

The Decision to Privatize: The Role of Political Competition and Patronage^{*}

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Abstract

We investigate the role of political competition and patronage in the privatization of government-owned enterprises by using a unique firm-level data set from India. We find that the government is reluctant to privatize firms located in regions where the ruling party faces more political competition from parties in opposition. We also find that no government-owned enterprise located in the home state of the politician in charge of that enterprise is ever privatized. These results are robust to firm-level characteristics such as profitability, size, and the influence of labor groups; to industry and time effects; and to state-level differences in income, education, and urbanization.

Key Words: State-Owned Enterprises, Government Ownership, Political Economy, Interest Groups, Emerging Markets, Economic Reform.

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1. Introduction

The sale of government-owned enterprises to private owners has yielded more than \$1 trillion in revenues for governments across the world (Megginson and Netter (2001)), has improved the performance of government-owned enterprises (La Porta and Lopez-de-Silanes (1999), Gupta (2005) among others), and facilitated the development of financial markets (Megginson, Nash, Netter, and Poulsen (2004)). Yet, the evidence suggests that governments still control a substantial number of government-owned enterprises across the world.¹ Given the documented benefits, why are there widespread delays in privatization, with governments worldwide choosing to sell some firms but not others to private owners?

We adopt a political economy approach to address this question. While the benefits of privatization, such as financial market development, tend to be dispersed across the population, the costs of privatization, such as layoffs of surplus workers and the loss of private benefits of control for politicians, tend to be geographically concentrated among a small group. To understand how these concentrated costs can slow down the process of privatization, we investigate the role of political competition and patronage in the privatization decision.

Since the adverse effects of privatization are likely to be concentrated in the region where a firm operates, the ruling party may lose votes in that region because of organized opposition from interest groups that are adversely affected, such as local government-owned enterprise workers. Hence, the ruling party may make a political decision not to privatize firms located in regions where it faces strong opposition from other political parties and is vulnerable to the effects of voter backlash. However, the government also may choose to reward its political supporters by not privatizing firms located in regions where it enjoys strong support.² Hence, the question of the effect of political competition on privatization is an empirical one.

To study the political economy determinants of privatization we need firm-level data, not only on privatized firms, but also on the government-owned enterprises that are never privatized.

¹ Gupta (2005) shows that, more than a decade after initiating privatization, the Indian government sold just 16% of equity on average across all government-owned enterprises. Boubakri, Cosset, and Guedhami (2005) show that the government remains the controlling shareholder in about 40% of their sample of firms immediately after privatization. Bortolotti and Faccio (2004) find that the government remains the largest shareholder in more than 62% of their sample of privatized companies from OECD countries. La Porta, Lopez-de-Silanes, and Shleifer (2002) show that despite the wave of bank privatizations in the 1980s, the average share of banking assets controlled by the government remained at 48% in banks from 92 countries.

² For example, Sapienza (2004) finds that government-owned banks in Italy provide loans with lower interest rates in the regions where the party that controls the banks enjoys strong voter support.

Data on the latter companies are typically not available for many countries. We use a unique firm-level database that covers 80% of the enterprises owned by the federal government of India. Using India as the empirical context has other advantages as well. First, it is a multi-party democracy with robust political competition among its political parties, a rarity among emerging markets. Second, in a single-country study, we can control for institutional differences across countries, such as legal systems and colonial legacies, and use micro-level data to investigate the influence of politicians' incentives. Finally, by using India as the empirical context we can exploit regional differences across the different Indian states. In terms of population, most Indian states are larger than most European Union nations, and there is significant variation in voter support for the different political parties across the states.

We find that the federal government accelerates the rate of privatization for firms in states where the ruling party faces less political competition. Specifically, the rate of privatization for a firm is significantly faster if it is located in a state where the ruling party and its allies won a large proportion of the seats in the elections to the federal parliament. The opposite is also true even though the electoral weakness of the ruling party does not necessarily translate to the strength of the main opposition in the multi-party context: Privatization is significantly delayed if a firm is located in a state where the largest opposition party in that state won a large share of the seats. Rather than rewarding a supportive electorate, it appears the government delays privatization in states where it faces more competition from opposition parties, and where the adverse effects of a political backlash may be more significant. Hence, the dispersed benefits and geographically concentrated costs of privatization appear to play a significant role in the privatization decision.

We check the robustness of our results in several ways. First, in all the specifications we control for firm-level characteristics such as sales revenues, profitability, and workforce size, as well as year and industry effects. Second, we investigate whether political competition is a proxy for the influence of other interest groups that oppose privatization, such as government-owned enterprise workers. We find that privatization is delayed for firms that have large wage expenses or workforces or are large employers in the state in which they are located. However, the effects

of political competition remain robust to controlling for the influence of labor. Third, we show that the political competition results do not simply reflect the ideological positions of the political parties. We find that the strength of anti-privatization leftist parties in a state does not have a significant influence on the privatization decision, and political competition continues to matter when we control for the strength of these parties. Fourth, we show that our results are not a proxy for state-level demographic characteristics such as income, education, and urbanization, which may affect popular support for privatization. Finally, we show that our results are robust to alternative measures of political competition.

Since politicians may obtain private benefits from controlling government-owned enterprises (Shleifer and Vishny (1994), Boycko, Shleifer, and Vishny (1996), and Dinc (2005)), we also investigate the role of political patronage in the privatization decision. For example, politicians may influence the hiring and purchase decisions of government-owned enterprises so that they favor political supporters.⁶ Retaining control over a firm is likely to be a greater priority for a politician if the firm is located in the politician's home state. In other words, catering to local supporters to increase the chances of being reelected is likely to be more important in the politician's home state. We find that none of the firms located in the same state as the politician in charge are privatized.

