Spatial Dependence in the Policy Diffusion of State-Business Relations: A Subnational Study of India

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Abstract: In this paper, we examine whether there exists policy diffusion among states in India to promote effective State Business Relations (SBRs). With the advent of economic reforms, the economic decision making process is considerably decentralized to the state governments, resulting in promotion of SBRs by various state governments to attract investment. We use Cali and Sen's comprehensive index based on the template of Cali et al (2009) that measures effective SBRs in Indian states on the dimensions of transparency, reciprocity, credibility and mutual trust between state governments and the industry. Using spatial regression estimates on panel data for 16 industrial states in India during the 1985–2008 period (24 years), we find that an improvement in SBRs in one state (weighted by inverse distance) is positively correlated with an improvement in SBRs elsewhere (i.e., an increase in the SBRs index in other states increase the likelihood of an increase in the SBRs index in the state in question). Furthermore, this interdependence is also most evident in the post-reform period (post 1991). Our results are robust to controlling for endogeneity, alternative weights (such as contiguity), and estimation methods.

Keywords: State business relations, spatial econometrics, India (C23; F21; R58).

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1. Introduction

Critics of globalization have expressed concerns over its negative effects (Rodrik 1997, Stiglitz 2002). They argue that globalization leads to intense economic competition among countries, which imposes a number of costs on poor countries that can lead to social disarray. However, others argue that competition to attract investment, particularly in developing countries which are labor rich and capital poor, can be significantly beneficial to the labor market (Bhagwati 2004, 1999, Dutta and Mitra 2006). While there has been genuine concern expressed over the possibility of a race to the bottom in areas such as taxation and labor standards, the positive effects of globalization in other important areas such as economic institutions (measuring state–business relations), among others, have largely gone unnoticed.[1] This paper fills this gap by specifically looking at the extent to which state-business relations (SBRs hereafter) in one state are influenced by changes in SBRs in other states in India. India offers an interesting case study because of the withdrawal of controls exerted by the central government on investment regulations forcing state governments to become competitive to attract investments. Promoting effective SBRs is a key if the state intends to attract foreign and private investments. Therefore, promoting effective SBRs to attract investment and learning by imitating states in which SBRs have yielded significant benefits might explain policy diffusion in SBRs across Indian states. Moreover, in a complex federal democracy such as India, state level politics are dominated by state specific issues rather than national issues which places the economic development (such as creating job opportunities) of a state the focus of a potential electorate. In a country where state capacity is weaker, and where institutional quality varies significantly by

[1] Prominent studies by La Porta et al. (2004), Dollar and Kraay (2003), Acemoglu, Johnson and Robinson (2001, 2002), Rodrik, Subramanian and Trebbi (2002), Hall and Jones (1999), Knack and Keefer (1995), Mauro (1995), Barro (1991), and North (1981, 1991) have shown how institutional factors such as property rights, control of corruption, and enhanced efficiency of investments in physical and human capital lead to economic development.

state, the question of whether effective SBRs in other states can explain observed variations in SBRs in a particular state, remains open for debate and will hence be explored here.

Why are SBRs important? According to Maxfield and Schneider (1997), effective SBRs capture the formal active interaction and mutual trust between the state and the business sector. Accordingly, the basic features of effective SBRs are transparency in the flow of accurate information on both sides, reciprocity of the state, credibility of the state on the delivery of promises, and mutual trust between both sides. Cali and Sen (2011) show that effective SBRs are important for economic growth because they not only help attract investment, but also increase the productivity of investments by eliminating investment policy uncertainties, reducing transactions and coordination costs thereby minimizing corruption and rent seeking behavior, and enhancing property rights protection. Thus, effective SBRs have far reaching social implications as they are not only growth enhancing through attracting investment, but also create job opportunities which form huge political capital for incumbent politicians. In particular, even if investment does not flow in as a result of a state's efforts to improve SBRs, if politicians believe that it does, then this alone could result in diffusion of policies to promote effective SBRs among states. The present study aims to investigate whether there exists diffusion in policies to promote effective SBRs among states in India. To the best of our knowledge, no previous study has attempted to examine the extent of policy diffusion to promote effective SBRs, be it using cross-country or intra country analysis. This is a gap in the literature that the present study aims to fill.

Spatial econometrics has been used in the existing literature to study in general, the extent of competition and policy diffusion in the context of broader economic policy reforms, taxes, labor standards, environmental standards, among others. Focusing on tax competition,

Davies, Egger and Egger (2003), Devereux, Lockwood, and Redoano (2008), Davies and Voget (2008), Overesche and Rinke (2008) Reulier and Rocaboy (2009) and Klemm and van Parys (2009) find that a fall in the tax rate in one developed country leads to lower tax rates in other developed countries to attract Foreign Direct Investment (FDI hereafter). Extending spatial econometrics to competition in the environmental literature, Markusen, Morey and Olewiler (1995), Fredriksson and Millimet (2002), Beron et al. (2003), Murdoch et al. (2003), Davies and Naughton (2006) and Perkins and Neumayer (2010) find evidence consistent with a race to the bottom in the adoption of environmental agreements and policies. While Davies and Vadlamannati (2011) find strong evidence for a potential race to the bottom in aggregate labour standards, Neumayer and de Soysa (2011) find that the diffusion of policies promote women's labor rights. Using the Economic Freedom Index as a measure of policy liberalization, Pitlik (2007) and Gassebner, Gaston and Lamla (2011) find evidence in favour of diffusion of polices among countries promoting the liberalization of regulatory, monetary and trade policies. Simmons and Elkins (2004) also find support for these findings.[2] Similar findings related to the improvement of institutional standards, financial development and economic growth in transitional economies, are discussed in Tamazian and Rao (2010).

While most of these studies are cross-country analyses, to the best of our knowledge no study has examined plausible policy diffusion among countries to promote SBRs. Our paper attempts to fill this gap by specifically focusing on major industrial states in India to examine this question. While Cali, Mitra and Purohit (2009) and Cali and Sen (2011) examine the impact of effective SBRs on economic growth among Indian states, they do not test for the existence of

[2] There are also other areas where spatial econometrics has been used to examine the competitive effects in signing bilateral investment treaties (Elkins, Guzman and Simmons 2006), diffusion of anti-trafficking government policies (Cho, Dreher and Neumayer 2011), inbound and outbound FDI (Blongien et al. 2007).

strategic interaction in SBRs, i.e., whether changes in policies to promote SBRs in one state depends on those elsewhere. Using panel data on the SBRs index constructed by Cali and Sen (2011) for 16 Indian states during the 1985–2008 period, we find that improved SBRs in one state are positively correlated with the improvement in SBRs in other states. Furthermore, we find this interdependence to be strong during the post-reform period (i.e., in the post-1991 years). We interpret these results as direct evidence of strategic interstate interactions in promoting effective SBRs. This is because economic reforms during this period, have been driven by states due to the withdrawal of controls exercised by the central government, in areas related to investment regulations.[3] Since there is a noticeable upward trend in aggregate SBRs over the sample period across the states, we consider this as evidence in favour of policy diffusion which is a result of inter-state competition to improve the prevailing investment climate in respective states and also learning by imitating from other states, especially from the early movers, which have benefited from promoting effective SBRs.

