final product, while the input tariff captures the effect of changes in access to a firm's input products. In Section 4, we discussed the identifying assumptions underpinning a causal interpretation of firms' connections to the MLA, i.e., ρ_1. Moreover, in Section 2.1, we discussed the exogenous nature of India's trade liberalization, on which we rely for a causal estimation of ρ_2 and ρ_3. Appendix Table C1 confirms that the tariff changes were uncorrelated with pre-reform firm characteristics.[34]

In this specification, the coefficients of main interest are ρ_4 and ρ_5, which capture the differential effect of tariff changes on firms connected to the MLA relative to unconnected firms.[35] For ρ_4 and ρ_5 to be well identified, the relative effect of firms' political connections within industries would need to have remained unchanged in the absence of the tariff reductions. We validate this assumption by studying pre-trends in Section 5.2.[36]

5.1.1 A Difference-in-Discontinuities Approach

Following the previous discussion on the potential endogeneity in firms' political connection status, we extend the analysis by using a difference-in-discontinuities (Diff-in-Disc) design analogous to that in Grembi et al. (2016).[37] The design combines a DiD design (comparing the outcomes for firms with different tariff reductions) with a cross-sectional RD design (comparing outcomes for firms connected to a politician who just barely won to firms connected to a politician who just barely lost). The Diff-in-Disc model takes the following

[34] Khandelwal and Topalova (2011) argue that the differential tariff changes were exogenous to industry trends until 1997. Although a causal interpretation of ρ_2 and ρ_3 is not our main interest, we verify in Appendix Tables C2 and C3 that the results are robust to using a shorter time period when trade policy did not respond to pre-existing industry or firm-level trends and ρ_2 and ρ_3 can be interpreted causally.

[35] As in Section 4, we also estimate the effect when focusing the comparison on firms with connections to the winning politician (the MLA) and firms with connections to the runner-up politician. This is done by including an additional dummy variable equal to 1 if a firm is defined as connected to either the winner or the runner-up politician in year t and 0 otherwise as well as the interaction between this dummy variable and τ_{kt}^{Output} and τ_{kt}^{Input}.

[36] In robustness specifications, we also include connected-by-industry fixed effects and a connected-specific linear trend to account for time-invariant industry-treatment effects and treatment-specific time trends. Moreover, we report the results from using the χ^2 measure of political connections. These results are presented in Appendix Tables C4–C7 and corroborate the main findings.

[37] See also Bazzi et al. (2020) and Eggers et al. (2018) for further applications of the Diff-in-Disc design.

form:

$$
\begin{aligned}
y_{ikct} = {} & \omega_0 + \omega_1 Margin_{pce} + Connected_{ict}(\omega_2 + \omega_3 Margin_{pce}) \\
& + \tau_{kt}^{Output}[\omega_4 + \omega_5 Margin_{pce} + Connected_{ict}(\omega_6 + \omega_7 Margin_{pce})] \\
& + \tau_{kt}^{Input}[\omega_8 + \omega_9 Margin_{pce} + Connected_{ict}(\omega_{10} + \omega_{11} Margin_{pce})] \\
& + \eta_{ikct} \quad \forall Margin_{pce} \in (-h, +h),
\end{aligned} \tag{6}
$$

where the notation is as previously defined. As in Equation (4), the sample is restricted to firms connected to either winner or runner-up politicians, and $Connected_{ict}$ is a dummy variable equal to 1 if a firm is connected to the winning candidate and 0 otherwise. The difference from the RD design is the inclusion of input tariffs (τ_{kt}^{Input}) and output tariffs (τ_{kt}^{Output}), which are estimated separately on each side of the threshold and fully interact with $Connected_{ict}$ and $Margin_{pce}$. The main coefficients of interest are ω_6 and ω_{10}, which estimate the differential returns to political connections for different levels of tariff rates.

In this design, identification rests on two assumptions. First, pre-determined confounding factors should vary smoothly across the threshold as in a standard RD setting, which we verify in Appendix E. Second, firms just above and just below the threshold would need to have followed parallel trends in the absence of the trade liberalization. To indirectly test this assumption, Appendix Figures E.1b and E.1c show that the density of the running variable is continuous at the threshold over time—suggesting that connected politicians are not more likely to win close races neither before nor after the liberalization. Moreover, in Section 5.2, we investigate whether there were differential trends in returns to connections before the liberalization for the full sample of firms.[38] Together, these checks validate that the Diff-in-Disc design identifies the average treatment effect of tariff changes on the value of political connections in close elections.

5.2 Results—Impact of Tariff Reductions on the Returns to Political Connections

Table 3 presents the results from estimating the triple-difference specification, Equation (5), on firm size and profit.[39] Our main interest in this specification is to study how tariff reductions affected the returns to political connections. This effect is captured by the interaction terms $Connected_{ict} \times \tau_{kt}^{Input}$ and $Connected_{ict} \times \tau_{kt}^{Output}$. Column (1)

[38] Due to a smaller sample size, performing this exercise for the sample of firms in close vicinity to the threshold yields similar but imprecise estimates.

[39] In this specification, the effect of political connections is measured at the mean level of tariffs (since the tariff variables are demeaned). The estimates are similar to the DiD results reported in Table 1 but are less precise. The independent effect of output tariffs is overall very small and insignificant. The independent effect of input tariffs is also small and rarely statistically significant. The negative coefficients suggest that the reductions in input tariffs during the trade liberalization are, on average, positively associated with firm size. Note that in the third column of each outcome variable, we include industry-specific time trends, which reduce the variation in input and output tariffs.

reports the effect on sales. The coefficient on the interaction $Connected_{ict} \times \tau_{kt}^{Input}$ is 0.005 and is statistically significant at the 1% level. This implies that a one percentage point reduction in input tariffs decreased sales for politically connected firms by 0.5%. This is a sizable effect. Since firms in our sample experienced an input tariff reduction of approximately 20 percentage points on average, sales of politically connected firms were reduced by approximately 10%. Put differently, the returns to political connections fell by approximately 10 percentage points.

The interaction between connections and the output tariff shows no significant effects. The null effect may either imply that increased competition has no effect on the value of connections or that politicians do not primarily intervene in the output market. Our previous finding that firms in industries with high output tariffs in the pre-reform period did not systematically benefit more from connections is evidence for the latter interpretation.

In column (2), we focus the comparison on firms connected to the runner-up politician. The estimate on $Connected_{ict} \times \tau_{kt}^{Input}$ remains positive but is approximately three times larger. The larger magnitude implies that the choice of control group matters for this estimate. Specifically, the input tariff reductions benefit firms connected to the runner-up relatively more, which drives this larger magnitude. Finally, column (3) includes control variables and industry-specific time trends, which slightly increases the estimates' precision.[40] In columns (4)–(9), we estimate the effects of tariff reductions on the returns to political connections in terms of total expenses and profit. Throughout, there are no effects of the output tariff. However, the input tariff has a substantial impact on the value of political connections in terms of total expenses. In our main specification, a 1 percentage point reduction in input tariffs decreases total expenses for politically connected firms by 0.5%. In line with the findings in Section 4, we find no effects on firm profit.

Table 4 reports the results from estimating the triple-difference specification on productivity, capital, and wages. We find that input tariff reductions substantially lower the value of political connections in terms of capital and wages. There are no effects in terms of productivity. Moreover, we find no effects of output tariff reductions on the returns to political connections across these outcomes.[41]

[40] In Appendix Figures C.2 and C.3, we further show that the effect is not driven by firms in any specific industry or state.

[41] Appendix D reports the results of a series of tests that investigate whether data reporting and attrition are related to firms' political connections and tariff reductions. Appendix Tables D1–D2 show that firms' connection status does not affect the probability of missing data or the probability of leaving the sample. Appendix Tables D3–D6 report results when using a balanced sample of firms. The results are similar to the estimates in the analysis sample but less precise.

Table 3: Triple Differences Estimates—Effect of Political Connections and Tariff Reductions on Firm Size

	Log Sales			Log Total Expenses			Log Profit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected $\times$ τ_{kt}^{Input}	0.0052***	0.016***	0.017***	0.0051***	0.013***	0.014***	0.000071	-0.000030	-0.000034
	(0.00045)	(0.0039)	(0.0040)	(0.0019)	(0.0038)	(0.0035)	(0.00012)	(0.00010)	(0.000093)
Connected $\times$ τ_{kt}^{Output}	0.00038	0.000034	-0.00040	0.00071	0.00058	-0.00015	-0.000044	-0.000050*	-0.000049*
	(0.0011)	(0.0017)	(0.0017)	(0.0013)	(0.0017)	(0.0015)	(0.000033)	(0.000029)	(0.000027)
Connected	0.053	0.091	0.091	0.079	0.099*	0.12**	0.0023*	0.0025*	0.0031**
	(0.042)	(0.067)	(0.063)	(0.061)	(0.057)	(0.053)	(0.0014)	(0.0015)	(0.0015)
τ_{kt}^{Input}	-0.0077***	-0.0076**	0.0014	-0.0056	-0.0055	-0.0038	-0.00029	-0.00030	0.00012
	(0.0029)	(0.0029)	(0.0045)	(0.0034)	(0.0035)	(0.0035)	(0.00021)	(0.00021)	(0.000074)
τ_{kt}^{Output}	0.00093	0.00098	-0.00067	-0.00038	-0.00034	-0.00056	0.000023	0.000022	-0.000026
	(0.0015)	(0.0015)	(0.00089)	(0.0015)	(0.0015)	(0.00088)	(0.000024)	(0.000024)	(0.000022)
Mean of Outcome	16.03	16.03	16.03	15.96	15.96	15.96	20.73	20.73	20.73
Observations	30,887	30,887	30,887	32,140	32,140	32,140	32,170	32,170	32,170
R^2	0.892	0.892	0.897	0.890	0.890	0.895	0.670	0.670	0.707
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Industry Trend	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports estimates of how tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5). The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of candidates who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

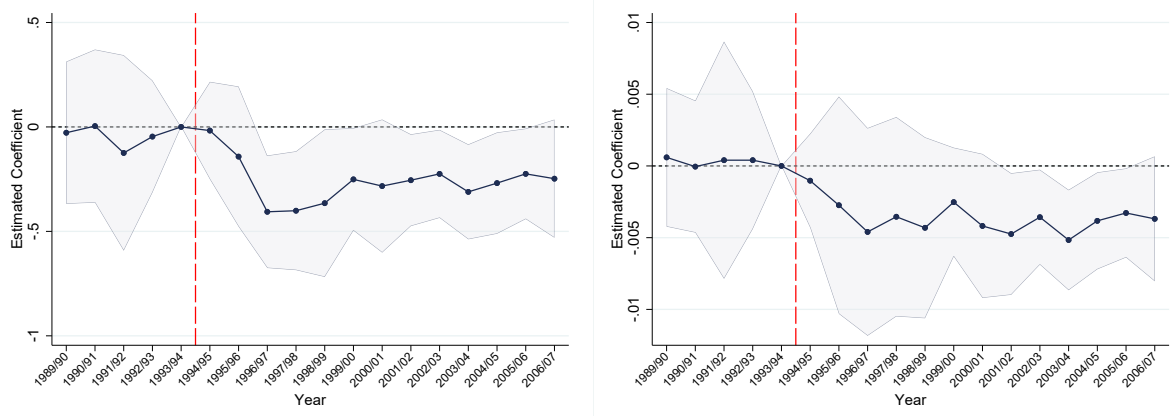
Table 4: Triple Differences Estimates—Effect of Political Connections and Tariff Reductions on Firm Production

	Log TFP			Log Capital			Log Wage Bill		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected × τ_{kt}^{Input}	-0.00013	-0.0011	-0.00035	0.0062***	0.0086***	0.0087***	0.0029**	0.011***	0.011***
	(0.0013)	(0.0021)	(0.0023)	(0.0019)	(0.0028)	(0.0028)	(0.0012)	(0.0029)	(0.0033)
Connected × τ_{kt}^{Output}	0.00038	0.00058	0.00063	-0.0012	-0.000038	-0.00071	0.00020	-0.00063	-0.0014
	(0.00057)	(0.00060)	(0.00060)	(0.00075)	(0.0015)	(0.0014)	(0.00078)	(0.0014)	(0.0012)
Connected	0.0094	-0.014	-0.0023	0.047	0.046	0.071*	0.063*	0.099**	0.090**
	(0.020)	(0.022)	(0.022)	(0.045)	(0.045)	(0.042)	(0.034)	(0.043)	(0.044)
τ_{kt}^{Input}	0.0021	0.0022	0.0044	-0.0077***	-0.0078***	-0.0051**	-0.0056	-0.0055	-0.0036
	(0.0015)	(0.0015)	(0.0028)	(0.0021)	(0.0022)	(0.0021)	(0.0037)	(0.0037)	(0.0033)
τ_{kt}^{Output}	-0.00067	-0.00066	-0.00063	0.0018*	0.0020*	0.00049	-0.00022	-0.00025	0.000077
	(0.00088)	(0.00092)	(0.00057)	(0.0011)	(0.0011)	(0.00091)	(0.00096)	(0.0010)	(0.00080)
Mean of Outcome	0.63	0.63	0.63	16.04	16.04	16.04	13.22	13.22	13.22
Observations	29,552	29,552	29,552	32,853	32,853	32,853	31,219	31,219	31,219
R^2	0.931	0.931	0.933	0.929	0.929	0.932	0.926	0.926	0.930
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Industry Trend	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports estimates of how tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5). The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of candidates who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Pre-Trends and Dynamic Impacts To evaluate the identifying assumption of the triple-difference design, we create yearly indicator variables for the periods before and after the trade reform and interact these with firms' connection status. Figure 6 reports the relative effect of political connections by year. Panel (a) shows no evidence of differential trends for connected firms before the trade reform. The lack of differential pre-trends in the returns to connections validates our identifying assumptions. The figure also shows that the returns to connections fell considerably after the most intensive period of the reform (1993). In Panel (b), we interact the yearly indicator variables with firms' connection status and the baseline (1987) input tariff rate. We find that the baseline level of trade protection, and thus exposure to tariff reductions, had no differential effect on the returns to connections before the reform was adopted.