The economic reforms of 1991 and the bulk of privatizations in the last decade were undertaken by the federal government in power between 1991 and 1996. In all these privatizations the government sold minority equity stakes on domestic and international stock markets, which is a common strategy adopted by governments around the world (LaPorta, Lopez de Silanes, and Shleifer (2002), Bertolotti and Faccio (2004), Boubakri, Cosset, and Guedhami (2005), and Gupta (2005)). Evidence from the existing literature and the subsequent pattern of majority sales suggests that partial privatizations matter. In particular, Gupta (2005) shows that partial privatization has a significant positive impact on the profitability of Indian government-owned enterprises, and that partially privatized firms also are more likely to sell majority stakes later. Hence, politicians have an incentive to resist partial privatizations because these firms are likely to be candidates for eventual majority sales.

⁶ From the corporations' perspective, Faccio (2005) finds that the political connections of board members enhance firm value.

There is a growing theoretical and empirical literature on the role of political institutions in privatization. In particular, Perotti (1995) develops a model to show that governments may retain a passive stake in companies to signal to investors their commitment to not implement policies adverse to the firm; and Biais and Perotti (2002) argue that conservative governments are more likely to privatize to induce median class voters to buy enough shares to shift political preferences away from left wing parties.

Among empirical studies, Jones, Megginson, Nash, and Netter (1999) show that governments adopt strategic sale methods that are consistent with political objectives, while Bortolotti and Pinotti (2003) find that privatization is more likely in majoritarian political systems. These studies provide insight into how cross-country differences in political institutions can explain why some countries privatize more than others, or adopt different methods of privatization. However, our focus is different: We study why governments choose to privatize some firms but not others.⁷

Our paper is related to Clarke and Cull (2002) who find that poor performance and surplus employment increases the likelihood of bank privatization in Argentina, while the political affiliation of the provincial government does not have a robust impact on the probability of privatization. Our paper differs in several ways. First, we focus on the role of political competition between governing and opposition parties in the privatization process. Second, we investigate political patronage arguments in privatization by identifying and connecting politicians to the firms they control. Third, we analyze all non-financial, government-owned enterprises in India, rather than a single industry.

Our paper is also related to the literature on the politics of financial and economic reforms. Kroszner and Strahan (1999) investigate the influence of interest groups on the pattern of banking sector deregulation across U.S. states; and Brown and Dinc (2005) show the role of politics in the government's decision to intervene in failing banks in emerging markets. Motivated by Grossman and Helpman (1994), empirical work by Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000) investigates the relationship between the monetary contributions to politicians and policy outcomes. However, in many countries, including India, corporate political contributions are illegal and tend to be made under the table.

⁷ The question of how a government maximizing revenues from privatization sales will sequence the sale of firms is investigated theoretically in an auction model by Chakraborty, Gupta, and Harbaugh (2004), and empirically by Gupta, Ham, and Svejnar (2002).

The paper is organized as follows: In section 2 we describe the privatization program and the Indian political system, in section 3 we describe the data, in section 4 we present the hypotheses and the results, in section 5 we provide robustness checks, and in section 6 we conclude.

2. Background on Privatization and the Political System in India

2.1 Government-owned Enterprises

Government ownership of firms in India was originally justified by concerns that the private sector would not undertake projects requiring large investments with long gestation periods. In the late 1960s there was a period of rapid nationalization of firms in all sectors, so that by the mid-seventies the public sector accounted for one-fifth of GDP (Goyal, 1999). The size of the state sector has increased in recent years. In 2000 these enterprises accounted for approximately one-fourth of GDP and more than two-fifths of the total capital stock in India.

Federal government-owned firms include departmental enterprises that are run directly by government ministries, such as the railways, the postal service, telecommunications, and power, as well as enterprises that have separate boards of directors. These firms are large employers accounting for 10% of the total workforce in the organized sector.⁸ They also tend to be overstaffed. According to the government's own numbers, the average ratio of wages to sales between 1990 and 1998 was 18.9% among government-owned manufacturing firms, more than twice that of private manufacturing firms during the same period (Department of Disinvestment (2001)). Over half the enterprises owned by the federal government are loss-making, and the majority of these companies perform far worse in comparison to private firms in the same industry. Between 1990 and 1998, while the ratio of returns to sales averaged -4.4% for government-owned manufacturing firms, returns to sales averaged 6.7% among private manufacturing firms (Department of Disinvestment (2001)). It has been argued that one of the main reasons for the underperformance of government-owned enterprises is the lack of performance based incentives for employees (Banerjee, Cole, and Duflo (2004)).

Individual state governments own approximately 941 firms, primarily in the power and agricultural sectors. Only a handful of state governments have launched privatization programs

⁸The total workforce in registered companies was estimated at 27 million in 1997 (Department of Disinvestment, 2001).

and that too with limited success. We focus on firms owned by the federal government because these account for about 85% of the total assets of all government-owned companies.

In response to a balance of payments crisis in 1991, India undertook sweeping economic reforms that included deregulation and privatization. Out of 276 firms, 41 firms sold equity on domestic and international capital markets between fiscal years 1991 and 1995.⁹ Though some of these firms sold equity multiple times, we restrict our analysis to the first sale to avoid the potential endogeneity that may arise if past equity sales affect the probability of subsequent equity sales. The sale methods adopted by the government include auctions and public offerings in domestic markets, and global depository receipt issues in international markets. Although the government continued to hold the majority of shares, these firms became subject to monitoring by minority shareholders and to the transparency and disclosure requirements of being listed on the stock market (Gupta (2005)).

Following the defeat of the Congress party in the May 1996 federal elections, the privatization program was in hiatus until the election of the Bharatiya Janata Party (BJP) to the national government in 1999. About 16 firms sold majority stakes to private owners under the BJP government. Eight of these 16 firms are included in our data as privatized firms because they also sold equity stakes between the years 1991 and 1996. Due to the small number of additional sales we focus on all the privatizations undertaken by the government that was in power between 1991 and 1996.