The rest of the paper is structured as follows. Section 2 illustrates the importance of SBRs in India and the factors explaining policy diffusion among states to promote effective SBRs. Section 3 describes the data and methods adopted. Section 4 discusses the results and section 5 concludes.

2. Policy Diffusion in Promoting Effective State Business Relations

Good state business relations which satisfy conditions of transparency, reciprocity, credibility and trust can channel scarce resources to their most efficient use, by minimizing

[3] It is noteworthy, that although the central government intervened less and allowed state governments to take decisions during our study period, the direction of competition at times was set by the central government. In other words, states competed to be more liberal because this was the direction that the central government wanted them to take and it is precisely for this reason the central government in the liberalization program of 1991 emphasised on brining state governments into the economic decision making process (for more discussion on this, see Kanta 2011).

market co-ordination failures, investment risk and policy uncertainty. This requires a strong institutionalized cohesive relationship between the business sector and state. Institutional success and thus developmental outcomes depend crucially on the successful interaction between institutions, organizations and individuals. For instance, Chousa, Khan, Melikyan and Tamazian (2005) found that an improved institutional system could promote investments in such a way as to create economic growth in a democratic environment. Effective SBRs, call for the institutionalized cooperation of both the public and private sector, and are important for a number of reasons including: minimizing market coordination failures; improving skill and capital formation; promoting a more efficient allocation of resources; formulating a better policy framework for industrial development; technological upgrading; and reducing opportunities for rent seeking (Te Velde 2010, Lin 2010), each of which increase productivity and economic growth in the medium to long run. Similarly, where firms operate in an environment of uncertainty, effective SBRs can help reduce policy uncertainty. Uncertainty can negatively affect investment, in particular those which involve a large sunk cost and time lag in decision making (Dixit and Pindyck 1994). This is evidenced by Rojid et al. (2010) in a study on Mauritius where businesses which have a better relationship with the government are in a better position to plan, leading to the enforcement of growth promoting policies conducive for capital formation. Reduced coordination failure is evidenced in a study by Qureshi and Te Velde (2007) of firms in a group of Sub-Saharan African countries. They show that both small and medium-sized enterprises and large firms benefited from being members of business associations that lobbied on their behalf for better education and infrastructure contributing to enhanced growth. Ellis and Singh (2010) highlight the benefits of effective SBRs in promoting competition as reflected in lower prices, innovation and access to services in four product markets - sugar, cement, beer and

mobile phone services in Zambia, Kenya, Ghana, Vietnam and Bangladesh. These studies demonstrate that collaborative coalitions between political leaders and industry can yield positive economic outcomes. In fact, Cali and Sen (2011), creating a composite index for measuring SBRs, investigate the impact of effective SBRs on economic growth in Indian states over the period 1985–2006.[4] They show that effective SBRs contribute significantly to economic growth, and are primarily shaped by the degree of intensity of the linkage between the state and the private sector.

The practice of state business interaction in India is assumed to take place only at the central government level. However, the information gathered through fieldwork by Cali et al. (2011) show that such interactions also transpire at the state level and large numbers of states in India have actually institutionalised SBRs over a period of time. What is interesting is that institutionalising SBRs at the state level was not universal at least in the initial years. The policy initiatives taken by various states to institutionalise SBRs, diffused across other states eventually as the economic decision making process was decentralised. We identify three critical factors explaining the diffusion in promoting effective SBRs among Indian states. First, Kanta (2011), Schneider (2004) and Venkatesan (2000) highlight the major shift in investment regulation environment in India from the 1990s onward where the dominance of the central government in economic policy decision-making significantly diminished and states were allowed to frame individual state-specific investment policy. Prior to the 1990s, the central government regulated investment through an industrial licensing framework in which the central government's approval was required for all investment (private, public and foreign proposals). The regulatory framework was concentrated in the hands of various industrial licensing committees of the

[4] The present study uses the index of Cali and Sen (2011). This index is discussed in detail in section 3.2.

Ministry of Industry which decided not only approval of investment proposals but also the location and production aspects of the investments (Vadlamannati and Khan 2013). These controls affected the distribution and generation of investment directly. The advent of economic reforms in the late 1980s led to states which already possessed locational advantages such as large markets, better infrastructural facilities, a skilled labor force, and the presence of a large investor base, to attract relatively large investments and benefit thereby (Kumar 2010, Kohli 2006, Ahluwalia 2000). This, in turn, placed more pressure not only on less developed states but on all states, to compete fiercely to attract investments. This is in line with competition theory that argues that nation-states compete to attract investment by lowering the cost of doing business, reducing constraints and barriers on investment in the hope of reciprocity (Dobbin et al. 2007). Rudolph and Rudolph (2001) provide examples of how the delegation of powers to states to frame their own investment policies led to competition among states to attract private and foreign investment. This resulted in states offering large indirect tax and other fiscal incentives to attract investment (Venkatesan 2000). State governments have repeatedly demonstrated their willingness to be at the forefront to attract investments which are associated with generating jobs and boosting local economies. Sachs et al. (2001, p 12) argue that, "with the initiation of economic reforms the role of private investment has acquired a great deal of significance. States are now in competition with one another to attract private investment, both domestic and foreign." However, state governments do realize that offering a range of incentives alone might not be sufficient to attract large investment because few states continue to capture a disproportionately large share of investment as they happen to be initially better positioned. Empirical literature on the locational response of businesses to taxes and incentives show that lowering taxes and providing a range of incentives do not necessarily attract business (Wang et

al. 2012, Helleiner 1989). Thus, creating an investment-conducive climate became an important determinant to attracting investment. As a result, the attitude of some of the state governments towards business in general began to change dramatically (Kohli 2006, Sinha 2004). This was reflected by the fact that the quality of interactions between state governments and respective state business associations started to increase. These interactions are used by the respective state governments to send signals to potential investors that the government is willing to talk and address the concerns of the industry, and is willing to change policies that would be more conducive to business. Concurrently two leading institutions have become active in most states as a result of the competition to attract investment. These include state investment corporations whose primary goal is to promote investments; and private business organizations which lobby the state governments to enact policies favorable to business. Although the majority of states possessed these investment corporations and private business associations for a long period of time, these public and private organizations and their interaction with the state has remained virtually inactive in some states (Cali and Sen 2011). With the economic decision making process decentralized, the interactions between business and state governments (and at times with district authorities) have dramatically increased. The business community interacts with state governments on a regular basis for not only approval of investment proposals, but also securing land, power, environmental clearances and other infrastructural facilities. Thus, the enhancement of the state governments' role in investment policy paved way for the business community to forge alliance and improve communication with state governments.