Figure 6: Triple-Difference Design—Pre-Trends and Dynamic Impacts



(a) Returns to Connections by Year

(b) Returns to Connections by Year and Baseline Input Tariff

Notes: This figure shows the impact of the trade liberalization on returns to political connections. Panel (a) plots the $\hat{\pi}_t$ coefficients from the regression $y_{ikct} = \beta Connected_{ict} + \sum_{t=1989, t\neq 1993}^{2006} \pi_t \mathbb{1}(year = t) \times Connected_{ict} + \alpha_i + \gamma_t + \epsilon_{ikct}$. Panel (b) augments this regression with the baseline (1987) input tariff rate and plots the interaction between being observed t years before or after the reform, the baseline input tariff rate, and being connected. The dependent variable is the log of sales. 1993 is normalized to 0. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

Simultaneous Policies As mentioned in Section 2.1, the Indian trade liberalization was a part of an IMF adjustment program that also included other reforms. Concurrent with the tariff reductions, the Indian government implemented a substantial delicensing reform and relaxed rules for foreign direct investment to boost domestic competition (Khandelwal and Topalova, 2011). Since these industry-level reforms may also have affected firms' dependence on political connections, a potential worry is that they might confound our main results.[42] To account for this concern, we reestimate Equation (5) and

[42]Note that other concurrent reforms, such as amendments of labor market regulations, took place at

include dummies for whether industry k was delicensed or experienced an FDI reform in year t as well as interactions of these variables with political connections. The results are presented in Appendix Tables C8 and C9. The interaction between input tariffs and political connections is insensitive to the inclusion of these controls. Moreover, the effects of the other reforms are not statistically significant. However, this does not necessarily imply that the delicensing and FDI reforms had no implications for firms' political connections in general. Rather, it suggests that they did not affect the value of political connections as we define them, i.e., firms' connections to local politicians (MLAs). This might not be surprising, as, for instance, industrial licensing was controlled by the central government (Aghion et al., 2008).

5.2.1 Diff-in-Disc Results

To illustrate the intuition behind the Diff-in-Disc design, we start by plotting the effect of political connections separately for the periods before and after the most intensive tariff rate reductions. Panel (a) in Appendix Figure B.3 plots the value of sales for firms connected to the runner-up (i.e., below the threshold) and winner (i.e., above the threshold) in the pre-reform period. Specifically, the returns are plotted separately for firms in industries with an above- and below-median input tariff rate. Panel (b) presents the same illustration for the post-reform period, and Panels (c)–(d) redo the exercise using the median output tariff to split the sample. While this figure provides intuition, it only approximates the identifying variation in the regression results reported in subsequent tables, as our estimating equation uses the full continuous variation in tariffs.

Panel (a) shows positive discontinuities for the pre-reform period for both groups of firms but illustrates that the effect is larger for firms in the above-median input tariff group. This confirms that firms in industries facing larger trade protection on inputs used in their production benefit relatively more from political connections in terms of sales. Panel (b) shows that the difference in discontinuities is reduced substantially for the post-reform period. Panels (c)–(d) show similar results when output tariffs are used. Overall, the figures confirm a reduction in the value of political connections when tariffs are reduced.

Appendix Table B3 reports the results from estimating Equation (6) on outcomes related to firm size and profit with the optimal bandwidth (Calonico et al., 2014). We find precisely estimated positive effects of the interaction of input tariffs and political connections ($Connected_{ict} \times \tau_{kt}^{Input}$) on sales and total expenses but no effect on profit. Appendix Table B4 presents the results when capital and wages are used as outcome variables, where the findings are similar. Thus, the Diff-in-Disc estimates support that the reduction in input tariffs decreases the value of political connections.

the state level and therefore do not confound our estimates (Besley and Burgess, 2004).

To investigate the sensitivity of the Diff-in-Disc estimates, Appendix Figures C.5 and C.6 plot the estimated coefficients for $Connected \times \tau_{kt}$ across a range of different bandwidths. Appendix Figure C.5 shows that our main findings on the effects of the input tariff are stable across bandwidths. However, Appendix Figure C.6 shows that the estimated effect of the output tariff is sensitive to the choice of bandwidth and varies in statistical significance. We are therefore reluctant to interpret the estimated effects of the output tariff in the Diff-in-Disc estimations.

In sum, we find that the reductions in tariffs during India's trade liberalization substantially reduced the value of political connections and that reductions in input tariffs drive these effects. This suggests that increased access to input goods acts as a substitute for favors from politicians and implies that the trade liberalization had a direct impact on the distortionary effects of political connections.

5.3 Heterogeneity Analysis: Political Connections and Corruption

The impact of the trade liberalization on the distortionary effects of political connections may vary across geographic areas with different levels of baseline distortions. For instance, some Indian states are considered relatively more corrupt than others. If corruption means that politicians can exert more discretion in favoring firms through connections, the impact of trade liberalization may be more pronounced in these states. To investigate this line of heterogeneity, we use an indicator variable, $BIMARU$, to denote firms located in the states of Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh, which are commonly singled out for corruption and dysfunction (Fisman et al., 2014, 2019). To study the differential impact of tariff reductions on the returns to political connections in these states, we fully interact Equation (5) with the $BIMARU$ indicator.

Appendix Table B5 presents these estimations when using sales as the outcome variable. Although imprecisely estimated, we find suggestive evidence that the average effect of political connections is larger for firms located in $BIMARU$ states. Moreover, these firms experience a larger reduction in the value of connections as input tariffs are reduced during the trade liberalization. The point estimate on the interaction of connections, input tariffs, and the $BIMARU$ indicator is 0.025 (significant at the 1% level), suggesting that the effect is more than twice as large in more corrupt states.

6 Mechanisms behind the Input Channel

Throughout the paper, we find that reductions in *input tariffs* diminish the value of political connections. A natural question is whether the results are explained by (i) politicians helping connected firms import when tariffs are high or (ii) politicians helping connected firms by intervening in the local market (e.g., helping connected firms overcome regulatory or bureaucratic burdens, working around existing red tape, intervening in

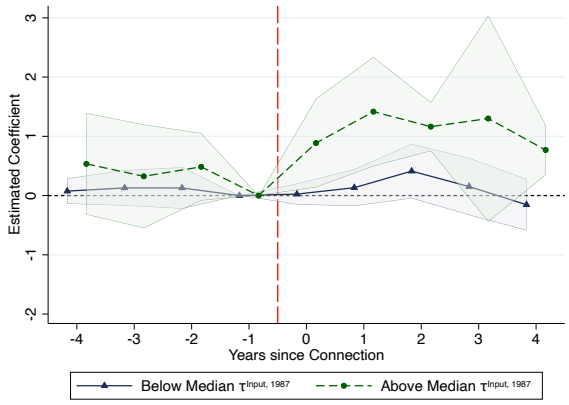
the allocation of contracts or introducing additional costs and hassles for unconnected firms). In the first case, tariff reductions may reduce the dependence on connections since importing becomes easier and cheaper. In the second case, tariff reductions may decrease the dependence on connections since firms can circumvent local frictions by increasing imports.

Figure 7 examines these two potential mechanisms by illustrating differences in firm outcomes before and after a connection event, as specified in Equation (2). Panels (a)–(b) illustrates the effect of political connections on firms' intermediate inputs. Panel (a) shows that firms in industries with above-median input tariffs substantially increased their use of intermediate inputs when they became politically connected in the pre-reform period. There is no similar effect for firms in industries with below-median input tariffs. Moreover, as illustrated in Panel (b), there is no effect for neither group in the post-reform period when tariffs have been reduced. Panels (c)–(f) illustrate the effect of political connections on firms' import. When firms in industries with above-median input tariffs became politically connected in the pre-period, they imported less. This is true in terms of both the total import value (see Panel (c)) and the share of inputs imported (see Panel (e)). Again we find no similar effect for firms in industries with below-median input tariffs or in the post-reform period.[43]

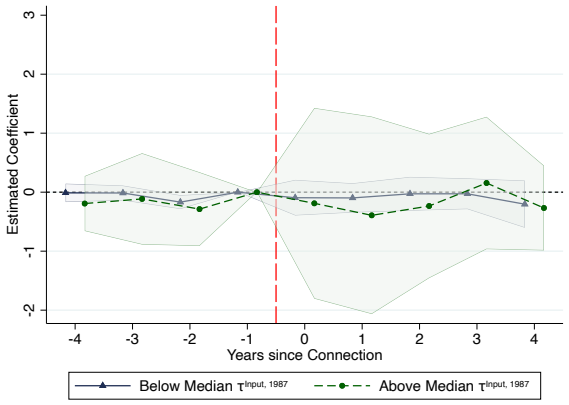
The results suggest that in industries facing higher tariffs, political connections increase firms' use of intermediate inputs but that this is not driven by politicians helping connected firms import. Rather, connected firms are less dependent on imports when input tariffs are high. These findings are only suggestive but support the hypothesis that politicians intervene to facilitate access to necessary inputs and services in the local market. When tariffs are high, and outside options are more expensive, local politicians have larger scope to intervene in favor of connected firms. Better access to imports, through reduced tariffs, provides an outside option to political connections, which decreases the value of such connections.

[43]Due to lower coverage on import data (see Appendix Table A2), the event study specification is restricted to 3 years before and 3 years after a connection event for the import variables.

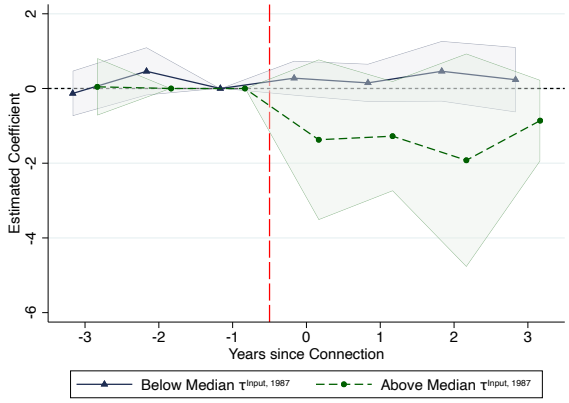
Figure 7: Mechanisms—Effects of Political Connections on Intermediate Inputs and Import, by Time Period and Pre-Reform Trade Protection (Input Tariff)



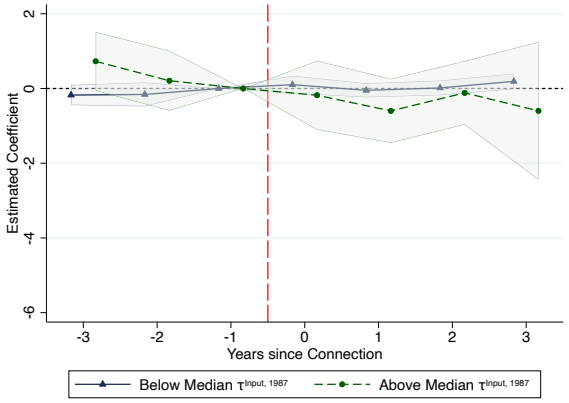
(a) Log Intermediate Inputs: Pre-Reform



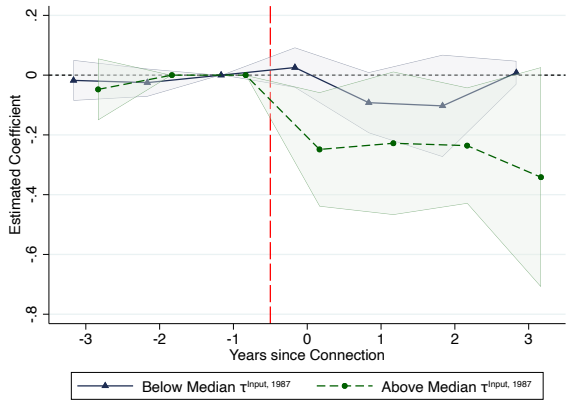
(b) Log Intermediate Inputs: Post-Reform



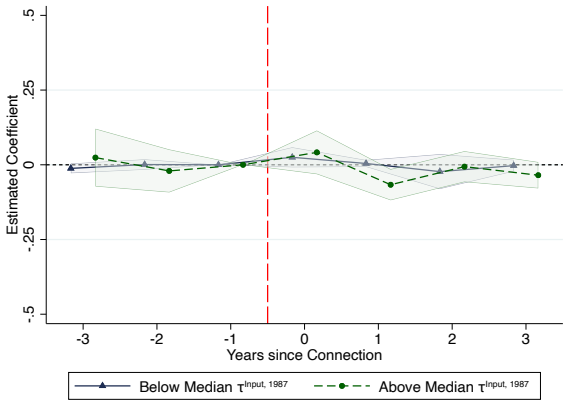
(c) Log Imports: Pre-Reform



(d) Log Imports: Post-Reform



(e) Log Share of Inputs Imported: Pre-Reform



(f) Log Share of Inputs Imported: Post-Reform

Notes: This figure illustrates the effect of political connections by plotting estimates ($\hat{\pi}_j$s) from the regression $y_{ikct} = \sum_{j,j\neq -1} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}$. The sample is split into two groups of firms: firms in industries with below-median tariffs in 1987 and firms in industries with above-median tariffs in 1987. The year prior to the election is normalized to 0. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

7 Conclusion

Are political distortions more or less harmful in a more open economy? In this paper, we shed light on this question by studying the impact of India's trade liberalization of the 1990s on the distortionary effects of firm-specific political connections. We use a broad definition of political connections based on whether firms' board members and the local representative in the state parliament belong to the same social community and investigate how the value of firms' political connections was affected by the trade liberalization.

First, exploiting variation in firms' political connections stemming from election outcomes, we show that firms benefit from political connections. After firms gain a connection to a winning politician, there is a sizable (10–20%) positive impact on outcomes related to firm size, such as sales and total expenses. The increase in firm size is driven by increased use of both capital and labor. Second, we find that the reductions in tariffs during India's trade liberalization substantially decreased the value of political connections (by approximately 10 percentage points). We demonstrate that this effect is driven by reductions in tariffs on the input goods used in firms' production (i.e., input tariffs). Our findings imply that access to international markets reduces firms' dependence on political connections to source input goods, thus reducing the distortionary effect of such connections. By exploiting heterogeneity across geographic areas, we find that these effects are stronger in more corrupt states, where baseline political distortions are expected to be higher.