2.2 *Political System*

The most populous democracy in the world, India has a British-style parliamentary system where representatives are directly elected to the *Lok Sabha*, the lower house in the federal government. Unlike the U.S. Senate, the upper house of the national government, the *Rajya Sabha*, does not have legislative powers and its representatives are not directly elected by citizens. Representatives to the *Lok Sabha* are elected from 543 single-member districts distributed across 35 states, and the political party or alliance of parties that wins the majority of districts forms the national government, headed by the Prime Minister and a cabinet of ministers. Statewise distribution of seats in the *Lok Sabha* depends on the population in each state. Since

⁹ Fiscal year t starts in April of calendar year t and runs through March of calendar year $t+1$.

privatization began after the 1991 *Lok Sabha* elections, we base our analysis on the results of that election.

Following India's independence from the United Kingdom in 1947, the main political party was the pro-independence, ideologically center-left Congress party. This party was in power at the federal level for most of the years following independence. In the 1991 elections the Congress party and its partners won the majority of districts and formed the government. The economic reforms of 1991 were initiated, and the privatizations were carried out by the Congress party-led government until it lost the elections in 1996.

Approximately 450 political parties participated in the 1991 elections. It is common for national political parties to establish alliances with each other as well as smaller regional parties before the elections in order to increase their chances of forming a majority government. A political party may support another party's candidate in the districts where the latter party is strong. These candidates, in turn, support the national parties in parliament when they are elected and are often represented in the government if the alliance wins the election. Hence, it is more appropriate to study the electoral performance of political alliances rather than that of individual parties.

3. Data

We observe financial data on 220 of 276 manufacturing and service sector firms owned by the federal government of India, although the panel is unbalanced and not every data item is available for all the firms. The data was collected by the Centre for Monitoring the Indian Economy (CMIE) from company reports. Seven very small firms that have annual sales less than 10 million Indian National Rupees during the sample period are excluded; none of these firms were privatized.¹⁰ Missing employment data on the number of workers is supplemented with data from the Public Enterprise Survey published by the Government of India.

The data start in fiscal 1990, one year prior to the launch of the economic reforms of 1991, to allow a lag structure in the regression analysis and end in March 1996 (fiscal 1995), shortly before the next election. Data on privatization transactions were obtained from the Disinvestment Commission of the Government of India, the World Bank Privatization

¹⁰ The regression results described below do not change if we include the small firms in the sample and are available on request. The current INR/\$ exchange rate is about 45 INR/\$.

Transactions Database, and from news sources. Data on the location of the main operations or main plant of each firm is from CMIE and we supplement it with information obtained directly from the companies. About 80% of companies have all their main operations located in only one state. For companies with multiple plants in different locations, we define the main plant as the one with the largest asset base and use its location as the location for the firm.

As described in the previous section, privatizations started in fiscal 1991 and we observe financial data on all but one of the firms that were privatized by the end of fiscal 1995 when the ruling Congress party lost the elections. Table 1 provides sample statistics for the main variables used in the analysis and compares privatized firms with firms that remain 100% government owned. Here, and in the regression analyses below, we include each privatized firm only until the year of privatization in order to avoid capturing the effects of privatization on subsequent firm characteristics. All non-privatized firms are followed until the end of fiscal 1995, or the latest year the data are available.

Comparing firms before privatization to firms that are not privatized during the sample period (fiscal years 1990 to 1995) we note several differences. The average annual sales of privatized firms are about 35 billion Indian National Rupees, significantly larger than the average sales of firms not chosen for privatization. Government-owned firms have an average ratio of earnings before interest, tax, depreciation, and amortization (EBITDA) to sales equal to 0.4%. The privatized companies earn positive profits, with an average ratio of EBITDA to sales equal to 24.7%, while the average for non-privatized companies is -1.6%; the difference is statistically significant at the 1% level. This comparison does not capture any performance improvements due to privatization because the privatized companies are included in the sample only until the year in which they first sell equity. Privatized companies are also, on average, less labor-intensive than their fully government-owned counterparts as measured by the number of workers per sales and the total wage expenses per sales. We control for these differences by including size, profitability, and labor characteristics in all the regressions.

We collect state-level data on the electoral performance of all national and regional political parties in the 1991 federal lower house elections from the Election Commission of India, the regulatory agency in charge of conducting the elections. Information on which parties belong to the main alliances is obtained from press sources and election Web sites.

We define the largest opposition party in each state as the party or the alliance of parties, other than the ruling party alliance, that won the highest proportion of seats in the federal lower house elections from that state. Since there are multiple parties, the largest opposition party in each state varies across the different Indian states.

India has a majoritarian electoral system in which the candidate receiving the most votes in a district will win that district's seat. To win, a candidate only needs a plurality rather than a majority of votes. As a result, political parties are likely to care about both their absolute electoral performance and their performance relative to that of opposition parties. In our tests we use variables that capture both.

We create several political competition variables using state-level data from the parliamentary elections and taking the election alliances into account. First, as a measure of the absolute political strength of the ruling party in the federal lower house we use the proportion of seats from a state won by the ruling party alliance - *Government Seat Share*. We measure the political strength of opposition parties in the federal lower house by looking at the largest proportion of seats from a state belonging to a political alliance that is not the ruling party alliance - *Largest Opposition Seat Share*. Notice that although the two variables are related, the latter is not just equal to $1 - \text{Government Seat Share}$ because in each state there are multiple political parties contesting the elections. We measure the ruling party's relative strength by *Government's Relative Seat Strength*, which is the difference between the first two variables. As a robustness check we also use alternative measures of political competition including the *Win Ratio*, which is the ratio of seats won by a party alliance in a state to the total number of contestants fielded by the alliance in that state, and the vote shares received by political parties in each state.