On the other hand, a shift in economic policy decision-making from the center to states has coincided with changes in the political dynamics of the country, wherein politics at the state-level, according to Ahluwalia (2000), are now dominated by state-specific issues rather than

national issues. This has effectively changed the political discourse in which local socio-economic developmental issues such as poverty reduction, attracting investments and job creation, among other objectives have become a focal point of a potential electorate. These changes in turn have placed pressure on the respective state governments in the era of greater subnational authority to design policies, and create an environment which attracts investments that could generate job opportunities, providing political capital for incumbent politicians. Indeed, Gupta and Panagariya (2011) show that economic performance at the state level does matter as it gives a definite advantage to the political candidates of the state incumbent party in the electoral constituencies of that state. Thus, providing effective SBRs as part of an investment promotion campaign has become one of the key priorities for many state governments. It is also noteworthy that even if investments do not flow in directly as a result of effective SBRs, if the incumbent state government believes that it does, then this alone could motivate state governments to improve their SBRs to remain competitive against its peers.

Second, although our arguments on states promoting effective SBRs is motivated by the competition for investment, it is important to recognize that this is not the only mechanism that can yield strategic complementarity. The other alternative explanation could be the "yardstick competition" model. This model was developed by Salmon (1987) and applied to taxes wherein the tax authority in one jurisdiction depends on that elsewhere not because officials use taxes to attract mobile firms, but because voters in their jurisdiction judge the performance of the authority by comparing the local tax rate to those elsewhere. Likewise, the business community and associations of a state, compare the SBRs in their region with those elsewhere as a method of judging local state government's performance in terms of promoting SBRs. This might lead to a demand for a similar treatment in their state, thus introducing the possibility of yardstick

competition among the states where the intention is not to compete but learn by imitation and adopt policies that are successful elsewhere. This line of argument as per the learning theorists suggest that nation-states learn from their own experiences and, as well, from the policy experiments of their peers (Dobbin et al. 2007). In fact, Bordignon, Cerniglia, and Revelli (2003) and Allers and Elhorst (2005) utilize spatial econometrics to find positive spatial lags which they interpret as evidence of yardstick competition. On the investment climate in Indian states, this idea of diffusion through 'public awareness' and the spread of 'norms and ideas' is explored, albeit theoretically, by Sinha (2004). Accordingly, during the pre-reforms period, states in India were engaged in what is known to be 'vertical competition'. Given the regulatory licensing system in the pre-reform period that allocated both public and private sector investment by the centre, there was competition between the states for these allotments by forging alliance with the central government (vertical). But states never competed against each other directly during this period. However, in the post-reforms period, states started to compete more directly with each other to attract investment to their state (horizontal). Sinha (2004: p 26) opines that *"...*this horizontal competition has become more symmetric, unleashing processes of diffusion and "learning by copying" across a larger number of states than before." In the process, states did engage in learning and imitating the policies and schemes adopted by other states. In fact the Business Today survey (2003) shows that many states in India have imitated many of the policies adopted by other states including the mechanism of creating effective SBRs.

A third possibility is a setting of imperfect information where incumbent state governments extract information about underlying conditions from the SBRs set elsewhere, leading them to revise and revisit their policies on SBRs when those elsewhere change. Sinha (2004, p 42–51) reviews an extensive list of state governments especially during the post-reform

period which have revised their policies to improvements in investment climate in the state after accessing information on changes in these policies elsewhere. The combination of these three factors provides interpretation of our empirical evidence in favor of strategic complementarity in SBRs. With these explanations in mind, we now turn to our data and empirical methodology.

3. Empirical Methodology and Data

We make use of a panel data set across 16 Indian states (see appendix 1) during the 1985–2008 period (24 years), with the following specification:

3.1 Estimation Specification

The baseline specification estimates the SBRs in state *i* in year *t* as a function of a set of exogenous variables Z_{it} :

$$SBR_{it} = \phi_i + \beta Z_{it} + \omega_{it} \qquad (1)$$

Where, ϕ_i is the state-specific constant and ω_{it} is the error term. The control variables are drawn from the literature on determinants of SBRs and are described below. We also include a lagged dependent variable as it is theoretically plausible that past decisions taken to improve SBRs can influence SBRs in the current period. We thus estimate our models with and without a lagged dependent variable. In line with the spatial econometrics literature, we introduce the prevailing SBRs in other states in year *t* to this baseline model, which is the spatial lag:

$$SBR_{it} = \phi_i + \rho \sum_{j \neq i} \varpi_{jit} SBR_{it} + \beta Z_{it} + \nu_i + \eta_t + \omega_{it} \qquad (2)$$

Where, $\sum_{j \neq i} \varpi_{jit} SBR_{it}$ is the spatial lag, i.e., the weighted average of SBRs prevailing in other states. For weights, following Davies and Vadlamannati (2011), we utilize $\omega_{i,j,t} = \frac{\frac{1}{dist_{i,j,t}}}{\sum_{k \neq i} \frac{1}{dist_{i,k,t}}}$.

Note that we use the distance in kilometres from state *i* as weights here so that distant states are given smaller weights. Hence, we use inverse distance, not distance.[5] It is, however, important to note that the sum of the weights across the other states for state *i* observation will equal 1. This weighting scheme imposes the assumption that states with lower distance receive higher weights. The rationale for using inverse distance as the weight is two-fold. First, it is plausible that state *i* actually pays more attention to what is taking place in the nearby or neighbouring states rather to states which are further away, capturing the diffusion effect of 'imitation'. Second, when the goal of a state is to improve investment climate to attract investment, this, will depend on the elasticity of investments to a given state's policies. Thus, if neighbouring state *j* is already attractive for investment relative to state *k* either due to large market size or complementary labor, transport options, and local culture, then a change in neighbouring state *j*'s SBR policies has a larger impact on the allocation of investment than a comparable change in state *k*. This, in turn, would make state *i* more responsive to neighbouring state *j*'s SBR policies than to state *k*'s, a difference that is reflected in equation (2) by giving a greater weight to neighbouring state *j*. In addition to this, the literature shows that closer countries are more attractive for trade and investment (see Blonigen 2005), which would imply a greater sensitivity on the part of state *i* to the SBR policies of a neighbouring state. In addition, previous literature applying spatial

[5] It is common to "row standardize" the weights so that the sum of the weights adds up to one (see Anselin 1988, Blongien et al. 2007 and Plümper and Neumayer 2010).

econometrics has also used inverse distance as a weight[6] (see Blonigen et al. 2008, Blonigen et al. 2007, Head and Thierry 2004). ν_i denotes state-fixed effects to control for unobserved state specific heterogeneity, η_t denotes time specific dummies in the panel dataset, and ω_{it} is the error term. The models are estimated using the pooled Ordinary Least Squares (OLS hereafter) method including state-specific and time-specific dummies with robust standard errors, a method which is robust to heteroskedasticity and serial correlation (Wiggins 1999). Note that the Hausman (1978) test favours fixed effects over random effects models. We also use the Newey-West method as a robustness check which allows us to compute an AR1 process for autocorrelation (Newey and West 1987).