Taken together, our results suggest a new margin for gains from trade in the presence of political distortions through a direct effect of trade liberalization on the prevalence of such distortions.

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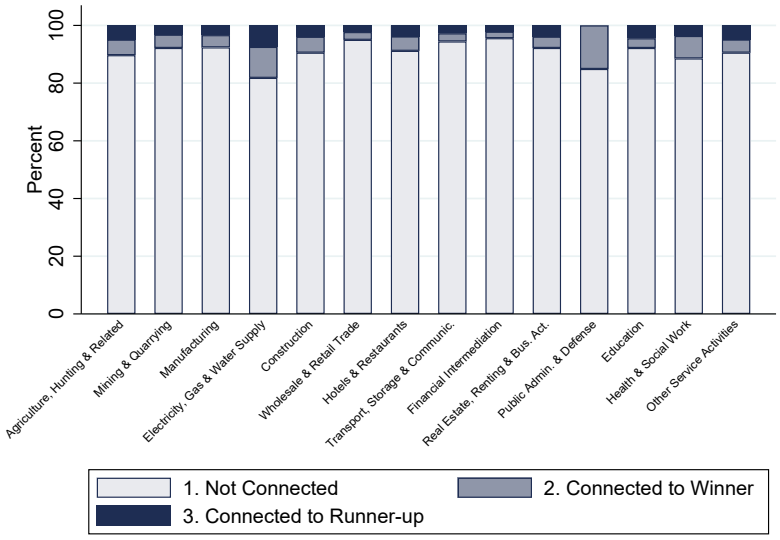
Appendix

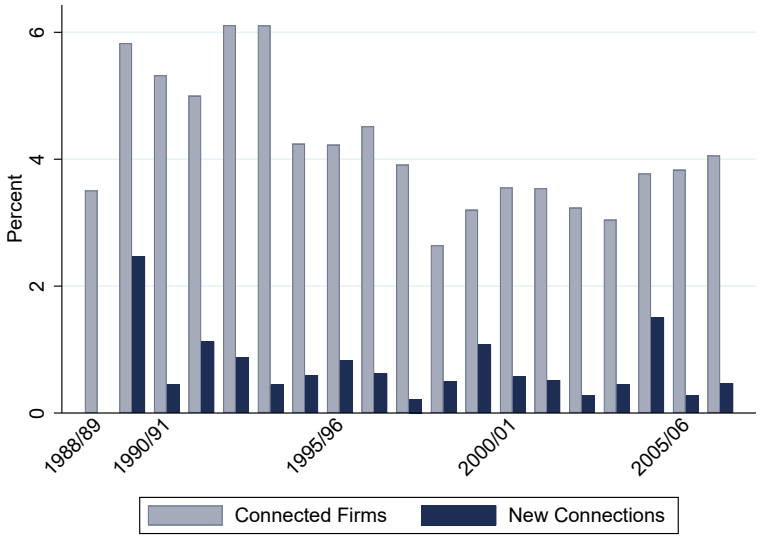
A Data Description and Variable Definitions

Figure A.1: Distribution of Connections by Sector



Notes: This figure shows the distribution of firms' connection status by sectors (the 1-digit NIC level).

Figure A.2: Distribution of Connections by Year



Notes: This figure shows the distribution of years in which firms gain connections to the winning politician. "Connected firms" reports the total share of firms that are connected to the winning politician (in percent), while "New Connections" reports the share of firms gaining connection that specific year (in percent).

Table A1: Summary Statistics—Elections and Politicians

	All Politicians			Connected Politicians			Difference	
	Mean	S.D.	Obs.	Mean	S.D.	Obs.	Mean Diff.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Winner	0.500	0.500	5,474	0.536	0.499	547	-0.040	0.079
Margin	0.000	0.182	5,474	0.012	0.176	547	-0.013	0.104
Incumbent	0.220	0.415	5,474	0.219	0.414	547	0.001	0.947
Prior Runner	0.321	0.467	5,474	0.340	0.474	547	-0.021	0.319
Female	0.071	0.256	5,474	0.060	0.238	547	0.012	0.319
Aligned Candidate	0.471	0.499	5,474	0.453	0.498	547	0.020	0.376
INC Candidate	0.320	0.466	5,474	0.342	0.475	547	-0.025	0.237
BJP Candidate	0.191	0.393	5,474	0.194	0.396	547	-0.003	0.884
SC/ST Reserved	0.154	0.361	5,474	0.097	0.296	547	0.064	0.000
Contestants	10.304	6.158	5,474	9.909	5.677	547	0.439	0.114
Turnout	0.628	0.109	5,474	0.629	0.119	547	-0.001	0.843

Notes: This table reports descriptive statistics of the electoral data from the SHRUG project (Asher et al., 2019; Jensenius and Verniers, 2017) for the period 1987–2007. "All Politicians" refers to the sample of winner and runner-up candidates in constituencies which can be spatially matched to Prowess firms. "Connected Politicians" refers to the sample of politicians who are defined as connected to at least one firm by our surname matching methodology.

Table A2: Summary Statistics—Firms

	All Firms			Connected Winner/Runner-up		
	Mean (1)	S.D. (2)	Obs. (3)	Mean (4)	S.D. (5)	Obs. (6)
Connected	0.04	0.19	116,612	0.59	0.49	7,359
Connected Winner or Runner-up	0.06	0.24	116,612	1.00	0.00	7,359
χ^2 Connected	0.10	0.29	116,612	0.62	0.49	7,359
χ^2 Connected Winner or Runner-up	0.15	0.36	116,612	1.00	0.00	7,359
τ_{kt}^{Output}	31.81	22.37	44,391	34.15	29.02	3,078
τ_{kt}^{Input}	14.49	11.44	44,414	15.99	12.96	3,086
$\Delta\tau_{kt}^{Output}$	-46.54	21.40	44,391	-45.83	23.38	3,078
$\Delta\tau_{kt}^{Input}$	-21.82	12.63	44,414	-22.64	12.00	3,086
Sales	52.10	570.69	64,401	59.43	365.56	4,890
Total Expenses	45.12	505.09	82,135	52.25	293.13	5,784
Profit	3.13	47.31	82,573	5.53	79.78	5,793
TFP	0.64	1.21	30,507	0.65	1.22	2,399
Capital	104.71	1457.83	87,306	127.10	1051.01	6,151
Wage Bill	3.89	35.31	73,118	5.22	35.39	5,352
Total Director Remuneration	0.09	0.36	29,448	0.11	0.40	2,497
Intermediate Inputs	31.81	446.19	61,760	30.09	143.60	4,682
Import	18.17	333.02	29,410	12.98	81.53	2,327
Share of Inputs Imported	0.43	24.33	29,227	0.27	4.93	2,311
Age	19.90	17.80	116,457	19.99	18.49	7,347
No. of Directors	5.38	3.54	116,612	6.89	3.85	7,359
Private, Domestic	0.93	0.25	116,612	0.92	0.27	7,359
Private, Foreign	0.03	0.18	116,612	0.02	0.15	7,359
State Owned	0.03	0.18	116,612	0.06	0.23	7,359
Publicly Listed	0.34	0.48	116,612	0.45	0.50	7,359
Named Patel	0.04	0.19	116,612	0.03	0.17	7,359
Named Rao	0.06	0.24	116,612	0.22	0.41	7,359
Named Reddy	0.03	0.18	116,612	0.01	0.12	7,359
Named Shah	0.07	0.25	116,612	0.02	0.15	7,359
Named Singh	0.06	0.23	116,612	0.14	0.35	7,359

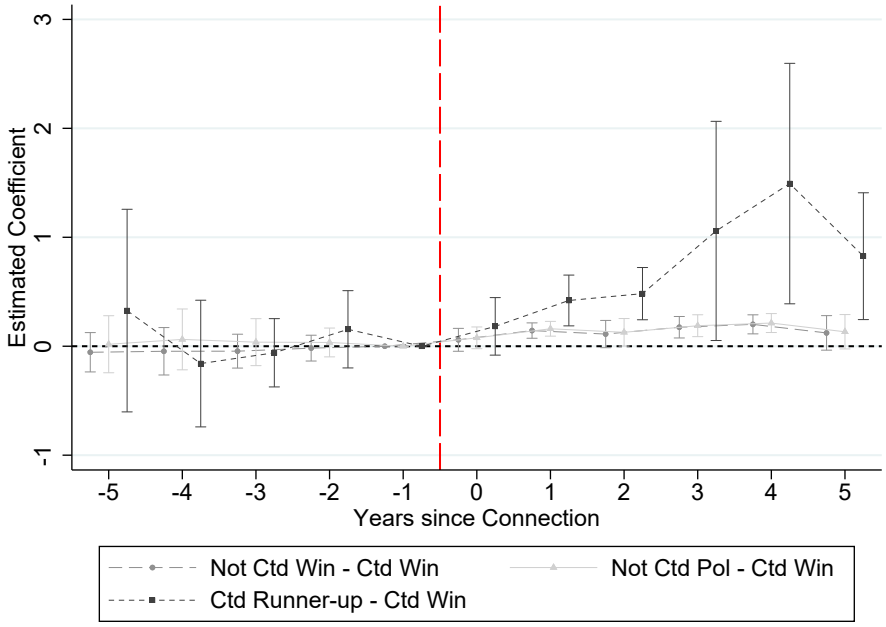
Notes: This table reports descriptive statistics of the firm-level data from the Prowess database for the period 1987–2007. "All firms" refers to the full sample of firms while "Connected winner/runner-up" refers to the sample of firms that are connected to either the winner or runner-up politician in their constituency. $\Delta\tau_{kt}^{Output}$ and $\Delta\tau_{kt}^{Input}$ denote output and input tariff changes between 1991 and 1996 (the most intensive period during the liberalization). Firms' sales, expenses, profit, capital, wage bill, director remuneration, intermediate inputs, and imports are measured in millions of USD.

Table A3: Variable Definitions

Variable	Description
Panel A. Election Variables	
Winner	Dummy indicating whether candidate p won the election in constituency c.
Margin	Vote share difference between the two top-ranking candidates in each constituency c (positive for winners and negative for runners-up).
Incumbent	Dummy indicating whether candidate p won the preceding election.
Prior Runner	Dummy indicating whether candidate p stood for election in the preceding election.
Aligned Candidate	Dummy indicating whether candidate p represents a party that is part of the majority or coalition in the state government.
Female Candidate	Dummy indicating whether candidate p is female.
INC Candidate	Dummy indicating whether candidate p represents the INC.
BJP Candidate	Dummy indicating whether candidate p represents the BJP.
SC/ST	Dummy indicating whether constituency c is reserved for Scheduled Castes or Scheduled Tribes.
Contestants	Number of candidates standing for election in constituency c.
Turnout	Ratio between actual votes cast and total number of eligible voters in constituency c.
Panel B. Firm Variables	
Connected	Dummy indicating whether firm i is connected to winning politician p in constituency c in year t.
Connected Winner or Runner-up	Dummy indicating whether firm i is connected to winning or runner-up politician p in constituency c in year t.
χ^2 Connected	Dummy indicating whether firm i is connected to winning politician p in constituency c in year t using the χ^2 measure.
χ^2 Connected Winner or Runner-up	Dummy indicating whether firm i is connected to winning or runner-up politician politician p in constituency c in year t using the χ^2 measure.
Sales	Sum of all income generated from the sales of goods and non-financial services in year t (measured in millions of USD).
Total Expenses	Sum of all revenue expenses incurred by the firm in year t (measured in millions of USD).
Profit	Net profit of the firm's after-tax payments in year t (measured in millions of USD).
TFP	Total factor productivity in year t, estimated as suggested by Levinsohn and Petrin (2003), using the GMM estimator proposed by Wooldridge (2009).
Capital	Measured by gross fixed assets in year t (in millions of USD).
Wage Bill	Remuneration in cash or in kind paid by the firm to its employees in year t (measured in millions of USD).
Total Director Remuneration	The sum of salaries, bonus/commissions, perquisites, retirement benefits and other benefits paid to the directors of the firm in year t (measured in millions of USD).
Intermediate Inputs	The sum of all expenses on intermediate inputs by the firm in year t (measured in millions of USD).
Import	The amount of expenses paid for inputs from outside of India in year t (measured in millions of USD).
Share of Inputs Imported	The ratio spent on imported inputs out of the cost of total inputs in year t.
Age	The age of the firm in year t.
No. of Directors	Measures the total size of the board of directors in year t.
Private, Domestic	Dummy indicating whether the firm is a privately owned domestic firm.
Private, Foreign	Dummy indicating whether the firm is a privately owned foreign firm.
State-Owned	Dummy indicating whether the firm is state-owned.
Publicly Listed	Dummy indicating whether the firm is publicly listed.
Panel C. Tariffs	
τ_{kt}^{Output}	Industry-level output tariff in year t, measured in percent.
τ_{kt}^{Input}	Industry-level input tariff in year t, measured in percent.