Table 2 provides summary statistics for all the political competition variables used in the paper. Comparing electoral data across states with privatized firms and non-privatized firms, we note that the main operations of privatized firms tend to be located in states where the proportion of seats won by the ruling party and its allies is significantly higher at 58.2%, compared to 43.4% in states where the non-privatized firms are located. On the other hand, firms not selected for privatization tend to be disproportionately located in states where the largest opposition parties won a significantly higher proportion of seats.

To investigate the role of political patronage we use annual data from the Comptroller and Auditor General of India (the main auditing agency for government-owned enterprises) to match each firm to the cabinet minister who has jurisdiction over that firm. Up to 32 ministries are involved with the management of these firms but the ministerial portfolios vary both cross-sectionally and over time. For example, the Department of Heavy Industry controls the greatest number of enterprises – 51 firms out of 276, while the Ministry of Petroleum and Natural Gas controls 21 companies. Although the Heavy Industry ministry controls more firms, just eight enterprises in this ministry were privatized between fiscal years 1991 and 1995, compared to 10 companies in the Petroleum ministry. The identity and the home state of the cabinet ministers is obtained from the Election Commission of India to determine whether a firm’s main operations are located in the home state of the minister in charge of that firm. We investigate the role of political patronage in the privatization decision below.

4. Results

4.1 *Political Patronage*

It is often argued that one of the main causes of inefficiency in government-owned enterprises is interference by politicians in the operations of the firm (Shleifer and Vishny (1994)). If the politician in charge of a firm is also elected from the state where the firm is located, s/he may be reluctant to privatize that firm because the ability to secure campaign contributions and reelection through political patronage is likely to matter more in the politician’s home state.¹¹ To test this hypothesis, the cabinet minister in charge of each firm is identified for each firm-year. The minister’s home state is then compared with the state where the firm’s main operations are located.

The results are presented in Table 3. We were able to match all but three of the firms in our sample to the minister in charge of the firm between fiscal 1991 and 1995 (446 minister-firm pairs). Due to the lack of independence from one year to the next if the same minister remains in charge of a given firm, an uninterrupted sequence of the minister’s home state for that firm is taken as one minister-firm observation. During this period the home state of the cabinet minister in charge of a firm matches the state where the firm’s main operations are located in 23 cases.

¹¹ Boycko, Shleifer, and Vishny (1996) develop a model of privatization where politicians enjoy private benefits from SOEs in the form of the political support of employees. Besley, Pande, and Rao (2005) find that politicians disproportionately benefit from public transfer programs in India.

Interestingly, not a single one of these firms were privatized. Though regression analysis is not possible because of the lack of heterogeneity, the results suggest that political patronage plays an important role in the privatization decision.

4.2 *Political Competition*

We test the following hypothesis: Does political competition affect the likelihood of privatization? We use the exponential hazard model since it incorporates both the privatization of a given government-owned enterprise and the time of privatization.¹² More specifically, the hazard rate of privatization is given by

$$h(t) = \exp(\boldsymbol{\beta}' \mathbf{x}_i(t)),$$

where $\mathbf{x}_i(\mathbf{t})$ is the vector of firm and state level explanatory variables, which include both time-varying and time-constant variables. In this specification, the expected time until privatization varies according to the financial and political characteristics specific to firms, captured by $\mathbf{x}_i(\mathbf{t})$. A description of the exponential hazard model may be found in Wooldridge (2001) among others. The time of privatization is determined by the government's first sale of shares in the firm to the public. To account for firm-specific characteristics that can have an effect on privatization we include profits, sales, and the ratio of the wage bill to sales at the firm level in the specifications; these firm-specific variables are lagged one year. The regressions also include industry and year fixed effects. Thus, the framework incorporates the fact that in some industries and in some years there are no privatizations. Finally, the heteroskedasticity-robust standard errors are also corrected for clustering at the firm level. Throughout the paper we report the coefficients, not the hazard ratios, from the estimations.

We start by exploring the role of firm profitability, size, and the influence of the firm's workforce on the likelihood of privatization. In particular, we include the logarithm of *Sales* as a size measure, earnings before interest expenses, taxes, and depreciation and amortization, (*EBITDA*), divided by sales as a measure of profitability, and the ratio of wages to sales as a measure of the bargaining power of the firm's workforce. From the results in column 1 of Table 4 we note that larger, more profitable firms with lower wage expenses are more likely to be privatized early. These results are significant at the 1% level.

¹² Results from estimating a Cox proportional hazard specification are similar to the exponential hazard specification and are available on request.

We use several measures of political competition between the governing and opposition party alliances in the state where a firm is located. From the second column of Table 4 we note that the coefficient of *Government Seat Share*, which is the proportion of seats won in a state by the ruling party alliance in the federal lower house elections, is positive and statistically significant at the 5% level. On the other hand, the coefficient of *Largest Opposition Seat Share*, which is the largest proportion of seats won in a state by a coalition of parties other than the ruling alliance, is negative and statistically significant, again at the 5% level. Note that which opposition party wins the largest share of seats and hence is identified as the largest opposition party in that state, typically differs across the different states. From column 4 of Table 4 we note that *Government's Relative Seat Strength*, which is the difference between the proportion of seats won by the governing and opposition party alliances, has a positive coefficient that is also statistically significant at the 5% level. This result suggests that privatization is more likely to be delayed or not occur at all in states where the ruling party faces a close election or lags behind opposition parties, compared to states where the ruling party enjoys wide support.

The effects of political competition are also economically significant. For example, an increase in *Government Seat Share* from the 25th percentile (12% of seats in that state won by the ruling alliance) to the 75th percentile (79% of seats) accelerates the pace of privatization by 131%, while an increase in *Largest Opposition Seat Share* from the 25th (19% of seats in that state won by the largest opposition alliance) to the 75th percentile (71% of seats) slows the pace by 61%. Correspondingly, an increase in *Government's Relative Seat Strength* from the 25th to the 75th percentile increases the pace of privatization by 150%.