3.2 Data

For the dependent variable, we make use of Cali and Sen's (2011) State Business Relations (SBRs) index, which measures state business relations in each Indian state *i* in financial year *t* on the dimensions of transparency, reciprocity, credibility, and mutual trust between the state and the industry. Previous studies addressing the issue of SBRs have used proxies such as the World Bank's *Doing Business* indicators, which measures the quality of institutions but is only available for a few recent years (World Bank 2009). In addition, for most countries these data do not vary by time and are not available at a sub-national level. Others have used simple dummy variables capturing the institutions in place to promote effective SBRs. However, these single indicators only capture very specific aspects of SBRs. Major upheavals through resolving market and government failures stem from the absence of effective SBRs,

[6] Moreover, using distance as weight also avoids reverse causation problems. For instance, it is hard to argue that SBRs in state *i* would influence distance from other states (excluding state *i*).

especially in developing countries. According to Bardhan (2005), effective SBRs can actually help resolve coordination failures in investment decisions in both the public and private sectors.

In this paper, we consider the comprehensive SBRs index constructed by Cali and Sen (2011), based on the pattern outlaid by Cali, Mitra and Purohit (2009). The SBRs index data is available on a yearly basis (over the 1985–2008 period) for about 16 industrial states in India. The SBRs index is a comprehensive measure comprising four components capturing: (a) Role of the private sector (consists of active presence of business associations; quality of organization structure – whether the organization has a website or not; intensity of organization's activities – how frequently the websites are updated), (b) Role of the public sector (consists of the presence of participating state institutions such as Investment Promotion Agencies, Financial Development, Infrastructure Development and Tourism Development Corporations; state government spending on industry development), (c) Interaction between states and businesses (includes Besley and Burgess' (2004) labor regulation index capturing the amendments made by respective state governments to the Industrial Disputes Act 1947, reflecting either pro-employer or pro-worker regulations; taxes collected by state governments on Stamp duties), and (d) Mechanisms to avoid collusive behaviors (considers gross output of firms belonging to delicensed industries as a proportion of total industrial GDP;[7] transparency in the activities of private sector business associations, measuring the frequency of the publication of annual reports and distribution to its members). These four components roughly comprise of 12 objective indicators. Each variable in the respective components was normalized to 1, where higher values of the original variable indicated superior SBRs. These 12 variables were then averaged to

[7] As highlighted by Aghion, Burgess, Redding, and Zilibotti (2006) Indian companies are required to obtain licenses from the central government to start business operations. Starting in 1985, certain industries were delicensed and after 1991, almost all industries (with a few exceptions) were fully delicensed.

determine each of the four components. The four components are then averaged to derive the main SBR index for each of the 16 states.[8] The final index is ranked on a scale of 0 (no effective SBRs) to 1 (effective SBRs). Figure 1 captures the SBR indices across the states during the 1985-2008 period. Two interesting points are noteworthy. First, as seen, there is a significant amount of variance across the states, and this variance is quite high between southern states and the rest of the states in the sample.[9] Second, the states which tend to score low are also those which lag behind, broadly in terms of socioeconomic developmental indicators (Bihar for instance). A straightforward way of testing the diffusion effects on SBRs is to examine the simple correlation. We do find a positive correlation between SBRs in state *i* and SBRs in other states weighted by distance. In fact, the Pearson correlation is approximately $r = 0.80$, which is fairly high and can be interpreted as evidence of strategic complementarity. Figure 2 in the appendix captures the trend of SBRs among states and how they respond to the changes in SBRs elsewhere (weighted by distance). As can be seen, with the exception of Bihar, SBRs in all other states in our sample tend to respond to changes in SBRs in other states. While many states such as Orissa, Rajasthan, Uttarakhand, and West Bengal display a trend of convergence, other states like Andhra Pradesh, Tamil Nadu, Karnataka, and Gujarat are actually ahead of their peers.

The vector of control variables includes other potential determinants of SBRs in state *i* during year *t*, which we try to obtain from the limited literature on this subject. Since this is the first such study employing spatial estimation of SBRs in India in the literature, we follow Cali and Sen (2011) and Cali, Mitra and Purohit (2011) on the determinants of SBRs, as well as other comprehensive evaluations of earlier studies on SBRs (Sen and Velde 2009, Kathuria, Natarajan

[8] The reason to consider only 16 industrial states instead of 28 states is based on data availability to construct the SBRs index. In fact, these 16 states constitute about 94% of total population and 93% of India's domestic product.
[9] These include: Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

and Sen 2009, Qureshi and Velde 2007, Velde and Qureshi 2007, and Velde 2006a b). Accordingly, the models control for development by including state per capita income (logged) in Indian Rupees (in 1999-2000 constant prices), obtained from the Reserve Bank of India's macroeconomic dataset.[10] We also include the total population (logged) of the respective states in the absence of data on the labor force. We expect states to improve state business relations where there is a larger labor force, thereby placing pressure on the respective government to generate jobs.[11] To measure industrialization, we include industry value added in a state's GDP, computed from the Reserve Bank of India's macroeconomic dataset. We expect industrialized states to focus more specifically on improving state business relations. Finally, following Basely and Burgess (2000), we use dummy variables to capture the number of years a party was in power in each state (i.e. state specific) in year *t* by one of the following political parties: Indian National Congress (INC hereafter), the Bharatiya Janata Party (BJP henceforth), the Left Front led by the Communist Party of India-Marxist (CPI-M), and regional parties, to control for the 'ideology hypothesis' highlighted by Dutt and Mitra (2006). Finally, we also include a dummy variable for President's rule' imposed upon the state to capture political uncertainty.[12]

3.3 Endogeneity concerns

The difficulty with the spatial lag is that if SBRs in state *i* depend on those in state *j,* and vice versa, the spatial lag is then endogenous. In order to address this endogeneity, we utilize two-stage least squares instrumental variable (2SLS-IV henceforth) estimation. Following the standard spatial econometric procedure suggested by the literature, for the instruments we

[10] See: http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook of Statistics on Indian Economy

[11] We would prefer to consider the data on share of population under the age of 20–35, capturing the potential labor force in a state. However, the lack of such data forced us to settle for total population.

[12] President's rule is imposed by the President of India based on the central government's recommendations. Imposing the President's rule requires dismissing the state legislative assembly with powers then vested to the state's governor until fresh state legislative assembly elections are called.

use $\sum_{j \neq i} \varpi_{jit} Z_{jt}$, i.e., the weighted average of the other states' economic and political variables. However, instead of including all variables, we include only two variables namely industry share in GDP and President's rule dummy variable as described above. The intuition behind using only these two variables is twofold. First, for a given state *j*, its industry share value added and President's rule variables directly impact its SBR policies but are not dependent on those in state *i*. On the other hand income levels of other states and political parties in other states can influence SBRs in the state question. For instance, a political party in power in state *i* can follow similar policies introduced by the same party which is in power in state *j* violating instrument exclusion criteria. Keeping this in view we exclude income levels and political variables of other states and retain only industry share in GDP and President's rule in other states (weighted by inverse distance, excluding state *i*) as instruments. Both these variables are correlated with the endogenous variable (as shown from the joint F-statistic from the first stage analysis) but are themselves exogenous, making them valid instruments.