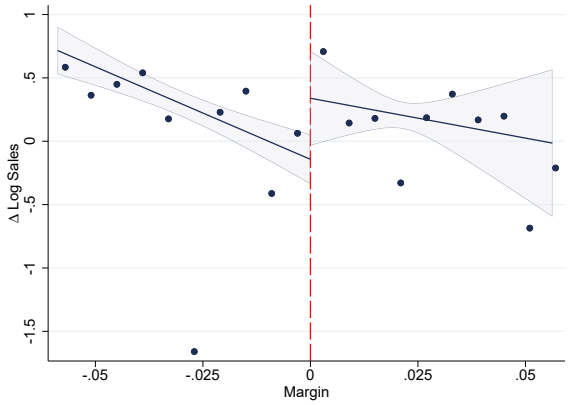
B Additional Results

Figure B.1: DiD Estimates—Heterogeneous Effects of Political Connections on Sales: By Pre-Connection Status

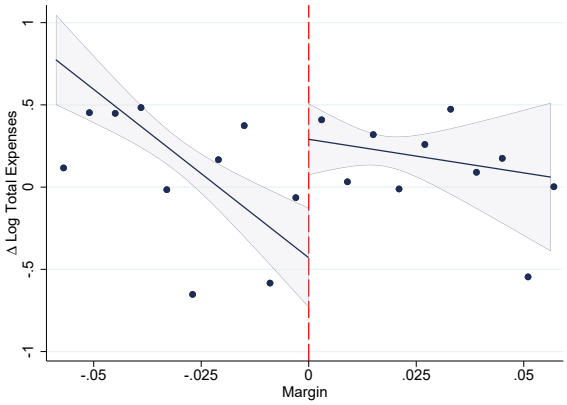


Notes: This figure shows estimates of political connections on (log) firm sales by plotting estimates ($\hat{\pi}_j$s) from the regression $y_{ikct} = \sum_{j=-5, j\neq -1}^{5} \pi_j \mathbb{1}(t = E_i + j) + \alpha_i + \gamma_t + \epsilon_{ikct}$, as described in Section 4.1 for different subgroups that become politically connected depending on their pre-connection status. Not Ctd Win–Ctd Win denote firms that transition from not being connected to the winner prior to the event to gaining connection to the winner at year $j = 0$. Ctd runner-up–Ctd Win denote firms that transition from being connected to the runner-up prior to the event to gaining connection to the winner at year $j = 0$. Not Ctd Pol–Ctd Win denote firms that transition from not being connected to the either winner or runner-up prior to the event to gaining connection to the winner at year $j = 0$. The year prior to the election is normalized to 0. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

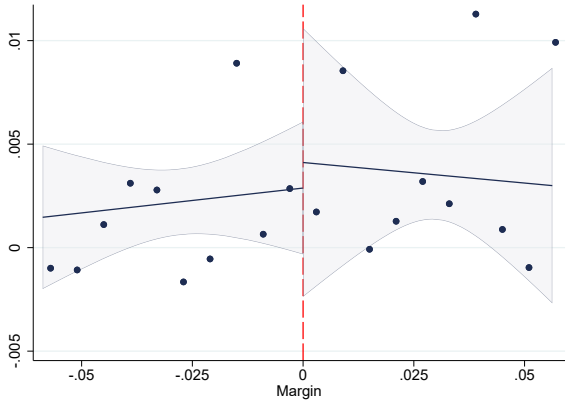
Figure B.2: RD Estimates—Effect of Political Connections on Firm Outcomes



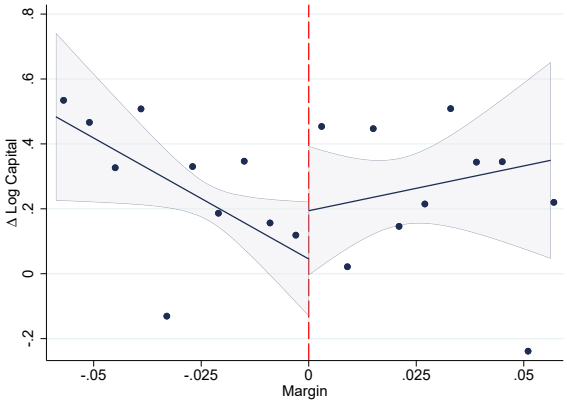
(a) Δ Log Sales



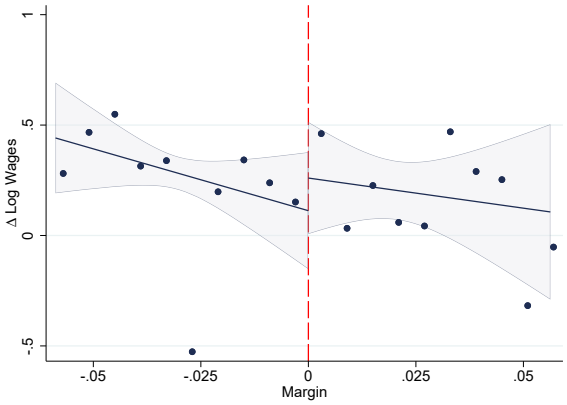
(b) Δ Log Total Expenses



(c) Δ Log Profit



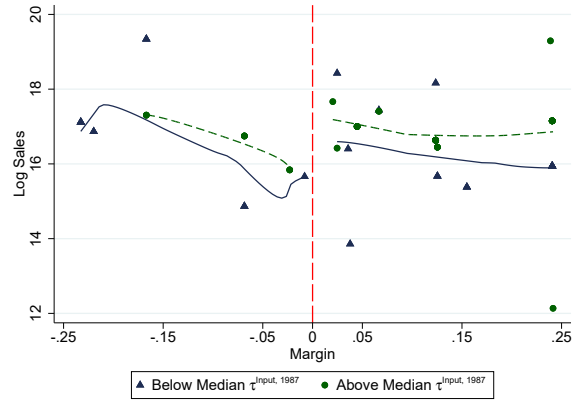
(d) Δ Log Capital



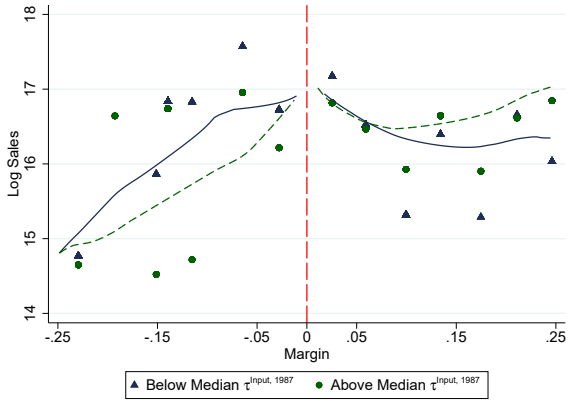
(e) Δ Log Wage Bill

Notes: This figure displays the effect of political connections on firm outcomes, by estimating a discontinuity at the point where the win-margin switches from negative to positive values (as discussed in Section 4.1.1). Markers represent averages within bins following the recommendation in Calonico et al. (2014). The estimation bandwidth is 6% on each side of the threshold. 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

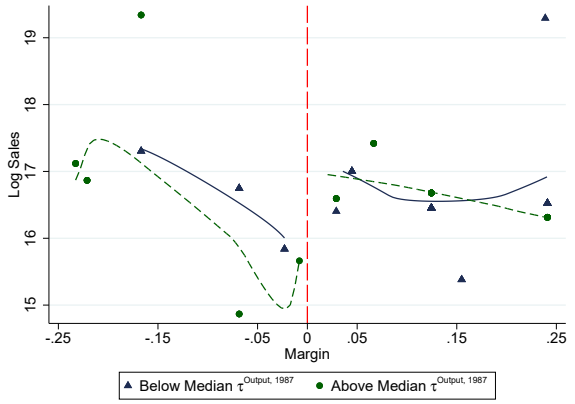
Figure B.3: Illustration of the Difference-in-Discontinuities Design



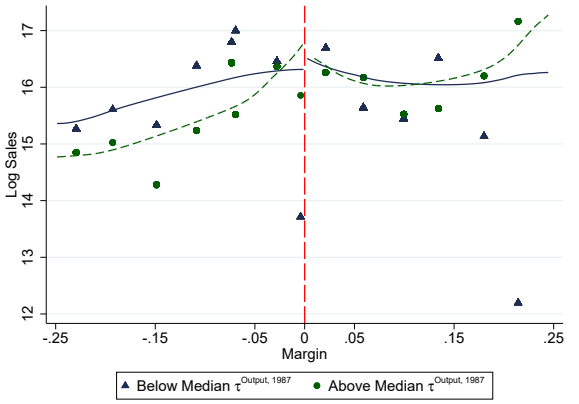
(a) By Input Tariff (1987–1993)



(b) By Input Tariff (1995–2007)



(c) By Output Tariff (1987–1993)



(d) By Output Tariff (1995–2007)

Notes: This figure illustrates how the effect of political connections on (log) firms sales changes in the pre- and post-reform period for firms in industries with above- and below-median tariffs in 1987. Panel (a) estimates discontinuities in the pre-period (1987–1993) and Panel (b) estimates discontinuities in the post-period (1995–2007) using input tariffs. Panel (c) and Panel (d) use output tariffs to define groups. The main specification (Equation (6)) uses the full, continuous variation of tariffs whereas this figure splits the full sample of firms into above and below levels of the median baseline tariff. Therefore, the figure should be read only as an approximation to the identifying variation in the regression results reported in subsequent tables. The curves are local linear regressions with an Epanechnikov kernel and bandwidth of 7%. The estimation window is restricted to 25% on each side of the threshold.

Table B1: RD Estimates—Effect of Political Connections on Firm Size

	Δ Log Sales		Δ Log Total Expenses		Δ Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All Firms						
Connected	0.439***	0.339**	0.320**	0.219	0.002	0.006
	(0.138)	(0.150)	(0.135)	(0.135)	(0.005)	(0.007)
Mean of Outcome	0.21	0.21	0.16	0.16	0.00	0.00
Observations	268	268	317	317	332	332
R^2	0.026	0.177	0.013	0.099	0.005	0.203
Panel B: All Firms – χ^2 Measure						
χ^2 Connected	0.274	0.384***	0.152	0.298**	0.001	0.001
	(0.196)	(0.128)	(0.202)	(0.138)	(0.002)	(0.001)
Mean of Outcome	0.18	0.18	0.15	0.15	0.00	0.00
Observations	594	594	765	765	779	779
R^2	0.008	0.092	0.005	0.074	0.002	0.201
Panel C: Manufacturing Firms						
Connected	0.367***	0.451***	0.317***	0.292*	0.009	0.009
	(0.118)	(0.155)	(0.074)	(0.168)	(0.010)	(0.012)
Mean of Outcome	0.18	0.18	0.21	0.21	0.00	0.00
Observations	153	153	158	158	167	167
R^2	0.021	0.308	0.029	0.187	0.017	0.274
State × Election Year FE	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes
Bandwidth	0.066	0.066	0.064	0.064	0.072	0.072

Notes: This table reports the estimated effect of political connections on firm size outcomes, as specified by Equation (4). Panel A reports results for the full sample of firms. Panel B uses the alternative χ^2 definition of political connections, and Panel C restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy equal to 1 for firms connected to winner politicians and 0 for firms connected to runner-up politicians. All regressions control for the running variable, *Margin*, and its interaction with *Connected*. Moreover, all regressions are weighted by a triangular kernel to give more weight on observations close to the cutoff. The bandwidth is calculated using the method proposed by Calonico et al. (2014). Controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table B2: RD Estimates—Effect of Political Connections on Firm Production

	Δ Log Capital		Δ Log Wage Bill	
	(1)	(2)	(3)	(4)
Panel A: All Firms				
Connected	0.109	0.171**	0.191	0.111
	(0.124)	(0.085)	(0.152)	(0.135)
Mean of Outcome	0.28	0.28	0.22	0.22
Observations	604	604	329	329
R^2	0.008	0.105	0.017	0.156
Panel B: All Firms – χ^2 Measure				
χ^2 Connected	-0.053	0.030	-0.084	0.046
	(0.152)	(0.099)	(0.157)	(0.077)
Mean of Outcome	0.27	0.27	0.22	0.22
Observations	1,175	1,175	747	747
R^2	0.006	0.081	0.003	0.108
Panel C: Manufacturing Firms				
Connected	0.144	0.082	0.026	-0.106
	(0.162)	(0.227)	(0.149)	(0.199)
Mean of Outcome	0.24	0.24	0.22	0.22
Observations	272	272	173	173
R^2	0.006	0.140	0.020	0.352
State × Election Year FE	No	Yes	No	Yes
Controls	No	Yes	No	Yes
Bandwidth	0.106	0.106	0.078	0.078

Notes: This table reports the estimated effect of political connections on firm production outcomes, as specified by Equation (4). Panel A reports results for the full sample of firms, Panel B uses the alternative χ^2 definition of political connections, and Panel C restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy equal to 1 for firms connected to winner politicians and 0 for firms connected to runner-up politicians. All regressions control for the running variable, $Margin$, and its interaction with *Connected*. Moreover, all regressions are weighted by a triangular kernel to give more weight on observations close to the cutoff. The bandwidth is calculated using the method proposed by Calonico et al. (2014). Controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table B3: Diff-in-Disc Estimates—Effect of Political Connections and Tariff Reductions on Firm Size

	Log Sales		Log Total Expenses		Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	0.125***	0.142***	0.191***	0.128*	0.002	0.006*
	(0.032)	(0.047)	(0.048)	(0.072)	(0.003)	(0.003)
Connected × τ_{kt}^{Output}	-0.017	-0.014	-0.029	-0.028	-0.001	-0.001
	(0.021)	(0.028)	(0.022)	(0.038)	(0.001)	(0.001)
Connected	0.329	0.279	0.282	0.309	0.011	0.007
	(0.581)	(0.321)	(0.629)	(0.542)	(0.012)	(0.012)
τ_{kt}^{Input}	-0.039	-0.072***	-0.083***	-0.050	-0.000	-0.008*
	(0.025)	(0.020)	(0.023)	(0.070)	(0.000)	(0.004)
τ_{kt}^{Output}	0.011	-0.008	0.010	0.025	-0.000	0.001
	(0.017)	(0.026)	(0.019)	(0.042)	(0.000)	(0.001)
Mean of Outcome	16.18	16.18	16.28	16.28	20.73	20.73
Observations	1,058	1,058	759	759	746	746
R^2	0.046	0.545	0.089	0.680	0.075	0.652
State × Year FE	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Bandwidth	0.140	0.140	0.091	0.091	0.087	0.087

Notes: This table reports the estimated effect of political connections on firm size outcomes using the Diff-in-Disc design as specified by Equation (6). The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy equal to 1 for firms connected to winner politicians and 0 for firms connected to runner-up politicians. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. All regressions control for the running variable, $Margin$, as well as the interactions: $Margin \times Connected$, $Margin \times \tau_{kt}^{Output}$, $Margin \times \tau_{kt}^{Input}$, $Margin \times \tau_{kt}^{Output} \times Connected$ and $Margin \times \tau_{kt}^{Input} \times Connected$. The regressions are weighted by a triangular kernel to give more weight on observations close to the cutoff. The bandwidth is calculated using the method proposed by Calonico et al. (2014). Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table B4: Diff-in-Disc Estimates—Effect of Political Connections and Tariff Reductions on Firm Production