Our results suggest that rather than rewarding a supportive electorate, the government instead chooses to minimize the potential adverse effects of a political backlash by privatizing firms that are located in states where the ruling party does not face a lot of competition from opposition parties. Facing a trade-off between the locally concentrated costs and the dispersed benefits of privatization, we find that political competition has a significant influence on the government's decision to privatize. We discuss additional robustness tests for these results in Section 5 below.

5. Additional Robustness Checks

5.1 *Role of Labor*

As in other countries, government-owned enterprises in India tend to be overstaffed, and organized labor has been a vocal opponent to privatization because of potential layoffs.¹³ Hence, it may be the case that the political competition results instead capture the influence of special interest groups, such as organized labor, across the different states. We now investigate whether political competition continues to matter once we control for alternative measures of worker influence. The results from the regression analysis are reported in Table 5.

We find that the number of employees divided by total sales, *Workers/Sales*, has a negative coefficient that is statistically significant at the 5% level. Since all the regressions include industry dummies it is unlikely that this variable is a proxy for labor-intensive industries. We also find that the number of employees divided by the total urban workforce in the state where the firm's main plant is located, *Workers/State Workforce*, has a negative coefficient that is statistically significant at the 1% level. Intuitively, opposition to privatization is likely to be greater if the firm is a large employer in a state because there are fewer outside opportunities for workers. Olson's (1965) theory of collective action suggests that the influence of an interest group will depend on how organized the group is. From Table 5 we note that *Unionization*, measured as the total membership in the major labor unions in 1989 in the state where the firm's main factory is located, normalized by the total urban workforce in that state, has a negative coefficient, although it is not statistically significant.¹⁴

These results suggest that government-owned enterprise workers may have successfully delayed or prevented privatization. However, the results also show that political competition is not a proxy for the influence of labor groups since all the political variables retain their previous levels of statistical significance.

¹³ Most major labor unions in India have opposed privatization and organized massive protests. For example, quoting BBC News, May 21, 2003 (*Millions strike against privatization*), "The strike was called by trade unions including the All India Trade Union Congress (AITUC), Centre for Indian Trade Unions (CITU), and the Hind Mazdoor Sabha, who claimed about 40 million workers were participating in the walk-out. They are calling for a halt to the government's ongoing privatisation and plans to change labour laws."

¹⁴ The most recent data on state-level union membership is for 1989 since the collection of these data was subsequently prohibited.

5.2 *Political Ideology*

The political ideology of the governing and opposition parties may play a role in the privatization decision. For example, Biais and Perotti (2002) suggest that right-wing governments are more likely to support widespread share ownership through privatization. Since the ideology of the ruling party does not vary in our analysis, we instead consider the strength of the pro-worker leftist parties, which have consistently and vocally opposed privatization, across the states. The results are reported in Table 6. *Leftist Seat Share*, measured as the proportion of seats won by the communist and socialist parties in a state, does not have a statistically significant impact on the likelihood of privatization. However, our main political competition measures remain statistically significant. It appears these results are not a proxy for the political ideology of the different parties, but instead reflect a secular role of political competition.

5.3 *Additional Measures of Political Competition*

To check the robustness of the results to alternative definitions of political competition, we also estimate the regressions in Table 4 using the vote share obtained by the governing and largest opposition alliances in each state. From Table 7 we note that the results are similar in sign and significance to those reported in Table 4.

In columns 4-6 of Table 7 we use another measure of competition, the win ratio, which is the ratio of the number of seats won by a party alliance in a state to the total number of contestants fielded by the alliance in that state. The win ratio differs from the seat shares variables since the parties typically do not field candidates in all election districts. The results are qualitatively similar to the previous section, and suggest that the political competition hypothesis is robust to alternative measures.

5.4 *Regional Characteristics*

We investigate whether the electoral results may be a proxy for state-level demographic characteristics such as income levels (per capita state income), literacy (% of state population that is literate), and urbanization (% of state population living in towns and cities).¹⁵ For example, higher income, educated, or urban voters may be more in favor of market reforms than

¹⁵ Since our analysis of the ruling party's political strength takes the state as the electoral unit, state-fixed effects cannot be included in the regressions.

rural voters.¹⁶ From the results reported in Table 8 we note that none of these factors appear to play a statistically significant role in the privatization decision. However, the political competition results remain robust to these controls.

6. Conclusion

Based on the fact that most privatizing governments sell government-owned enterprises over time rather than at once, we investigate whether political objectives are likely to affect the pattern of privatization. We find that the decision to privatize depends on electoral competition between political parties. The privatization of a government-owned firm is delayed or avoided altogether if it is located in a state where the ruling party faces a competitive political environment. These results are robust to firm-specific factors such as size, income, wage expenses, industry and year effects, the strength of labor, and the strength of leftist ideology. The results also suggest that political patronage can affect the decision to privatize. Specifically, we find that no government-owned enterprise located in the home state of the politician in charge is ever privatized.

One interpretation of the political competition result is that the government chooses to privatize firms located in states where the electoral effects of a political backlash can be minimized. Although the costs of privatization, such as layoffs, are likely to be geographically concentrated among a small group, the benefits are dispersed across the population. Hence, organized opposition from interest groups could cost the ruling party a seat from that state and potentially the next election, especially if it faces strong competition from other political parties in that state. Another interpretation is that the greater the strength of opposition parties in a state the greater the number of veto players in the government from that state, which Alesina and Drazen (1991) suggest could result in a war of attrition, thereby delaying the privatization process. Our data, unfortunately, are not sufficiently detailed to distinguish between these explanations.