The validity of the selected instruments depends on two conditions. The first is instrument relevance, i.e., they must be correlated with the explanatory variable in question. Bound, Jaeger and Baker (1995) suggest examining the joint F-statistic on the excluded instruments in the first-stage regression. The selected instruments would be relevant when the first stage regression model's joint F-statistics meets the thumb rule threshold of being above 10 (Staiger and Stock 1997). However, the joint F-test has been criticized in the literature as being insufficient to measure the degree of instrument relevance (Stock et al. 2002, Hahn and Hausman 2002 and 2003). The more powerful test of Kleibergen-Paap LM statistic is also used (Kleibergen-Paap 2006). A Kleibergen-Paap LM statistic above the critical value (10 percent

maximal test size) indicates the rejection of weak instruments. Second, the selected instrumental variables should not vary systematically with the disturbance term in the second stage equation, i.e. $\left[\omega_{it} \mid IV_{it}\right] = 0$ meaning, the instruments cannot have independent effects on the dependent variable. As for the exclusion restriction, the Hansen J-test is employed to check whether the selected instruments satisfy the exclusion restriction (results provided at the end of the models estimated using 2SLS-IV method).

4. Empirical Results

4.1 Baseline Results

We present the baseline results in table 1. A summary of the data statistics is presented in appendix 2. While table 2 focuses exclusively on the post-reform period (post 1990), table 3 examines the results using an alternative weighting matrix in constructing the spatial lag variable. As seen in column 1 of table 1, we capture the results without including the spatial lag in order to check the comparison between our results and other studies on determinants of SBRs. As expected, we find that income levels of the state, industrialization, and state population are associated with effective SBRs after controlling for state-specific fixed effects. On the contrary, we don't find any political variables, other than INC ruling years, that have an influence on SBRs. As expected, political instability has a negative effect on SBRs, albeit being statistically insignificant. In column 2, we report the same results with the lagged dependent variable. After controlling for the lagged dependent variable, we find that only income levels of the state are positive and significantly different from zero at the 1% level. In column 3, which forms our main specification, we include the SBRs spatial lag term. Here, we find a positive and significant spatial lag, which is significantly different from zero at the 1% level. To interpret the coefficient

on this, a standard deviation increase in the SBRs' index of all other states would increase the SBRs index in state *i* by roughly 0.12 percentage points, which is about 131% of the standard deviation of the SBRs index. As seen in column 4 of table 1, the positive significant effects of the SBRs' spatial lag remains robust to the inclusion of a lagged dependent variable. The substantive effect of the spatial lag drops from 0.12 to 0.10 percentage points after the inclusion of the lagged dependent variable. Since the spatial lag is positive, this can be interpreted as evidence of strategic complementarity consistent with the arguments made in section 2. Note that although this is consistent with competition among states to promote effective SBRs to attract investment, it does not rule out the possibility of other ways in which the SBRs in one state can depend on those elsewhere. In addition to yardstick competition arguments presented in section 2, the coefficient on the spatial lag could also capture coordination among states, especially those states which are aligned to the centre, to promote SBRs rather than competition, that is, a mutual strengthening of SBRs across borders. Nevertheless, since on average SBRs across states improved over the study period, we interpret our results as suggestive of policy diffusion with the intention to promote SBRs in their respective states.

In column 5, we replicate the baseline regressions with 2SLS-IV estimations. As one can see, the positive significant effects of the spatial lag term remain robust in the IV estimations. In fact, the substantive effects suggest that a standard deviation increase in the SBRs' spatial lag is now associated with an increase in the SBRs' index in state *i* by roughly 0.10 percentage points, which is about 97 % of the standard deviation of the SBR index. After controlling for the lagged dependent variable in column 6, the substantive effect of the SBRs' spatial lag falls to 0.07 percentage points. The significant positive effects of the spatial lag term can indeed be interpreted as evidence of strategic complementarity. While strategic complementarity can

theoretically result in a race to the bottom, since there is an upward trend in the SBRs index, we interpret the result as evidence in favor of policy diffusion among states to improve their investment climate. Column 5 and 6 of table 1 also capture the results on the endogeneity tests – the joint F-statistic and Kleibergen-Paap LM statistic reject the null hypothesis. The joint F-statistic from the first stage in both column 5 and 6 reject the null hypothesis that the instruments selected are not relevant. We obtain higher joint F-statistics (Kleibergen-Paap LM statistic) of 10.65 and 12.48 (21.23 and 18.35, respectively), which are significantly different from zero at the 1% level for the models reported in columns 5 and 6. Finally, the Hansen J-statistic (with p-values of 0.25 and 0.66) shows that the null-hypothesis of exogeneity cannot be rejected at the conventional level of significance.

4.2 Results for the post-reform period

In table 2, we drop the years prior to 1991 to exclusively capture the economic reform period. We do this to investigate whether the extent of policy diffusion in SBRs differ between post-reform years with the years prior to reform. One aspect of doing this is that, as most of the key reform measures were initiated in the early 1990s which includes the decentralization of economic decision making to the states allowing states to frame their independent investment policies, which is reflected in the years post-1990. In columns 1 and 2, we report the baseline results without the spatial lag term. As expected, the income levels of the state and industrialization are the main drivers in promoting effective SBRs in the post-reform years. In columns and 3 and 4, we find that the SBRs spatial lag term is positive and significantly different from zero at the 1% level. After controlling for the lagged dependent variable however, the effects of the SBRs spatial lag appear to be marginally higher than in the baseline models reported in table 1. In columns 5 and 6, which are estimated using the 2SLS-IV method, we find

the positive effect of the SBRs' spatial lag remains intact, and significantly different from zero at the 1% level. After controlling for the lagged dependent variable and endogeneity, the substantive effects of the SBRs' spatial lag is marginally higher than those reported in table 1 (which was estimated using all the years in the sample). The effect of the SBRs' spatial lag increases from 0.54% reported in table 1, to 0.58% for instance in the models estimated using the post-reform years. Note that the endogeneity test results, shown in columns 5 and 6 of table 2, suggest that problems associated with weak instruments have been avoided. Two points are worth noting in the results reported in tables 1 and 2. First, the results suggest that the positive effect of the spatial lag is robust, irrespective of changes in the sample years. This suggests that policy diffusion in promoting SBRs in their respective states was evident from 1985 onwards. The positive effects, however, are slightly higher in the post-reform period after controlling for endogeneity. Meaning, the diffusion of policies between states became almost certain during the post-1990 years. Second, in both tables, the size of the coefficient for the SBR spatial lag variable under the 2SLS-IV estimation method is marginally lower than in the OLS regressions, i.e., the effects are lower when controlling for the potential feedback effect of the SBR index on the spatial lag variable.