	Log Capital		Log Wage Bill	
	(1)	(2)	(3)	(4)
Connected $\times$ τ_{kt}^{Input}	0.209***	0.230***	0.164*	0.183*
	(0.074)	(0.066)	(0.090)	(0.094)
Connected $\times$ τ_{kt}^{Output}	-0.042*	-0.047	-0.044	-0.069*
	(0.025)	(0.036)	(0.028)	(0.039)
Connected	0.264	0.589	-0.541	0.347
	(0.493)	(0.716)	(0.557)	(0.777)
τ_{kt}^{Input}	-0.108***	-0.132*	-0.109**	-0.091
	(0.036)	(0.068)	(0.046)	(0.100)
τ_{kt}^{Output}	0.027	0.034	0.042*	0.035
	(0.020)	(0.037)	(0.023)	(0.044)
Mean of Outcome	16.53	16.53	13.63	13.63
Observations	643	643	599	599
R^2	0.097	0.711	0.053	0.732
State $\times$ Year FE	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes
Bandwidth	0.079	0.079	0.075	0.075

Notes: This table reports the estimated effect of political connections on firm production outcomes using the Diff-in-Disc design as specified by Equation (6). The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy equal to 1 for firms connected to winner politicians and 0 for firms connected to runner-up politicians. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. All regressions control for the running variable, $Margin$, as well as the interactions: $Margin \times Connected$, $Margin \times \tau_{kt}^{Output}$, $Margin \times \tau_{kt}^{Input}$, $Margin \times \tau_{kt}^{Output} \times Connected$ and $Margin \times \tau_{kt}^{Input} \times Connected$. The regressions are weighted by a triangular kernel to give more weight on observations close to the cutoff. The bandwidth is calculated using the method proposed by Calonico et al. (2014). Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

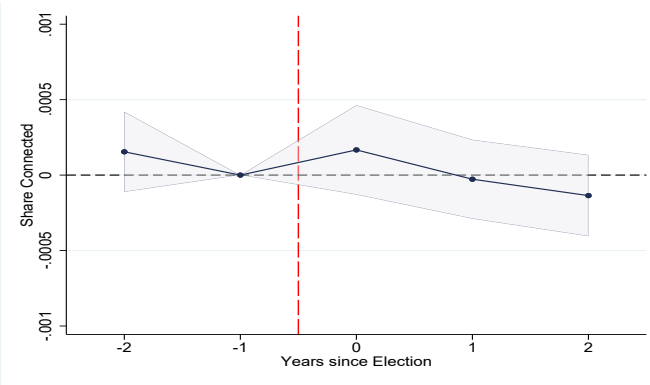
Table B5: Triple Difference Estimates—Effects of Political Connections and Tariff Reductions by State-level Corruption

	Log Sales	
	(1)	(2)
Connected	0.074	0.067
	(0.073)	(0.068)
BIMARU	-0.285*	-0.334**
	(0.151)	(0.153)
τ_{kt}^{Input}	-0.007**	-0.007**
	(0.003)	(0.003)
Connected × BIMARU	0.025	0.022
	(0.193)	(0.198)
Connected × τ_{kt}^{Input}	0.012***	0.012***
	(0.003)	(0.003)
τ_{kt}^{Input} × BIMARU	-0.001	-0.000
	(0.006)	(0.006)
Connected × τ_{kt}^{Input} × BIMARU	0.025***	0.024***
	(0.007)	(0.008)
Mean of Outcome	16.03	16.03
Observations	31,090	31,090
R^2	0.892	0.892
Firm & Year FE	Yes	Yes
Control: Ctd Pol	Yes	Yes
Controls	No	Yes

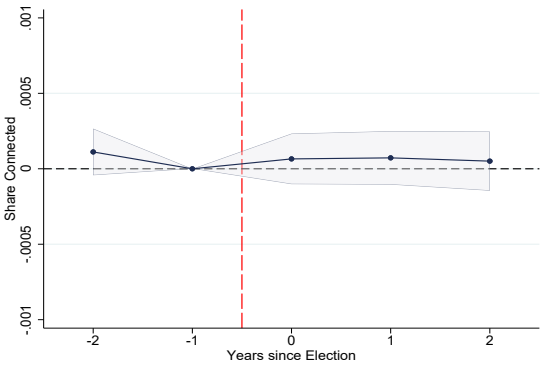
Notes: This table reports estimates of how the tariff reductions affect the returns to political connections as specified in Equation (5) with the addition of estimating heterogeneity for firms located in $BIMARU$ states. The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

C Robustness Checks

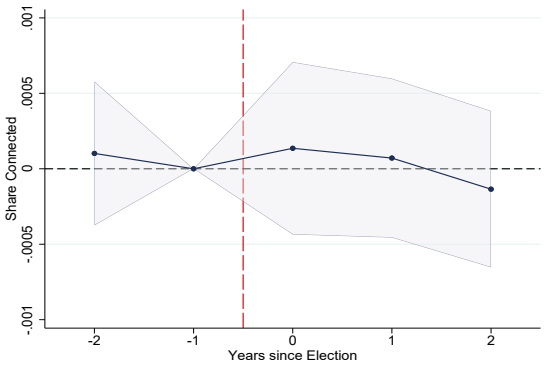
Figure C.1: Robustness—Share of Directors in Constituency Connected to MLA



(a) Full Period



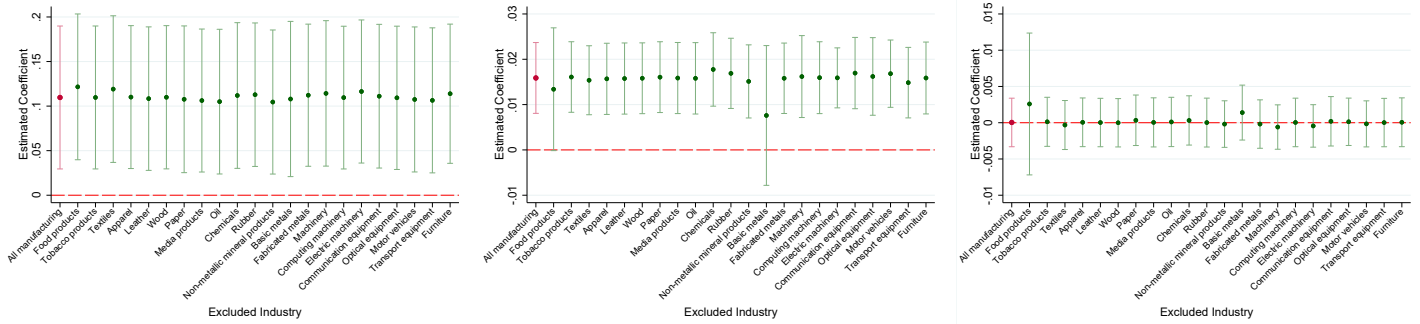
(b) Before Trade Reform



(c) After Trade Reform

Notes: This figure shows the share of directors who are connected to the winning politician before and after the politician is elected. The specification is $ShareDirConnected_{jct} = \sum_{g=2}^{2} \beta_g \mathbb{1}(t = E_i + g) + \alpha_c + \gamma_t + \xi_{ikct}$, where $ShareDirConnected_{jct}$ is the share of directors in constituency c that are connected to the politician who won the election at $g = 0$. Panel (a) shows the estimated share of firms becoming connected to the winning politician for the full sample period. Panel (b) and (c) restricts the analysis to the period before and after the trade reform, respectively. The year prior to the election is normalized to zero. 95% confidence intervals are used for inference. Standard errors are clustered by constituency.

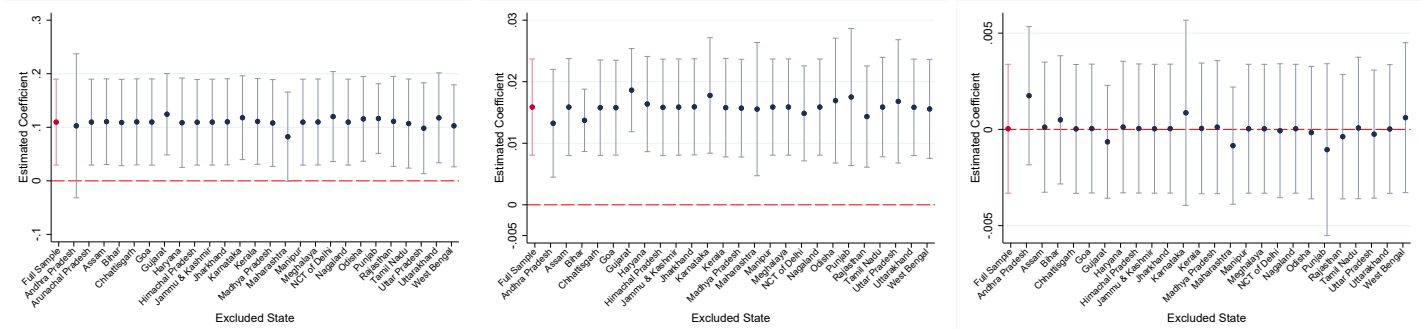
Figure C.2: Robustness—Exclusion of Manufacturing Industries



(a) Connected (b) Connected $\times$ τ_{kt}^{Input} (c) Connected $\times$ τ_{kt}^{Output}

Notes: This figure shows estimated coefficients from Equation (1) (Panel (a)) and Equation (5) (Panels (b)–(c)) excluding one 2-digit industry in the manufacturing sector at a time using sales as outcome variable. The left-most estimate in Panel (a) is the same as column (2) in Table 1 and the left-most estimate in Panel (b) and Panel (c) is the same as those in Table 3.

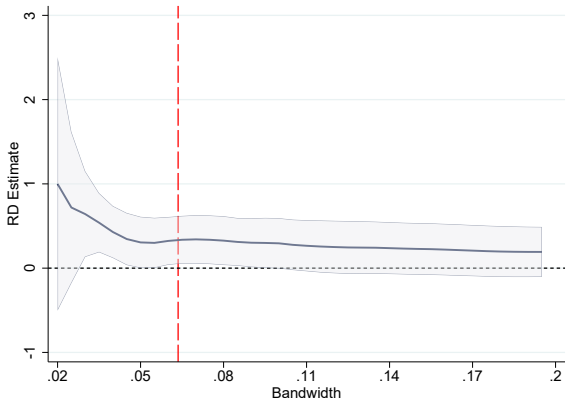
Figure C.3: Robustness—Exclusion of States



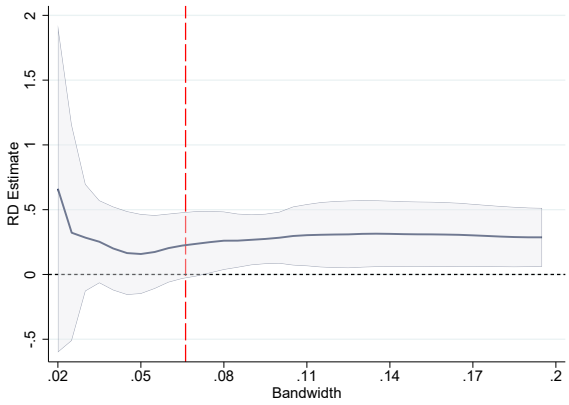
(a) Connected (b) Connected $\times$ τ_{kt}^{Input} (c) Connected $\times$ τ_{kt}^{Output}

Notes: This figure shows estimated coefficients from Equation (1) (Panel (a)) and Equation (5) (Panels (b)–(c)) excluding one state at a time using sales as outcome variable. The left-most estimate in Panel (a) is the same as column (2) in Table 1 and the left-most estimate in Panel (b) and Panel (c) is the same as those in Table 3.

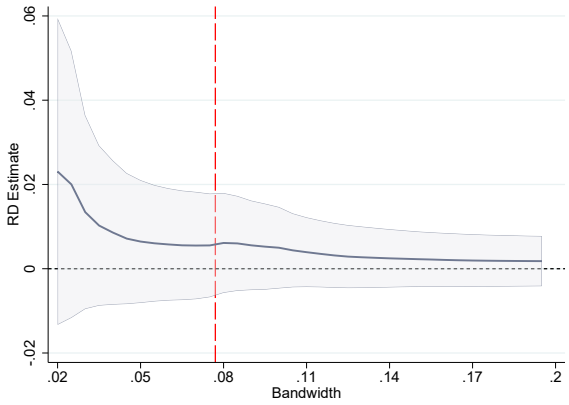
Figure C.4: Robustness—Bandwidth Sensitivity of RD Estimates