Finally, our work has implications for the literature on privatization that study the post-privatization period by assuming (often implicitly) that the companies are selected randomly for

¹⁶ See Besley and Burgess (2002) for a discussion of the effects of media pressure on government responsiveness in India.

privatization. This paper shows that selection for privatization is not a random decision but reflects a political equilibrium as well as firm characteristics.

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Table 1: Comparing Privatized and State-owned Firms

The table presents sample statistics of the main firm-level variables used in the analysis for fiscal years 1991 to 1995. Privatized denotes the companies in which the government sold shares during this period. It includes firm-years until privatization but not after. *Sales* is the total sales of the firm; *EBITDA* is the income before interest, taxes, and depreciation; *Wages* is the firm's total wage expenses; *Workers* is the number of firm's employees; *Workers/State Workforce* is the number of firm's workers normalized by the size of the urban workforce in the state where the firm's main plant is located. The financial variables are measured in 1 million Indian National Rupees. Standard deviations are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% levels, respectively, in a two-sided equality of means test comparing privatized firms to firms that are not privatized.

Variables	Privatized	Not privatized	All
<i>Sales</i>	34914.5*** (70233.3)	3839.3 (13240.3)	6128.4 (24219.6)
Number of Firm Years	66	830	896
Number of Firms	40	175	215
<i>EBITDA/Sales (%)</i>	24.7*** (15.3)	-1.6 (53.1)	0.4 (51.7)
Number of Firm Years	66	815	881
Number of Firms	40	173	213
<i>Wages/Sales (%)</i>	10.4*** (10.3)	33.0 (43.5)	31.3 (42.4)
Number of Firm Years	66	830	896
Number of Firms	40	175	215
<i>Workers/Sales</i>	1.285*** (1.331)	6.817 (11.133)	6.422 (10.828)
Number of Firm Years	57	741	798
Number of Firms	33	163	196
<i>Workers/State Workforce (%)</i>	0.57 (1.14)	0.80 (6.66)	0.78 (6.41)
Number of Firm Years	57	712	769
Number of Firms	33	156	189

Table 2: Comparing Political Data Across Privatized and Government-owned Firms

The table presents the sample averages and standard deviations of the political variables for the federal elections held in 1991. Privatized denotes the companies in which the government sold shares during this period. *Government Seat Share* is the proportion of seats won by the ruling party alliance in the state where a firm's main operations are located; *Largest Opposition Seat Share* is the largest proportion of seats won by a party alliance that is not the ruling alliance, in the state where a firm's main operations are located. *Government's Relative Seat Strength* is the difference between the two variables. *Government Vote Share* is the fraction of votes won by the ruling party alliance in the state where a firm's main operations are located; *Largest Opposition Vote Share* is the largest fraction of votes won by a party alliance that is not the ruling alliance, in the state where a firm's main operations are located; *Government's Relative Vote Strength* is the difference between the two variables. *Government Win Ratio* is the ratio of the number of seats to the total number of contestants fielded by the governing alliance in the state where a firm's main operations are located; *Largest Opposition Win Ratio* is the largest ratio of the number of seats won to the total number of contestants fielded by a party alliance that is not the ruling alliance, in the state where a firm's main operations are located; *Government's Relative Win Ratio* is the difference between the two variables. Standard deviations are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% levels, respectively, in a two-sided equality of means test of comparing privatized firms to firms that are not privatized.

Variables	Privatized	Not privatized	All
<i>Government Seat Share (%)</i>	58.2*** (29.0)	43.6 (32.6)	46.0 (32.5)
<i>Largest Opposition Seat Share (%)</i>	35.3*** (27.5)	50.5 (31.5)	48.0 (31.3)
<i>Government's Relative Seat Strength (%)</i>	22.9*** (55.5)	-6.9 (63.3)	-2.0 (62.9)
<i>Government Vote Share (%)</i>	42.3 (10.1)	39.7 (12.4)	40.1 (12.0)
<i>Largest Opposition Vote Share (%)</i>	32.9** (11.2)	36.9 (11.3)	36.3 (11.3)
<i>Government's Relative Vote Strength (%)</i>	9.4** (18.3)	2.7 (20.8)	3.8 (20.5)
<i>Government Win Ratio (%)</i>	58.8*** (29.0)	43.5 (32.2)	46.0 (32.2)
<i>Largest Opposition Win Ratio (%)</i>	35.5*** (26.4)	47.9 (28.4)	45.8 (28.4)
<i>Government's Relative Win Ratio (%)</i>	23.3*** (54.6)	-4.4 (59.4)	0.1 (59.4)
Number of Firms	40	204	244

Table 3: The Role of Political Patronage in Privatization

The table presents the two-way tabulation between the location of government-owned enterprises and the home state of the minister who has jurisdiction over each of these firms during fiscal years 1991-1995. The home state of the minister is the state from which he/she is elected. Each minister-firm pair is taken as a single observation regardless of the time length the firm remains under that minister's jurisdiction. A firm is considered to be Privatized if it is privatized under the jurisdiction of a given minister. Once a firm is privatized it is dropped from the sample.

Main Plant Located in the Home State of Minister in charge	Never Privatized	Privatized	Total
<i>No</i>	382	41	423
<i>Yes</i>	23	0	23
Total	405	41	446

Table 4: The Role of Political Competition in Privatization

The table presents the results from estimating the following exponential hazard model $h(t) = \exp(\beta'x_i(t))$ where $h(t)$ is the hazard rate for privatization, and the exponential term allows the hazard rate to vary according to firm size given by *Log Sales* (logarithm of total firm sales), firm profitability given by *EBITDA/Sales* (income before interest, taxes, and depreciation, normalized by sales), workforce size given by *Wages/Sales* (firm's total wage expenses normalized by sales), *Government Seat Share* (the proportion of seats won by the ruling party alliance in the state where a firm's main operations are located), *Largest Opposition Seat Share* (largest proportion of seats won by an opposition alliance in that state), *Government's Relative Seat Strength* (the difference between the previous two variables). The time of privatization is determined by the government's first sale of shares in the firm to the public. The financial variables are measured in 1 million Indian National Rupees and are lagged one year. Heteroscedasticity-robust standard errors, corrected for clustering at the firm level, are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% levels respectively.