4.3 Results with alternative weights

In addition to the baseline results, we check our results by using alternative weights, wherein we replace distance with a contiguity dummy based on borders shared with other states. This measure basically captures the 'neighbourhood effect' and does not consider the location of *j* to states other than *i*. Moreover, this measure assumes for example that, policy diffusion is greater for Bihar from West Bengal than it is from Punjab (this may or may not hold in practice). Using the contiguity measure as a weight, we find the results to be robust, in which we find a

strong positive spatial lag of SBRs, which is significantly different from zero at the 1% level. The results also hold, when including a lagged dependent variable and estimating the sample for only post-reform periods.[13] Second, we use $\varpi_{ijt} = \frac{State\ GDP_{jt}}{\sum_{k \neq i} State\ GDP_{kt}}$ as a weight, where *state-GDP*$_{j,t}$ is the state-level GDP measured in Indian Rupees (in 1999-2000 constant prices). The rationale for using this variable is that GDP (a proxy for market size) is more attractive for investment in states with potentially higher market size (Blonigen, et. al 2007, Carr, Markusen and Maskus 2001, Coughlin, Terza, and Arromdee 1991). Our results show that the positive effects of the SBR spatial lag (weighted with state-GDP) remain robust, irrespective of the inclusion of the lagged dependent variable. The 2SLS-IV results also lead to the same conclusion. The SBR spatial lag shows a positive sign, which is significantly different from zero at the 1% level. The general results are not quantitatively different to those reported in the baseline models in table 1. Third, we also use per-capita GDP as an alternative weighting scheme: $\varpi_{ijt} = \frac{State\ per\ capita\ GDP_{jt}}{\sum_{k \neq i} State\ per\ capita\ GDP_{kt}}$. It should however be noted that when using state level -GDP and state level per-capita GDP as alternative weights, we replace the time dummies with time trend as the spatial lag weighted by these aforementioned variables vary slowly by time and hence are strongly correlated with the time dummies. For example, when moving from the lag for the state Haryana to that of Gujarat state, we essentially take the latter's GDP weighted SBRs out of the spatial lag and replace it with Haryana's. We include a time trend to capture other factors which are not accounted for in the model, such as efficiency gains through

[13] However, it is noteworthy that our instruments when using contiguity as weighting scheme fail to pass the overidentifying test.

technological advancement as these usually grow over time and can be expected to have a positive correlation with SBRs (Cali and Sen 2011). The results basically remain unchanged, although the magnitude of the coefficients varies marginally.[14]

These results which remain robust when using alternative weights (other than distance) provide a consistent picture that is suggestive of strategic complementarity. It clearly suggests the results do not lend support only for the argument of learning by imitation (i.e. yardstick completion). In other words, if yardstick competition were the only the driving force behind our results, then one might expect significant spatial lags for the distance weights but not necessarily elsewhere. In fact, our results with alternative weights (especially with that of State-GDP and state per capita GDP) also show a positive and significant spatial lag. Thus, although one cannot rule out other interpretations, the results are consistent with the various arguments and interpretations explaining the policy diffusion in SBRs discussed in section 2. These results are not shown due to brevity but are made available in the online appendix. Thus, our results appear to be robust, not only to using alternative sample years, but also to using alternative weights.

4.4 Further checks on Robustness

Finally, the baseline specifications are modified to explore the robustness of the main findings. We examine the robustness of our key results in the following way. First, we use an alternative estimation technique to address endogeneity concerns. We therefore replace the 2SLS-IV estimation technique with the GMM estimation technique applied by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). The results are based on the two-step estimator implemented by Roodman (2009) in Stata 11. We apply the Sargan-Hansen test for instrument validity, and the Arellano-Bond test for second order autocorrelation.

[14] In both these cases, our instruments pass the overidentifying tests. The joint F-statistics in the first step is always above the threshold limit of 10 which is significantly different from zero at the 1% level.

We treat the lagged dependent variable and our measure of the SBRs spatial lag as endogenous, and all other variables as exogenous. Following the standard spatial econometric procedure, we use the instruments which are illustrated in section 3.3 and lag them by four years.[15] As before, we include state-specific time dummies and, following Roodman (2009), we collapse the instruments matrix to minimize the number of instruments in the GMM regressions. The results remain mostly unchanged, and the SBRs' spatial lag is positive and significantly different from zero at the 1% level. Note the GMM results also remain robust when estimating our sample for the post-reform period. Second, we utilize a balanced sample by dropping the state of Uttarakhand from our sample. The state of Uttarakhand was carved out from the state of Uttar Pradesh in the year 2000, thus the data on controls for the 1980s and 1990s are absent, making our sample an unbalanced panel. The results once again do not differ from the baseline models in table 1. Third, we also control for a centre-state alignment by including a dummy variable which is coded as 1 if the Chief Minister of the state's party belongs to the same party as that governing at the center (or the leading party of a coalition government at the center, from which the Prime Minister comes) and 0 otherwise. We control for the dummy because it is plausible that the central government would like to bring some policy changes at the state-level but is hampered by the federal structure. In such cases, the desired policies can be first implemented in those states in which it is in power. On the other hand, if states are in competition to attract investment, then such competition might ensure that other states follow suit in implementing the policy changes introduced by the centre in its aligned states. Our results show that after controlling for center-state alignment, the positive spatial lag remains robust. Fourth, we include a spatial lag of state per capita GDP (weighted by inverse distance) into the models to capture potential omitted

[15] As a further check for robustness, we used different versions of lagged values for instruments. We employ a six year lag structure, and the results remained unchanged.

variable bias in our model. It is likely that economic development in neighboring states might influence the state in question to promote effective SBRs with the intent to attract investment. Also, given the positive correlation between SBRs and economic development, it might be that our spatial lag of SBRs might be picking up the traditional positive association between development levels of other states. Including the spatial lag of per capita GDP of others states do not alter our main findings. The positive significant effect of the spatial lag variable remains intact even after controlling for a lagged dependent variable, addressing endogeneity, and a smaller sample including the post-reforms period. Finally, we considered a set of specifications that included the weighted average of other states' control variables as control variables, i.e. a *Durbin spatial model*:

$$SBR_{it} = \phi_i + \rho \sum_{j \neq i} \varpi_{jit} SBR_{it} + \beta Z_{it} + \sum_{j \neq i} \varpi_{jit} \beta_2 Z_{it} + \nu_i + \eta_t + \omega_{it}$$

Note that in this case, we were not able to estimate an instrumental variable estimator because we include all of the weighted sum control variables as controls in the model thus leaving us with no excluded instruments. In any case, when doing so, the weighted average of other states' controls was rarely significant (with the exception of population). Nevertheless, the results for the spatial lag of SBRs always remained positive and significantly different from zero at 1% level when estimating the models with all years and post-reforms years. The results related to the robustness checks are not shown here for the sake of brevity, but are available from the authors upon request. In summary, taken together, the results seem to be robust to sample size, specification, and testing procedure.