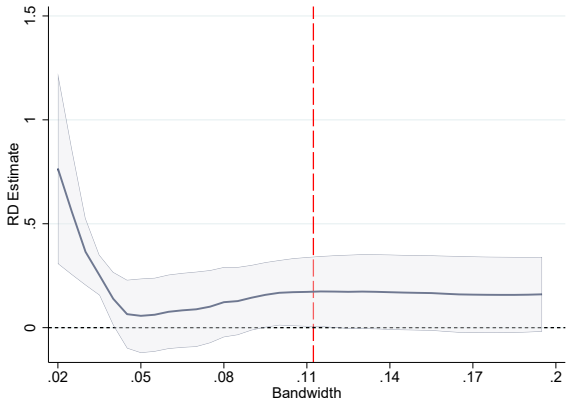
(a) Δ Log Sales



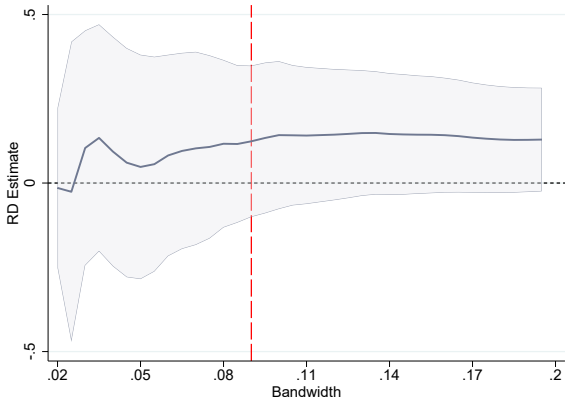
(b) Δ Log Total Expenses



(c) Δ Log Profit



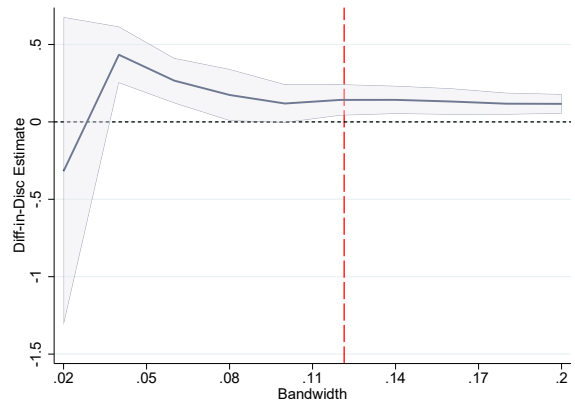
(d) Δ Log Capital



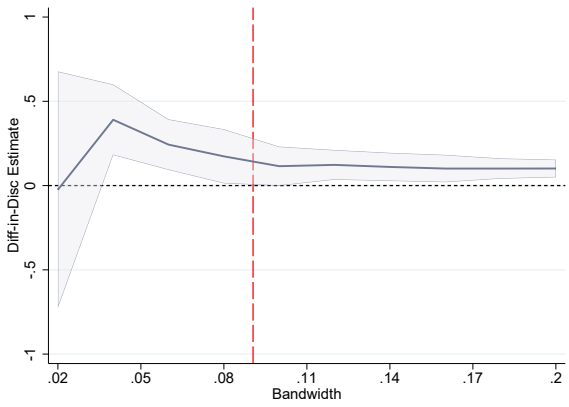
(e) Δ Log Wage Bill

Notes: This figure shows estimated RD coefficients for a range of different bandwidths. The specification and indexing are as described in Section 4.1.1. The vertical dotted line indicate the optimal bandwidth as calculated in Calonico et al. (2014). 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

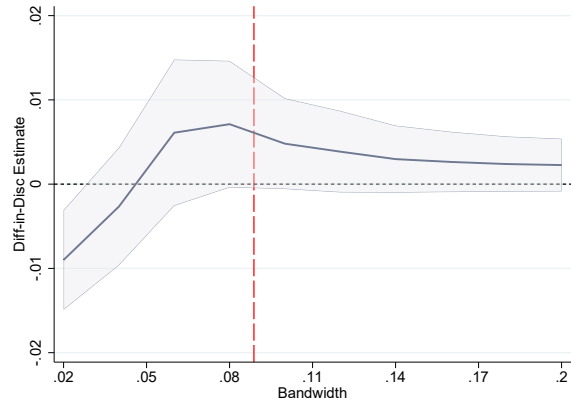
Figure C.5: Robustness—Bandwidth Sensitivity of Diff-in-Disc Estimates ($Connected_{ict} \times \tau_{kt}^{Input}$)



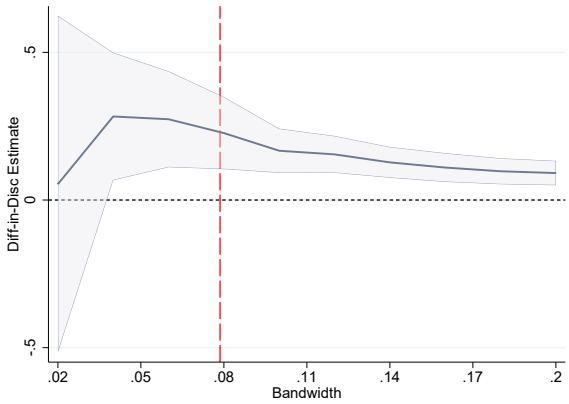
(a) Log Sales



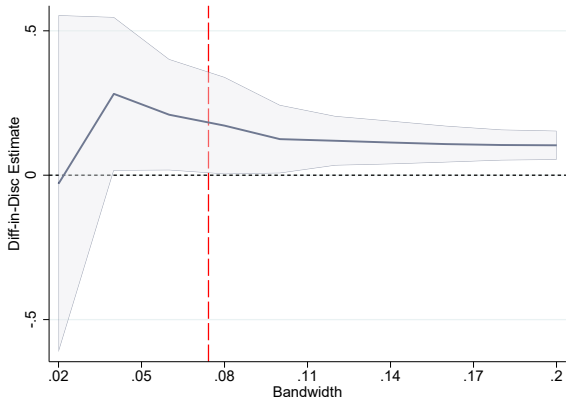
(b) Log Total Expenses



(c) Log Profit



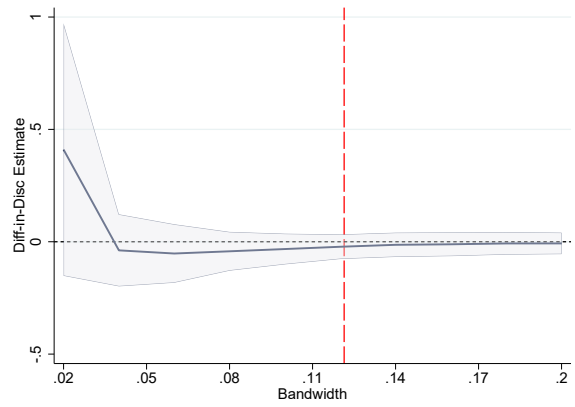
(d) Log Capital



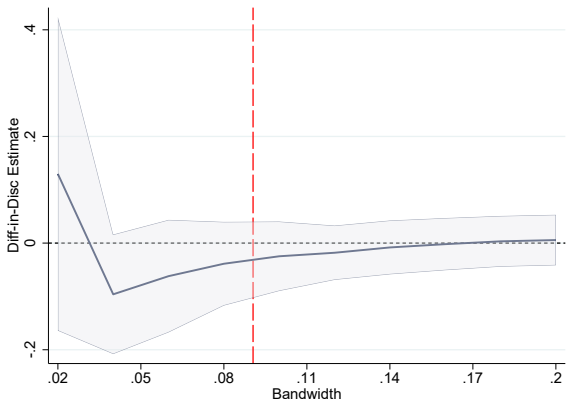
(e) Log Wage Bill

Notes: This figure shows estimated Diff-in-Disc coefficients for a range of different bandwidths. The specification is described in Section 5.1 and include state-by-year fixed effects and industry fixed effects. The vertical dotted line indicates the optimal bandwidth as defined in Calonico et al. (2014). 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

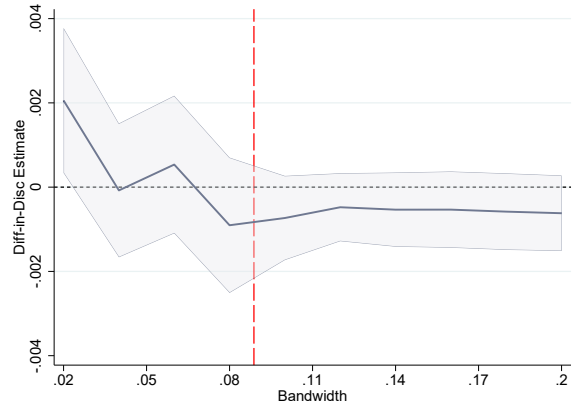
Figure C.6: Robustness—Bandwidth Sensitivity of Diff-in-Disc Estimates ($Connected_{ict} \times \tau_{kt}^{Output}$)



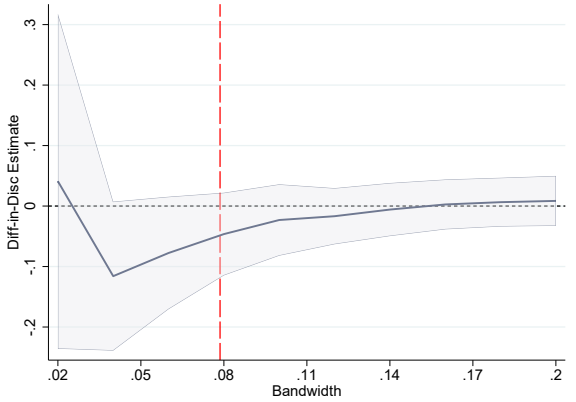
(a) Log Sales



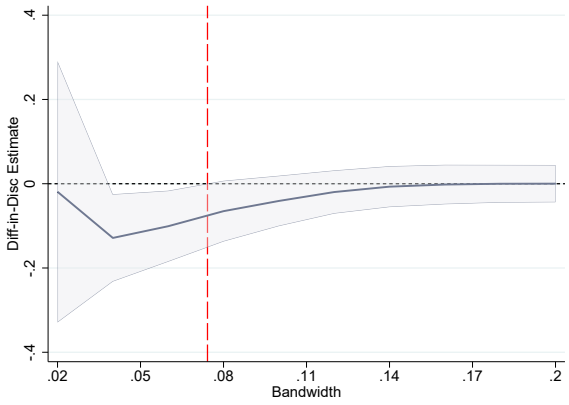
(b) Log Total Expenses



(c) Log Profit



(d) Log Capital



(e) Log Wage Bill

Notes: This figure shows estimated Diff-in-Disc coefficients for a range of different bandwidths. The specification is described in Section 5.1 and include state-by-year fixed effects and industry fixed effects. The vertical dotted line indicates the optimal bandwidth as defined in Calonico et al. (2014). 95% confidence intervals are used for inference. Standard errors are two-way clustered by industry and constituency.

Table C1: Robustness—Correlation Between Pre-Reform Firm Characteristics and Tariff Changes

	Δ Log Sales		Δ Log Total Expenses		Δ Log Profit		Δ Log TFP		Δ Log Capital		Δ Log Wage Bill		Connected	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: 1992–1997														
$\Delta\tau_{k1997}^{Output}$	0.061		-0.018		0.069		0.019		-0.119		0.054		-0.016	
	(0.106)		(0.100)		(0.187)		(0.065)		(0.108)		(0.102)		(0.034)	
$\Delta\tau_{k1997}^{Input}$		-0.058		-0.004		0.128		-0.008		0.051		-0.014		-0.011
		(0.064)		(0.045)		(0.088)		(0.125)		(0.060)		(0.040)		(0.013)
Observations	261	261	262	262	213	213	177	177	264	264	262	262	655	655
R^2	0.002	0.006	0.000	0.000	0.000	0.006	0.000	0.000	0.008	0.005	0.002	0.001	0.000	0.001
Panel B: 1992–2007														
$\Delta\tau_{k2007}^{Output}$	0.017		-0.024		-0.166		-0.029		-0.065		0.021		-0.039	
	(0.091)		(0.083)		(0.175)		(0.051)		(0.092)		(0.080)		(0.036)	
$\Delta\tau_{k2007}^{Input}$		-0.046		-0.009		0.069		-0.010		0.026		-0.007		-0.015
		(0.045)		(0.032)		(0.071)		(0.093)		(0.043)		(0.027)		(0.010)
Observations	212	212	213	213	175	175	140	140	215	215	213	213	511	511
R^2	0.000	0.009	0.001	0.000	0.005	0.004	0.001	0.000	0.004	0.003	0.001	0.000	0.005	0.004

Notes: This table reports the results from correlating (i) the growth rate of each firm outcome variable used in the main analysis and (ii) connection status with changes in the tariff rate. Each column pair denotes the change in the variable between 1989 and 1991. Panel A shows estimates of the change in output- and input tariff rates between 1992 and 1997 while Panel B shows estimates of the change in output and input tariff rates between 1992 and 2007. Standard errors are clustered at the industry level. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C2: Robustness—Effect of Political Connections and Tariff Reductions on Firm Size: Years Restricted to 1987–1997

	Log Sales		Log Total Expenses		Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected $\times$ τ_{kt}^{Input}	0.008**	0.006*	0.009**	0.008**	0.000	0.000
	(0.004)	(0.003)	(0.003)	(0.003)	(0.000)	(0.000)
Connected $\times$ τ_{kt}^{Output}	-0.001	-0.001	-0.001	-0.001	-0.000	-0.000*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Connected	0.130	0.092	0.063	-0.003	-0.001	-0.001
	(0.121)	(0.121)	(0.107)	(0.109)	(0.001)	(0.002)
τ_{kt}^{Input}	-0.001	-0.000	-0.002	-0.001	0.000	0.000***
	(0.002)	(0.004)	(0.003)	(0.003)	(0.000)	(0.000)
τ_{kt}^{Output}	-0.000	-0.002	0.000	-0.001	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Mean of Outcome	16.34	16.34	16.40	16.40	20.72	20.72
Observations	7,073	7,073	7,167	7,167	7,151	7,151
R^2	0.877	0.888	0.917	0.925	0.698	0.749
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5). The sample is restricted to firms in the manufacturing sector in the years 1987–1997. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C3: Robustness—Effect of Political Connections and Tariff Reductions on Firm Production: Years Restricted to 1987–1997

	Log TFP		Log Capital		Log Wage Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	-0.001	-0.000	0.010***	0.009***	0.003	0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)
Connected × τ_{kt}^{Output}	-0.000	-0.001	-0.002	-0.002	-0.002***	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Connected	0.035	0.052	0.086	0.067	0.155	0.084
	(0.053)	(0.065)	(0.082)	(0.086)	(0.105)	(0.100)
τ_{kt}^{Input}	0.003**	0.002	-0.005***	-0.001	-0.003	-0.002
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)
τ_{kt}^{Output}	-0.001**	-0.001**	0.001	-0.000	0.000	-0.001*
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mean of Outcome	0.52	0.52	16.55	16.55	13.58	13.58
Observations	6,916	6,916	7,278	7,278	7,120	7,120
R^2	0.946	0.949	0.948	0.954	0.939	0.945
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5). The sample is restricted to firms in the manufacturing sector in the years 1987–1997. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C4: Triple Differences Estimates—Effect of Political Connections and Tariff Reductions on Firm Size: χ^2-Definition