	(1)	(2)	(3)	(4)
<i>Log Sales</i>	0.848*** (0.140)	0.897*** (0.150)	0.896*** (0.150)	0.899*** (0.150)
<i>EBITDA/Sales</i>	3.597*** (1.086)	3.844*** (1.085)	4.033*** (1.114)	3.948*** (1.098)
<i>Wages/Sales</i>	-5.590*** (2.076)	-5.222** (2.045)	-5.042** (2.000)	-5.124** (2.022)
<i>Government Seat Share</i>		1.247** (0.518)		
<i>Largest Opposition Seat Share</i>			-1.363** (0.560)	
<i>Government's Relative Seat Strength</i>				0.671** (0.273)
Industry Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Constant	-11.290*** (1.541)	-12.421*** (1.773)	-11.167*** (1.635)	-28.206*** (1.720)
Number of Firm-Years	866	865	865	865

Table 5: Privatization and the Influence of Labor

The table presents the results from estimating the following exponential hazard model: $h(t) = \exp(\beta'x_i(t))$, where $h(t)$ is the hazard rate for privatization, and the exponential term allows the hazard rate to vary according to firm size given by *Log Sales* (logarithm of total firm sales), firm profitability given by *EBITDA/Sales* (income before interest, taxes, and depreciation, normalized by sales), *Government Seat Share* (the proportion of seats won by the governing political party alliance in the state where a firm's main operations are located), *Largest Opposition Seat Share* (largest proportion of seats won by an opposition alliance in that state), *Government's Relative Seat Strength* (the difference between the previous two variables), and influence of organized labor given by *Workers/Sales* (number of firm employees normalized by sales), *Worker/State Workforce* (number of employees normalized by the size of the urban workforce in the state where the firm's main plant is located), and *Unionization* (total membership in major labor unions in 1989 in the state where the firm's main factory is located normalized by the total urban workforce in that state). The time of privatization is determined by the government's first sale of shares in the firm to the public. The financial variables are measured in 1 million Indian National Rupees and are lagged one year. Heteroscedasticity-robust standards errors, corrected for clustering at the firm level, are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Log Sales</i>	0.968*** (0.232)	1.330*** (0.275)	0.918*** (0.134)	0.936*** (0.213)	1.465*** (0.293)	0.917*** (0.135)	0.961*** (0.224)	1.402*** (0.289)	0.920*** (0.135)
<i>EBITDA/Sales</i>	3.472*** (0.992)	3.305*** (0.957)	3.554*** (1.059)	3.778*** (1.047)	3.917*** (1.084)	3.724*** (1.081)	3.643*** (1.021)	3.597*** (1.011)	3.658*** (1.069)
<i>Government Seat Share</i>	1.765** (0.771)	1.863** (0.848)	1.295** (0.558)						
<i>Largest Opposition Seat Share</i>				-1.847*** (0.692)	-2.717*** (0.905)	-1.411** (0.555)			
<i>Government's Relative Seat Strength</i>							0.941** (0.370)	1.174*** (0.442)	0.697** (0.277)

Table 5 continued

<i>Workers/Sales</i>	-0.304** (0.127)		-0.297** (0.122)		-0.299** (0.124)				
<i>Workers/State Workforce</i>	-65.514*** (21.238)		-75.096*** (14.187)		-68.666*** (15.900)				
<i>Unionization</i>	0.050 (1.123)		-0.148 (1.179)		-0.018 (1.146)				
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-13.165*** (2.794)	-16.409*** (3.229)	-29.287*** (1.687)	-11.075*** (2.164)	-15.672*** (2.965)	-27.898*** (1.503)	-30.314*** (2.606)	-34.073*** (3.387)	-28.900*** (1.517)
Number of Firm-Years	780	739	833	780	739	833	780	739	833

Table 6: The Effect of Political Ideology on Privatization

The table presents the results from estimating the following exponential hazard model: $h(t) = \exp(\beta'x_i(t))$, where $h(t)$ is the hazard rate for privatization, and the exponential term allows the hazard rate to vary according to firm size given by *Log Sales* (logarithm of total firm sales), firm profitability given by *EBITDA/Sales* (income before interest, taxes, and depreciation, normalized by sales), workforce size given by *Wages/Sales* (firm's total wage expenses normalized by Sales), political ideology given by *Leftist Seat Share* (proportion of seats won by the communist and socialist parties in a state where a firm's main operations are located), *Government Seat Share* (proportion of seats won by the governing political party alliance in the state where a firm's main operations are located), *Largest Opposition Seat Share* (largest proportion of seats won by an opposition alliance in that state), and *Government's Relative Seat Strength* (difference between the previous two variables). The time of privatization is determined by the government's first sale of shares in the firm to the public. The financial variables are measured in 1 million Indian National Rupees and are lagged one year. Heteroscedasticity-robust standards errors, corrected for clustering at the firm level, are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively.