5. Conclusion

The aim of this paper was to present the first set of empirical results exploring the possibility of diffusion of policies to improve effective State Business Relations among states in India. We examine this question by using the comprehensive index constructed by Cali and Sen which measures effective SBRs in Indian states on dimensions of transparency, reciprocity, credibility and mutual trust between the state and industry for 16 industrial states, and a spatial econometrics approach. Using OLS fixed effects estimation in a panel dataset spanning the 1985–2008 period, we find a positive and significant spatial lag which is consistent with strategic complementarity in SBRs. Furthermore, this interdependence is also most evident during the economic reform period, i.e., post 1991 years. We interpret this as improvements in SBRs across states and over time which is a result of both inter-state competition to attract large scale private and foreign investments and learning by imitation. The diffusion of such policies would help improve investment laws, bureaucratic efficiency, business climate in general and institutional quality of states. Our findings are robust to controlling for endogeneity concerns using the two-stage least squares method. Taken together, these results also remain robust to alternative sample, estimation techniques, and alternative weighting schemes.

The states' attempts at improving SBRs are part of a larger process in India's investment-policy reforms that has been furthered by the dynamics of inter-state competition and learning by imitation. It is very important to develop state business relations by improving institutions and enhancing public-private mediation in order to develop a sustainable business-led development policy. Under a democratic regime like India a robust state business partnership requires competent, resourceful and relatively autonomous states, economic bureaucracy and a well-organized private sector. If the business sector cannot constitute itself in the form of various

broad based self-governing entities, the policy concerns of the business elite inevitably become narrow in scope and short term in nature. A robust state business partnership not only ensures countries meaningful participation in the global economy but also enhances the capacity to respond to the socioeconomic demands of their domestic constituents.

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Table 1: Baseline results (Dependent variable: SBRs index)

	(1)	(2)	(3)	(4)	(5)	(6)
	SBR index	**SBR index**	**SBR index**	**SBR index**	**SBR index**	**SBR index**
	OLS-FE	**OLS-FE**	**OLS-FE**	**OLS-FE**	**2SLS-IV**	**2SLS-IV**
Lagged Dependent Variable		0.745***		0.140***		0.360***
		(0.0406)		(0.0385)		(0.0619)
State Business Relations Index - Spatial Lag			**0.620*** **	**0.540*** **	**0.461*** **	**0.344*** **
			(0.0160)	**(0.0190)**	**(0.0556)**	**(0.0542)**
State Per capita GDP (log)	0.0300	0.0255**	0.00569	0.00865**	0.0119**	0.0148***
	(0.0195)	(0.0108)	(0.00491)	(0.00388)	(0.00598)	(0.00467)
Population (log)	0.232**	0.0639	-0.144***	-0.126***	-0.0474	-0.0569*
	(0.0974)	(0.0556)	(0.0261)	(0.0230)	(0.0427)	(0.0320)
Industry Share in State GDP	0.00247***	0.000706*	-0.00030**	-0.00025**	0.000414	9.66e-05
	(0.000739)	(0.000414)	(0.000139)	(0.000117)	(0.000340)	(0.000219)
INC Ruling Years	0.0203***	-0.00318	0.00360**	0.000991	0.00791***	-0.000522
	(0.00612)	(0.00418)	(0.00145)	(0.00134)	(0.00255)	(0.00187)
BJP Ruling Years	-0.00543	-0.00501	0.000356	6.20e-05	-0.00113	-0.00178
	(0.00740)	(0.00445)	(0.00159)	(0.00145)	(0.00200)	(0.00193)
Left Front Ruling Years	0.00859	0.000706	0.00369	0.00121	0.00495	0.00103
	(0.0115)	(0.00779)	(0.00433)	(0.00414)	(0.00469)	(0.00437)
Regional Parties Ruling Years	-0.00876	-0.00114	0.00239	0.00249*	-0.000484	0.00118
	(0.00629)	(0.00411)	(0.00161)	(0.00149)	(0.00240)	(0.00193)
Political Instability	-0.0108	0.00314	0.00245	0.00212	-0.000944	0.00249
	(0.00949)	(0.00622)	(0.00326)	(0.00272)	(0.00389)	(0.00267)
R-squared (within)	0.7318	0.8981	0.9821	0.9864	0.9655	0.9748
State specific dummies	YES	YES	YES	YES	YES	YES
Time specific dummies	YES	YES	YES	YES	YES	YES
Joint F-Statistics					10.65***	12.48***
Kleibergen-Paap rk LM statistic					21.23***	18.35***
Hansen J-Statistics (p-value)					0.2499	0.6589
Number of States	16	16	16	16	16	16
Total Observations	357	342	357	342	357	342

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 2: Post 1990 economic reforms period results (Dependent variable: SBRs index)

	(1)	(2)	(3)	(4)	(5)	(6)
	SBR index	**SBR index**	**SBR index**	**SBR index**	**SBR index**	**SBR index**
	OLS-FE	**OLS-FE**	**OLS-FE**	**OLS-FE**	**2SLS-IV**	**2SLS-IV**
Lagged Dependent Variable		0.732***		0.0893***		0.325***
		(0.0477)		(0.0306)		(0.0758)
State Business Relations Index - Spatial Lag			**0.619*** **	**0.580*** **	**0.506*** **	**0.367*** **
			(0.0110)	**(0.0182)**	**(0.0568)**	**(0.0678)**
State Per capita GDP (log)	0.0472*	0.0348**	-0.000967	0.000569	0.00784	0.0131*
	(0.0262)	(0.0171)	(0.00624)	(0.00631)	(0.00628)	(0.00790)
Population (log)	0.111	0.0587	-0.138***	-0.128***	-0.0921***	-0.0596
	(0.123)	(0.0790)	(0.0249)	(0.0248)	(0.0342)	(0.0401)
Industry Share in State GDP	0.00193**	0.000658	-9.20e-05	-0.000119	0.000277	0.000166
	(0.000801)	(0.000529)	(0.000121)	(0.000119)	(0.000300)	(0.000249)
INC Ruling Years	0.00679	-0.00276	0.00105	0.000253	0.00210	-0.000852
	(0.00612)	(0.00471)	(0.00146)	(0.00149)	(0.00181)	(0.00208)
BJP Ruling Years	-0.0155**	-0.00456	0.000592	0.000907	-0.00235	-0.00110
	(0.00748)	(0.00470)	(0.00165)	(0.00156)	(0.00216)	(0.00197)
Left Front Ruling Years	-0.00529	3.23e-05	0.00357	0.00366	0.00195	0.00233
	(0.0151)	(0.00966)	(0.00424)	(0.00439)	(0.00428)	(0.00498)
Regional Parties Ruling Years	0.00179	-0.000937	0.00107	0.000780	0.00120	0.000150
	(0.00636)	(0.00485)	(0.00162)	(0.00163)	(0.00189)	(0.00226)
Political Instability	-0.0103	-0.00508	0.00428	0.00399	0.00162	0.000664
	(0.00925)	(0.00656)	(0.00318)	(0.00288)	(0.00358)	(0.00304)
R-squared (within)	0.7274	0.8700	0.9845	0.9856	0.9760	0.9701
State specific dummies	YES	YES	YES	YES	YES	YES
Time specific dummies	YES	YES	YES	YES	YES	YES
Joint F-Statistics					10.13***	9.60***
Kleibergen-Paap rk LM statistic					18.12***	12.51***
Hansen J-Statistics (p-value)					0.1482	0.5065
Number of States	16	16	16	16	16	16
Total Observations	270	270	270	270	270	270