	Log Sales			Log Total Expenses			Log Profit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
χ^2 Connected $\times$ τ_{kt}^{Input}	0.0071***	0.012***	0.013***	0.0048**	0.011***	0.011***	0.000066	0.00019	0.00022
	(0.0011)	(0.0045)	(0.0042)	(0.0020)	(0.0039)	(0.0038)	(0.000082)	(0.00016)	(0.00020)
χ^2 Connected $\times$ τ_{kt}^{Output}	-0.000012	-0.00094	-0.0012	0.00069	-0.000017	-0.00052	-0.000021	-0.000044	-0.000055
	(0.00090)	(0.0014)	(0.0014)	(0.0012)	(0.0014)	(0.0013)	(0.000017)	(0.000033)	(0.000039)
χ^2 Connected	0.017	0.059	0.062	0.026	0.037	0.054	0.00013	0.00013	0.00074
	(0.035)	(0.051)	(0.047)	(0.049)	(0.051)	(0.048)	(0.00068)	(0.00082)	(0.00086)
τ_{kt}^{Input}	-0.0085***	-0.0082***	0.0010	-0.0058	-0.0055	-0.0037	-0.00030	-0.00029	0.00011
	(0.0029)	(0.0029)	(0.0045)	(0.0036)	(0.0037)	(0.0037)	(0.00022)	(0.00021)	(0.000076)
τ_{kt}^{Output}	0.00097	0.00089	-0.00072	-0.00045	-0.00052	-0.00070	0.000023	0.000020	-0.000026
	(0.0015)	(0.0015)	(0.00095)	(0.0015)	(0.0016)	(0.00091)	(0.000024)	(0.000023)	(0.000022)
Mean of Outcome	16.03	16.03	16.03	15.96	15.96	15.96	20.73	20.73	20.73
Observations	30,887	30,887	30,887	32,140	32,140	32,140	32,170	32,170	32,170
R^2	0.892	0.892	0.897	0.890	0.890	0.895	0.669	0.669	0.707
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: χ^2 Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Industry Trend	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5) when using the χ^2 measure of connectedness. The sample is restricted to firms in the manufacturing sector. $\chi^2 Connected$ is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control $\chi^2 Pol$ is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are A dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C5: Triple Differences Estimates—Effect of Political Connections and Tariff Reductions on Firm Production: χ^2-Definition

	Log TFP			Log Capital			Log Wage Bill		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
χ^2 Connected $\times$ τ_{kt}^{Input}	0.00056	-0.00040	0.00018	0.0056**	0.0086**	0.0089**	0.0043***	0.0080***	0.0083***
	(0.00096)	(0.0019)	(0.0019)	(0.0022)	(0.0035)	(0.0036)	(0.0014)	(0.0028)	(0.0029)
χ^2 Connected $\times$ τ_{kt}^{Output}	0.00012	-0.000085	-0.000051	-0.0016**	-0.00082	-0.0014	0.00065	-0.00026	-0.00080
	(0.00039)	(0.00054)	(0.00055)	(0.00072)	(0.00097)	(0.0010)	(0.0012)	(0.0016)	(0.0015)
χ^2 Connected	0.019	0.018	0.018	0.039	0.043	0.065*	0.020	0.057	0.059*
	(0.014)	(0.018)	(0.019)	(0.036)	(0.037)	(0.036)	(0.035)	(0.035)	(0.035)
τ_{kt}^{Input}	0.0020	0.0020	0.0043	-0.0081***	-0.0080***	-0.0052**	-0.0061	-0.0059	-0.0037
	(0.0015)	(0.0015)	(0.0029)	(0.0021)	(0.0022)	(0.0022)	(0.0038)	(0.0038)	(0.0035)
τ_{kt}^{Output}	-0.00065	-0.00070	-0.00067	0.0019*	0.0021*	0.00064	-0.00033	-0.00042	-0.000035
	(0.00090)	(0.00093)	(0.00057)	(0.0011)	(0.0011)	(0.00093)	(0.00098)	(0.0010)	(0.00083)
Mean of Outcome	0.63	0.63	0.63	16.04	16.04	16.04	13.22	13.22	13.22
Observations	29,552	29,552	29,552	32,853	32,853	32,853	31,219	31,219	31,219
R^2	0.931	0.931	0.933	0.929	0.929	0.933	0.926	0.926	0.930
Year & Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: χ^2 Pol	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Industry Trend	No	No	Yes	No	No	Yes	No	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5) when using the χ^2 measure of connectedness. The sample is restricted to firms in the manufacturing sector. $\chi^2 Connected$ is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control $\chi^2 Pol$ is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are A dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C6: Robustness—Effect of Political Connections and Tariff Reductions on Firm Size: Including Treatment-specific Trends

	Log Sales			Log Total Expenses			Log Profit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected × τ_{kt}^{Input}	0.018***	0.016***	0.019**	0.014**	0.011**	0.012	-0.00030***	0.000018	-0.00025**
	(0.0067)	(0.0046)	(0.0079)	(0.0063)	(0.0045)	(0.0084)	(0.00011)	(0.00012)	(0.00012)
Connected × τ_{kt}^{Output}	-0.0015	-0.00025	-0.0011	-0.00066	-0.00099	-0.0014	0.000039	-0.000019	0.000055
	(0.0034)	(0.0014)	(0.0031)	(0.0030)	(0.0011)	(0.0024)	(0.000039)	(0.000015)	(0.000040)
τ_{kt}^{Input}	0.0017	0.0015	0.0016	-0.0030	-0.0033	-0.0028	0.00013	0.00011	0.00013
	(0.0045)	(0.0047)	(0.0045)	(0.0036)	(0.0037)	(0.0036)	(0.000080)	(0.000076)	(0.000079)
τ_{kt}^{Output}	-0.00073	-0.00072	-0.00075	-0.00056	-0.00057	-0.00051	-0.000028	-0.000024	-0.000029
	(0.00081)	(0.00086)	(0.00081)	(0.00085)	(0.00086)	(0.00085)	(0.000023)	(0.000022)	(0.000024)
Mean of Outcome	16.03	16.03	16.03	15.96	15.96	15.96	20.73	20.73	20.73
Observations	30,874	30,887	30,874	32,133	32,140	32,133	32,163	32,170	32,163
R^2	0.901	0.900	0.901	0.899	0.898	0.899	0.714	0.709	0.714
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connected × Industry FE	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
Connected Trend	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5). In addition, the first column for each outcome variable includes treatment-specific industry-fixed effects, and the second column includes treatment-specific linear time trends. Column (3) includes both. The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C7: Robustness—Effect of Political Connections and Tariff Reductions on Firm Production: Including Treatment-specific Trends

	Log TFP			Log Capital			Log Wage Bill		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Connected × τ_{kt}^{Input}	-0.0023	0.000075	-0.0017	0.0087***	0.0064**	0.0067*	0.013**	0.011***	0.013*
	(0.0031)	(0.0025)	(0.0031)	(0.0029)	(0.0032)	(0.0036)	(0.0058)	(0.0031)	(0.0070)
Connected × τ_{kt}^{Output}	0.00069	0.00082	0.00090	-0.0013	-0.0013	-0.0020	-0.0021	-0.0015	-0.0018
	(0.0016)	(0.00055)	(0.0016)	(0.0021)	(0.0011)	(0.0018)	(0.0025)	(0.0011)	(0.0022)
τ_{kt}^{Input}	0.0046	0.0043	0.0045	-0.0046**	-0.0045**	-0.0044**	-0.0034	-0.0034	-0.0035
	(0.0028)	(0.0028)	(0.0028)	(0.0020)	(0.0021)	(0.0020)	(0.0034)	(0.0034)	(0.0034)
τ_{kt}^{Output}	-0.00063	-0.00061	-0.00064	0.00041	0.00047	0.00045	0.000040	0.000035	0.000018
	(0.00060)	(0.00058)	(0.00061)	(0.00084)	(0.00085)	(0.00083)	(0.00072)	(0.00074)	(0.00072)
Mean of Outcome	0.64	0.63	0.64	16.04	16.04	16.04	13.22	13.22	13.22
Observations	29,543	29,552	29,543	32,846	32,853	32,846	31,211	31,219	31,211
R^2	0.934	0.934	0.934	0.936	0.935	0.936	0.933	0.933	0.933
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connected × Industry FE	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
Connected Trend	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5). In addition, the first column for each outcome variable includes treatment-specific industry-fixed effects, and the second column includes treatment-specific linear time trends. Column (3) includes both. The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, dummy variables equal to 1 for candidates representing the two major parties (the BJP and the INC), a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C8: Robustness—Effect of Political Connections and Tariff Reductions on Firm Size: Controlling for Delicensing and FDI

	Log Sales		Log Total Expenses		Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	0.017***	0.016***	0.015***	0.014***	-0.000	-0.000
	(0.004)	(0.004)	(0.005)	(0.004)	(0.000)	(0.000)
Connected × τ_{kt}^{Output}	0.001	-0.001	0.001	-0.001	-0.000**	-0.000**
	(0.002)	(0.002)	(0.003)	(0.002)	(0.000)	(0.000)
Connected × Delicensed	0.140	0.059	0.040	-0.034	-0.002*	-0.003**
	(0.140)	(0.129)	(0.247)	(0.234)	(0.001)	(0.001)
Connected × FDI	0.003	-0.040	0.002	-0.007	-0.003	-0.004
	(0.122)	(0.098)	(0.145)	(0.099)	(0.002)	(0.002)
Connected	-0.127	0.017	0.021	0.132	0.015**	0.016**
	(0.219)	(0.158)	(0.314)	(0.233)	(0.007)	(0.007)
Delicensed	-0.010	0.062	0.013	0.085*	-0.003**	-0.001
	(0.060)	(0.050)	(0.072)	(0.051)	(0.001)	(0.001)
FDI	-0.115	0.014	-0.109	0.006	0.001	0.001
	(0.077)	(0.063)	(0.066)	(0.052)	(0.001)	(0.001)
τ_{kt}^{Output}	0.001	-0.001	-0.000	-0.001	0.000	-0.000
	(0.002)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)
τ_{kt}^{Input}	-0.007**	0.002	-0.005	-0.003	-0.000	0.000
	(0.003)	(0.005)	(0.003)	(0.004)	(0.000)	(0.000)
Mean of Outcome	16.03	16.03	15.96	15.96	20.73	20.73
Observations	30,887	30,887	32,140	32,140	32,170	32,170
R^2	0.892	0.900	0.890	0.898	0.670	0.710
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5) with the addition of controls for whether or not the industry was delicensed or experienced an FDI reform at time t. The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table C9: Robustness—Effect of Political Connections and Tariff Reductions on Firm Production: Controlling for Delicensing and FDI

	Log TFP		Log Capital		Log Wage Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	-0.001	-0.000	0.009***	0.007**	0.012***	0.011***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Connected × τ_{kt}^{Output}	0.001	0.001	-0.000	-0.002	-0.000	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Connected × Delicensed	0.037	0.041	-0.113	-0.150	0.035	-0.062
	(0.074)	(0.070)	(0.134)	(0.112)	(0.127)	(0.102)
Connected × FDI	-0.020	-0.022	0.009	-0.024	0.093	0.073
	(0.058)	(0.054)	(0.090)	(0.074)	(0.076)	(0.070)
Connected	-0.061	-0.048	0.091	0.185	0.023	0.141
	(0.072)	(0.064)	(0.190)	(0.131)	(0.160)	(0.105)
Delicensed	0.012	-0.021	0.015	0.058	-0.017	0.073**
	(0.031)	(0.027)	(0.049)	(0.036)	(0.037)	(0.035)
FDI	-0.012	-0.000	-0.064	0.001	-0.071	-0.005
	(0.034)	(0.021)	(0.056)	(0.035)	(0.052)	(0.040)
τ_{kt}^{Output}	-0.001	-0.001	0.002*	0.000	-0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
τ_{kt}^{Input}	0.002	0.004	-0.008***	-0.004**	-0.005	-0.003
	(0.001)	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)
Mean of Outcome	0.63	0.63	16.04	16.04	13.22	13.22
Observations	29,552	29,552	32,853	32,853	31,219	31,219
R^2	0.931	0.934	0.929	0.935	0.926	0.933
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5) with the addition of controls for whether or not the industry was delicensed or experienced an FDI reform at time t. The sample is restricted to firms in the manufacturing sector. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

D Sample Attrition and Reporting of Data

Table D1: Connections and the Probability of Missing Data

	Log Sales	Log Tot. Exp.	Log Profit	Log TFP	Log Capital	Log Wages	Log Dir. Remun.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Connections							
Connected	-0.0038	0.0026	0.0021	-0.0065	-0.0005	-0.0049	-0.0126
	(0.0096)	(0.0088)	(0.0085)	(0.0053)	(0.0060)	(0.0087)	(0.0115)
Mean of outcome	0.44	0.29	0.29	0.73	0.25	0.37	0.74
Observations	112,485	112,485	112,485	112,485	112,485	112,485	112,485
R^2	0.757	0.720	0.720	0.894	0.719	0.744	0.658
Panel B: Connections and Tariffs							
Connected	0.0008	-0.0036	-0.0014	-0.0113	-0.0032	0.0025	-0.0317
	(0.0121)	(0.0121)	(0.0119)	(0.0121)	(0.0126)	(0.0133)	(0.0202)
Connected $\times$ τ_{kt}^{Output}	0.0001	0.0001	0.0000	0.0001	0.0000	-0.0001	-0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0005)
Connected $\times$ τ_{kt}^{Input}	-0.0018	-0.0014	-0.0013	-0.0014	-0.0013	-0.0019**	-0.0015
	(0.0012)	(0.0018)	(0.0018)	(0.0010)	(0.0015)	(0.0008)	(0.0015)
Mean of Outcome	0.28	0.25	0.25	0.31	0.23	0.27	0.67
Observations	42,889	42,889	42,889	42,889	42,889	42,889	42,889
R^2	0.733	0.734	0.734	0.753	0.738	0.736	0.645
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the results from testing whether politically connected firms to a greater extent avoid reporting data on key outcome variables. The dependent variable in each column is defined as a dummy equal to 1 if a firm did not report data on the outcome variable in year t. *Connected* is a dummy variable equal to 1 if a firm is connected to the winner and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. Controls are a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician, a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. In Panel B, controls also include τ_{kt}^{Output} and τ_{kt}^{Input}. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table D2: Connections, Tariff Reductions, and Sample Attrition