	(1)	(2)	(3)
<i>Log Sales</i>	0.910*** (0.155)	0.909*** (0.155)	0.913*** (0.155)
<i>EBITDA/Sales</i>	3.919*** (1.098)	4.123*** (1.139)	4.037*** (1.118)
<i>Wages/Sales</i>	-5.239** (2.097)	-5.053** (2.053)	-5.139** (2.078)
<i>Leftist Seat Share</i>	0.371 (1.078)	0.437 (1.153)	0.433 (1.115)
<i>Government Seat Share</i>	1.316** (0.537)		
<i>Largest Opposition Seat Share</i>		-1.437*** (0.556)	
<i>Government's Relative Seat Strength</i>			0.711*** (0.276)
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Constant	-12.611*** (1.883)	-11.301*** (1.710)	-28.385*** (1.881)
Number of Firm-Years	865	865	865

Table 7: Additional Measures of Political Competition and the Decision to Privatize

The table presents the results from estimating the following exponential hazard model: $h(t) = \exp(\beta'x_i(t))$, where $h(t)$ is the hazard rate for privatization, and the exponential term allows the hazard rate to vary according to firm size given by *Log Sales* (logarithm of total firm sales), firm profitability given by *EBITDA/Sales* (income before interest, taxes and depreciation, normalized by sales), *Government Vote Share* (fraction of votes won by the governing political party alliance in the state where a firm's main operations are located), *Largest Opposition Vote Share* (largest fraction of votes won by an opposition alliance in that state), *Government's Relative Vote Strength* (difference between the previous two variables), *Government Win Ratio* (ratio of the number of seats to the total number of contestants fielded by the governing alliance in the state where a firm's main operations are located), *Largest Opposition Win Ratio* (the largest ratio of the number of seats won to the total number of contestants fielded by an opposition alliance in that state), *Government's Relative Win Ratio* (difference between the previous two variables). The time of privatization is determined by the government's first sale of shares in the firm to the public. The financial variables are measured in 1 million Indian National Rupees and are lagged one year. Heteroscedasticity-robust standards errors, corrected for clustering at the firm level, are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Ln(Sales)</i>	0.861*** (0.150)	0.848*** (0.139)	0.864*** (0.147)	0.906*** (0.152)	0.905*** (0.151)	0.908*** (0.152)
<i>EBITDA</i>	3.486*** (1.096)	4.250*** (1.099)	3.847*** (1.087)	3.859*** (1.090)	4.028*** (1.118)	3.948*** (1.103)
<i>Wages/Sales</i>	-5.611*** (2.063)	-5.182*** (1.943)	-5.368*** (1.991)	-5.222** (2.051)	-5.054** (2.028)	-5.134** (2.039)
<i>Government Vote Share</i>	1.969* (1.207)					
<i>Largest Opposition Vote Share</i>		-3.308** (1.513)				
<i>Government's Relative Vote Strength</i>			1.642** (0.740)			
<i>Government Win Ratio</i>				1.303** (0.514)		
<i>Largest Opposition Win Ratio</i>					-1.469** (0.620)	
<i>Government's Relative Win Ratio</i>						0.707** (0.284)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-12.215*** (1.877)	-10.118*** (1.545)	-11.534*** (1.641)	-12.543*** (1.809)	-11.224*** (1.642)	-28.300*** (1.758)
Number of Firm-Years	865	865	865	865	865	865

Table 8: State-level Characteristics and the Privatization Decision

The table presents the results from estimating the following exponential hazard model: $h(t) = \exp(\beta'x_i(t))$, where $h(t)$ is the hazard rate for privatization, and the exponential term allows the hazard rate to vary according to firm size given by *Log Sales* (logarithm of total firm sales), firm profitability given by *EBITDA/Sales* (income before interest, taxes, and depreciation, normalized by sales), *Government Seat Share* (the proportion of seats won by the ruling party alliance in the state where a firm's main operations are located), *Largest Opposition Seat Share* (largest proportion of seats won by an opposition alliance in that state), *Government's Relative Seat Strength* (the difference between the previous two variables). *Per Capita Income* is the log of the per capita income in the state where a firm's main operations are located. *Literacy* is the percentage of the state population that is literate. *Urbanization* is the percentage of the state population in cities. The time of privatization is determined by the government's first sale of shares in the firm to the public. The financial variables are measured in 1 million Indian National Rupees and are lagged one year. Heteroscedasticity-robust standards errors, corrected for clustering at the firm level, are in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Log Sales</i>	0.922*** (0.183)	0.861*** (0.145)	0.852*** (0.142)	0.911*** (0.178)	0.864*** (0.146)	0.849*** (0.142)	0.920*** (0.181)	0.865*** (0.146)	0.852*** (0.142)
<i>EBITDA</i>	3.697*** (1.168)	3.544*** (1.089)	3.590*** (1.050)	3.900*** (1.168)	3.748*** (1.106)	3.918*** (1.062)	3.813*** (1.168)	3.652*** (1.095)	3.755*** (1.052)
<i>Wages/Sales</i>	-4.655** (2.007)	-5.222*** (1.964)	-5.215*** (1.933)	-4.585** (1.975)	-5.105*** (1.922)	-5.164*** (1.868)	-4.604** (1.988)	-5.156*** (1.943)	-5.186*** (1.900)
<i>Government Seat Share</i>	1.388** (0.568)	1.057* (0.563)	1.278** (0.526)						
<i>Largest Opposition Seat Share</i>				-1.524*** (0.563)	-1.214** (0.580)	-1.632*** (0.607)			

Table 8 continued

<i>Government's Relative Seat Strength</i>							0.748*** (0.287)	0.584** (0.290)	0.740*** (0.286)
<i>State Per Capita Income</i>	0.149 (0.453)			0.307 (0.449)			0.226 (0.449)		
<i>Literacy</i>		0.014 (0.016)			0.016 (0.015)			0.015 (0.015)	
<i>Urbanization</i>			0.754 (0.940)			1.206 (1.016)			0.973 (0.967)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-14.051*** (4.547)	-30.140*** (1.153)	-12.349*** (1.767)	-13.999*** (4.586)	-29.209*** (1.608)	-11.209*** (1.603)	-14.082*** (4.556)	-29.725*** (1.907)	-11.884*** (1.683)
Number of Firm Years	807	815	815	807	815	815	807	815	815