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix

Appendix 1: States under study

Andhra Pradesh	Haryana	Maharashtra	Tamil Nadu
Assam	Karnataka	Orissa	Uttar Pradesh
Bihar	Kerala	Punjab	Uttaranchal
Gujarat	Madhya Pradesh	Rajasthan	West Bengal

Appendix 2: Descriptive Statistics

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
SBRs Index	381	0.475	0.094	0.142	0.740
Spatial Lag of SBRs index	384	0.755	0.199	0.000	1.204
State Per capita GDP (log)	370	9.583	0.420	8.478	10.643
Population (log)	360	15.436	0.595	14.164	16.811
Industry share in State GDP	376	19.697	6.075	4.052	38.130
INC ruling years	370	0.468	0.500	0.000	1.000
BJP ruling years	370	0.203	0.403	0.000	1.000
Left front ruling years	370	0.103	0.304	0.000	1.000
Regional parties ruling years	370	0.422	0.494	0.000	1.000
Political Instability	370	0.049	0.215	0.000	1.000

Appendix 3: Data definitions and sources

Variables	Definitions and data sources
SBRs index	State Business Relations index coded on the scale of 0 – 1 where highest value represents effective state business relations. SBR index comprises of four sub-indices namely, private sector, public sector, interaction between private and public sector and avoidance of collusive behavior. The four sub-indices are aggregated into SBR index.
Spatial lag - SBRs	Own construction as described in section 3.1
Per capita GDP (log)	State per capita GDP in Indian Rupees, 1999-2000 constant prices (Indian Rupees) from Reserve Bank of India, Mumbai
Population (log)	Total population of each state obtained from Indiastat.com
Industry share in GDP	Share of Industry in State GDP from Reserve Bank of India, Mumbai
Political Parties in power	Dummy for each of the political party and allies (namely, INC, BJP, Left front and Regional parties) in power in state *i* in year *t* based on the information published by Election Commission of India.
Political Instability	Dummy if a state *i* in year *t* has witnessed President's rule.

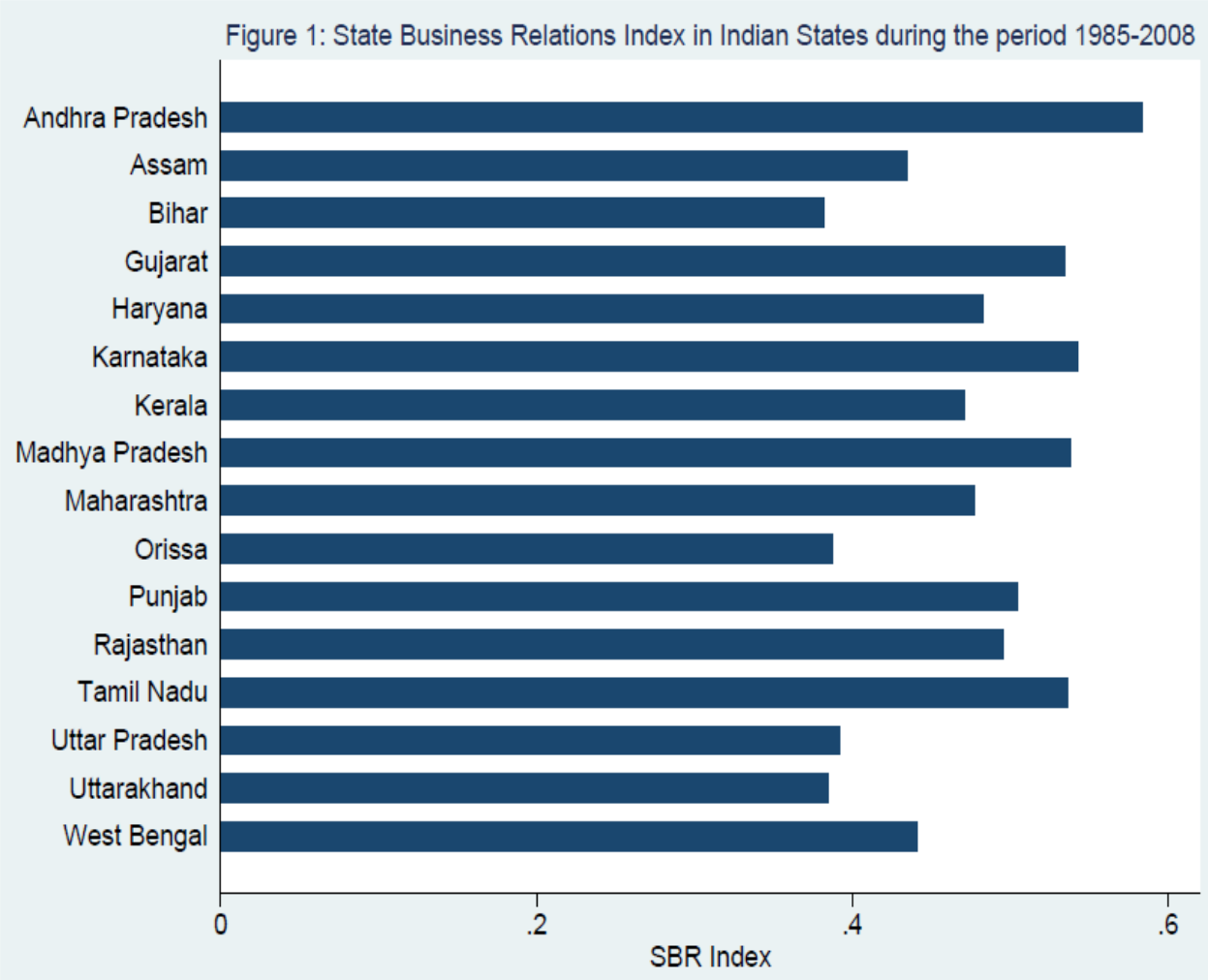
Figure 1: State Business Relations Index in Indian States during the period 1985-2008
Andhra Pradesh
Assam
Bihar
Gujarat
Haryana
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Orissa
Punjab
Rajasthan
Tamil Nadu
Uttar Pradesh
Uttarakhand
West Bengal
0
.2
.4
.6
SBR Index

Figure 2: Evolution of SBRs and Spatial Lag in Indian States