	Pr(Leave Sample)	
	(1)	(2)
Panel A: Connections		
Connected	-0.004	-0.002
	(0.006)	(0.005)
Mean of Outcome	0.03	0.03
Observations	113,096	113,087
R^2	0.299	0.300
Panel B: Connections and Tariffs		
Connected	-0.0007	0.0006
	(0.0066)	(0.0068)
Connected $\times$ τ_{kt}^{Output}	-0.00004	-0.00006
	(0.00012)	(0.00012)
Connected $\times$ τ_{kt}^{Input}	0.00003	0.00015
	(0.00072)	(0.00074)
Mean of Outcome	0.02	0.02
Observations	42,894	42,889
R^2	0.289	0.291
Firm & Year FE	Yes	Yes
Control: Ctd Pol	Yes	Yes
Controls	No	Yes
Industry Trend	No	Yes

Notes: This table reports the results from testing whether politically connected firms are more likely to drop out from the sample. The dependent variable in each column is defined as a dummy equal to 1 if a firm did not any report data in year t. *Connected* is a dummy variable equal to 1 if a firm is connected to the winner and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable equal to 1 if a firm is connected to either the winner or runner-up. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table D3: Balanced Sample—Effect of Political Connections on Firm Size

	Log Sales		Log Total Expenses		Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All Firms						
Connected	0.25***	0.19**	0.30***	0.22***	-0.00069	-0.0014
	(0.063)	(0.090)	(0.096)	(0.081)	(0.0010)	(0.0016)
Mean of Outcome	16.27	16.27	16.19	16.19	20.73	20.73
Observations	14,116	14,116	15,688	15,688	15,706	15,706
R^2	0.814	0.855	0.831	0.867	0.518	0.598
Panel A: Manufacturing Firms						
Connected	0.18*	0.24	0.28**	0.33***	0.00014	0.00042
	(0.096)	(0.15)	(0.13)	(0.11)	(0.0015)	(0.0021)
Mean of Outcome	16.86	16.86	16.85	16.85	20.73	20.73
Observations	8,643	8,643	8,828	8,828	8,825	8,825
R^2	0.833	0.863	0.829	0.860	0.531	0.624
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry Trend	No	Yes	No	Yes	No	Yes

Notes: This table reports the estimated effect of political connections on firm size outcomes, as specified by Equation (1). The analysis is restricted to firms that are observed in the data for all years between 1990 and 2003. Panel A reports results from the full sample of firms, whereas Panel B restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table D4: Balanced Sample—Effect of Political Connections on Firm Production

	Log TFP		Log Capital		Log Wage Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: All Firms						
Connected	-0.0079	0.030	0.17**	0.12*	0.21***	0.14*
	(0.028)	(0.033)	(0.077)	(0.069)	(0.056)	(0.076)
Mean of Outcome	0.45	0.45	16.64	16.64	13.63	13.63
Observations	8,440	8,440	15,840	15,840	15,197	15,197
R^2	0.931	0.939	0.889	0.914	0.849	0.883
Panel A: Manufacturing Firms						
Connected	-0.0079	0.030	0.10	0.12	0.18*	0.20*
	(0.028)	(0.033)	(0.11)	(0.097)	(0.089)	(0.10)
Mean of Outcome	0.45	0.45	17.00	17.00	14.16	14.16
Observations	8,440	8,440	8,879	8,879	8,728	8,728
R^2	0.931	0.939	0.886	0.910	0.861	0.886
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry Trend	No	Yes	No	Yes	No	Yes

Notes: This table reports the estimated effect of political connections on firm production outcomes, as specified by Equation (1). The analysis is restricted to firms that are observed in the data for all years between 1990 and 2003. Panel A reports results from the full sample of firms, whereas Panel B restricts the analysis to firms in the manufacturing sector only. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table D5: Balanced Sample—Effect of Political Connections and Tariff Reductions on Firm Size

	Log Sales		Log Total Expenses		Log Profit	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	0.0159	0.0144	0.0128*	0.0089	-0.0001	-0.0002**
	(0.0098)	(0.0106)	(0.0071)	(0.0065)	(0.0001)	(0.0001)
Connected × τ_{kt}^{Output}	-0.00147	-0.00199	-0.00093	-0.00218	-0.00002	-0.00003
	(0.00220)	(0.00227)	(0.00169)	(0.00167)	(0.00002)	(0.00002)
Connected	0.258*	0.185	0.324***	0.323***	0.001	0.002
	(0.139)	(0.129)	(0.098)	(0.122)	(0.002)	(0.003)
τ_{kt}^{Input}	-0.0071*	-0.0020	-0.0045	-0.0037	-0.0004	0.0003***
	(0.0041)	(0.0045)	(0.0030)	(0.0069)	(0.0003)	(0.0001)
τ_{kt}^{Output}	0.0012	-0.0017	0.0001	-0.0016	0.0000	-0.0000
	(0.0019)	(0.0011)	(0.0019)	(0.0010)	(0.0000)	(0.0000)
Mean of Outcome	16.85	16.85	16.85	16.85	20.73	20.73
Observations	8,541	8,541	8,726	8,726	8,723	8,723
R^2	0.832	0.863	0.828	0.860	0.533	0.625
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry Trend	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm size as specified in Equation (5). The sample is restricted to firms in the manufacturing sector and to firms that are observed in the data for all years between 1990 and 2003. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

Table D6: Balanced Sample—Effect of Political Connections and Tariff Reductions on Firm Production

	Log TFP		Log Capital		Log Wage Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected × τ_{kt}^{Input}	-0.000	0.001	0.009**	0.006**	0.011	0.009
	(0.003)	(0.003)	(0.004)	(0.003)	(0.007)	(0.007)
Connected × τ_{kt}^{Output}	0.0003	0.0002	-0.0006	-0.0015	-0.0018	-0.0028*
	(0.0006)	(0.0006)	(0.0016)	(0.0012)	(0.0013)	(0.0014)
Connected	0.008	0.015	0.085	0.106	0.254***	0.206*
	(0.032)	(0.031)	(0.106)	(0.098)	(0.094)	(0.107)
τ_{kt}^{Input}	0.002	0.001	-0.007***	-0.007**	-0.004	-0.006
	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.006)
τ_{kt}^{Output}	-0.001	-0.001**	0.002	-0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Mean of Outcome	0.44	0.44	17.00	17.00	14.15	14.15
Observations	8,392	8,392	8,777	8,777	8,626	8,626
R^2	0.931	0.939	0.886	0.910	0.860	0.885
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Control: Ctd Pol	No	Yes	No	Yes	No	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry Trend	No	Yes	No	Yes	No	Yes

Notes: This table reports estimates of how the tariff reductions affect the returns to political connections in terms of firm production as specified in Equation (5). The sample is restricted to firms in the manufacturing sector and to firms that are observed in the data for all years between 1990 and 2003. *Connected* is a dummy variable taking the value of 1 if a firm is defined as connected to the politician who won the election and 0 otherwise. τ_{kt}^{Output} and τ_{kt}^{Input} denote output and input tariff rates at the 4-digit NIC industry level and are demeaned. The control *CtdPol* is a dummy variable taking the value of 1 if a firm is connected to either the winner or runner-up politician and 0 otherwise. Other controls are a dummy variable taking the value of 1 if the politician is an incumbent, a dummy variable taking the value of 1 if the politician stood for election in the preceding election, a dummy variable taking the value of 1 for female candidates, a dummy variable taking the value of 1 if the politician's party is part of the majority/coalition in the state government, a dummy variable each for the two major parties (the BJP and the INC) taking the value of 1 if the politician belongs to the party, a dummy variable taking the value of 1 for reserved constituencies (SC/ST), the total number of contestants who stood for election, and the turnout of the election. Standard errors are two-way clustered by constituencies and industries. Statistical significance is indicated by *** at 1%, ** at 5%, and * at 10%.

E RD Identification Assumption

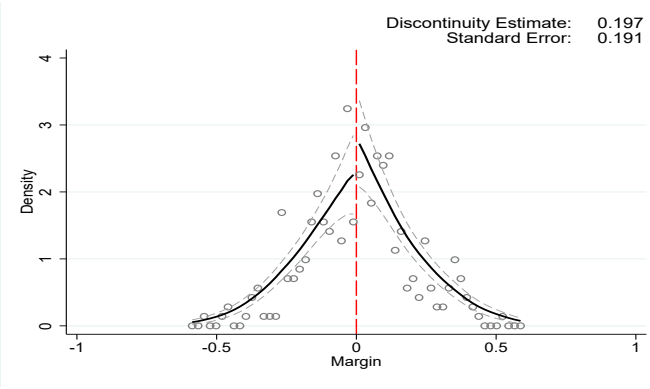
For θ_1 in Equation (4) to be well identified, all confounding factors must vary smoothly at the treatment threshold. This assumption would be violated if firms with structural advantages were disproportionately connected to politicians who win close elections (see the discussion by Eggers et al. (2015)). To alleviate these concerns, we check the density of the running variable around the threshold (McCrary, 2008) and test for continuity of pre-determined covariates.

Figure E.1 shows the density test as proposed by McCrary (2008). We find no evidence of bunching on either side of the threshold. This implies that politicians with connections to firms are not more likely to win close races. In Figure E.2, we validate the continuity assumption by estimating Equation (4) using pre-determined variables at outcomes. For comparability reasons, we standardize each outcome variable to mean 0 and standard deviation 1. The results support that pre-determined political variables, such as incumbency status, candidate gender, prior runner status, alignment status, political parties, constituency reservation status, number of candidates, and turnout, are balanced across the threshold. Moreover, we find no discontinuity in tariffs at the threshold. Finally, we investigate the continuity of pre-treatment firm outcomes. We find no evidence of imbalances along these outcomes.[44] Together, these findings validate that any discontinuity in firm outcomes around the threshold can be attributed to firms gaining political connections.

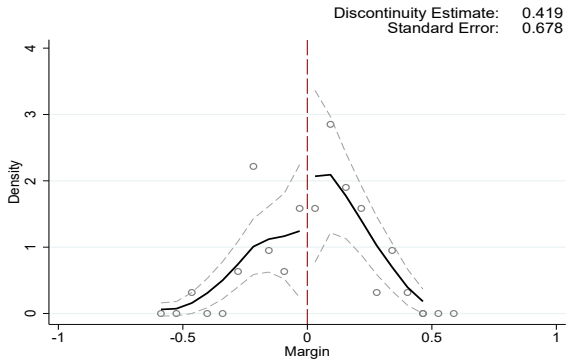
Finally, since firms should not be able to switch connection status conditional on observing the election outcome, we define firms' connection status for the whole election term by using its board composition in the year prior to the election. As previously discussed, this does not affect the results since firms tend not to adjust their board composition.

[44] A natural candidate year for determining pre-treatment status is the year before an election. However, since a firm in principle could be treated in the preceding election, we instead use the first observed value of these variables as the pre-treatment outcome.

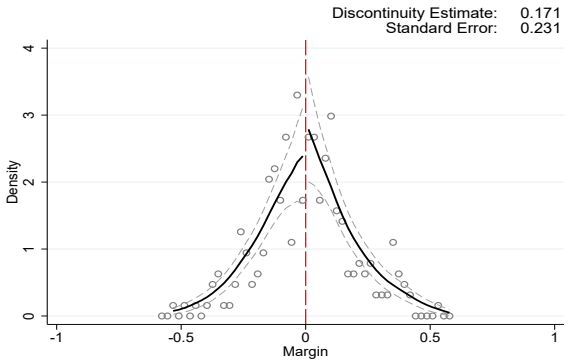
Figure E.1: Robustness—Density Test for Manipulation of the Running Variable



(a) Full Period



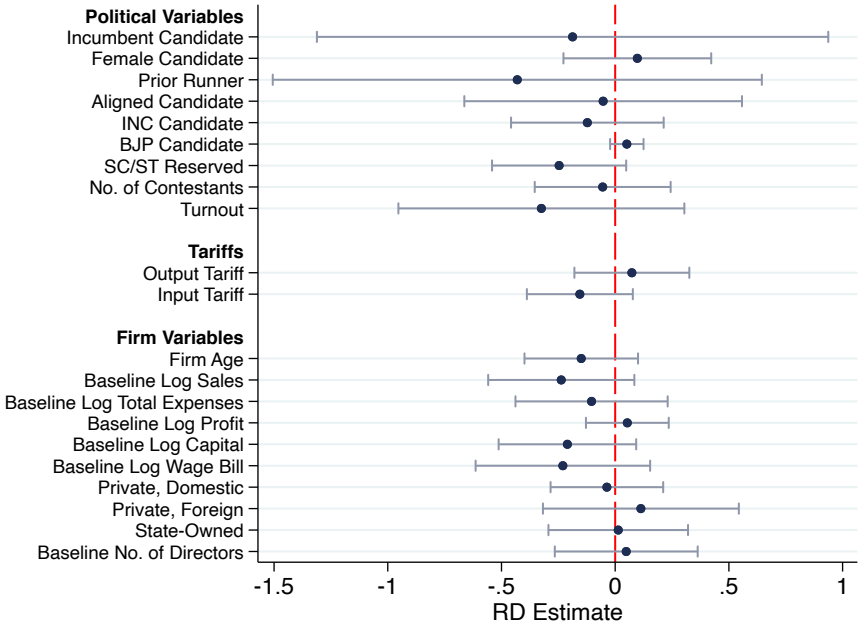
(b) Before Trade Reform



(c) After Trade Reform

Notes: This figure shows the density of politicians with different win-margins and plots a nonparametric regression to each half of the distribution, following McCrary (2008), to test for a discontinuity at the zero threshold. Panel (a) reports the discontinuity estimate for the full sample period. Panels (b) and (c) report estimated discontinuities for the pre- and post-reform periods, respectively.

Figure E.2: Robustness—Continuity Test for Baseline Variables



Notes: This figure shows the continuity test for pre-determined outcome variables by regressing each row variable on Connected, Margin, and their interaction, along with the set of fixed effects described in Section 4. The regressions are weighted by a triangular kernel to give more weight to observations close to the threshold. All outcome variables are standardized to mean 0 and standard deviation 1 for comparability. Each baseline firm variable is pre-determined in the sense that they reflect the value of the outcome variable measured at the first observation year for a firm. The estimation bandwidth is 6.5% to reflect an average of the optimal bandwidths used for the main RD results. Standard errors are two-way clustered by industry and constituency.