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Judicial quality and regional firm performance: The case of Indian states☆

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Higher quality institutions help a firm to invest in institutional-dependent inputs, which might affect a firm's performance. I use data for Indian manufacturing that matches state-by-state firm-level data with state-by-state data on particularly important institution – Judicial quality. Results show that judicial quality is a significant determinant of higher firm performance – both for exports and domestic sales. My most conservative estimate suggests that a 10% increase in judicial quality of a region helps to increase the sales of a firm by 1–2%. I explicitly control for the 'selection' effect by using a two-step Average Treatment Effect (ATE) procedure. The results also support my initial findings. My results are robust to a battery of robustness checks. *Journal of Comparative Economics* **000** (2016) 1–17. Centre for International Trade and Development, Jawaharlal Nehru University, New Delhi, India.

1. Introduction

Following the seminal work by Douglass North (North and Thomas, 1973; North, (1981, 1994)), there is a growing empirical work, which confirms the connection between institutions and macro-level economic performance[1]. More recently, institutions have been shown to have an effect at the sectoral level in the sense that it influences the composition of national output and thus a nation's comparative advantage (Levchenko, 2007). This connection between sectoral-level performance

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[1] Keefer and Knack (1995, 1997); La Porta et al., (1997 and 1998); Acemoglu et al., (2001, 2002))

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and institutions is given further support by work on combining data on trade flows and judicial quality (Nunn, 2007; Ma et al., 2010). These studies show how contract enforcement act as a source of comparative advantage. In particular, countries with good contract-enforcement specialize in goods that are intensive in relation-specific investments.

My paper follows Levchenko (2007) and Nunn (2007) but takes the institutional connection to the sector and regional level through putting forward the following question – is the quality of institutions, particularly judicial quality, one of the key determinants of firm performance, controlling for various other firm, industry and state-level characteristics? This is the central question of my paper. The goal of this paper is not to create any new theoretical foundations about the effect of judicial quality within a single-country framework, but to empirically explore a theoretical framework through different avenues. To understand this, India's growth performance, both export and GDP, in the last decade and India's judicial system offer an excellent case to explore the effect of judicial quality on a firm's performance - exports (intensive margin of trade)[2] and domestic sales. India's exports grew at around 20% on average between the period 2000 and 2010. The export share in GDP increased from 10% in 2000 to around 30% in 2010. India's merchandise exports share in world exports also increased from 0.7% to 1.6 during this time period. On the other hand, GDP also grew at an average rate of 7–8% during the last decade, except for 2008–09. Quite understandably, there are many studies that have been attempted to understand the reasons behind India's growth, its comparative advantage, and factors affecting firm performance. Ahsan (2013) uses variation in judicial efficiency at the state-level to show that for a 10% point decline in input tariffs, firms in the state at the 75th percentile of judicial efficiency gain an additional 3.6% points in productivity.

On the other hand, India's judicial quality varies significantly across regions. India has a three-tier legal system. The Supreme Court at the centre, followed by the High Courts in each state and finally lower courts at the local level. The President of India appoints judges to the Supreme Court and High Courts after consultation with the Chief Justice of India and the relevant State Governor, respectively. These judges are appointed on the basis of seniority and not on political preferences. On the other hand, the state governments control the administration of the state legal system without much interference from the Supreme Court. As a result of which, significant differences can emerge across states with regard to the speed with which the cases are resolved. Furthermore, the rules and regulations at all the three levels of the legal system in India are outlined by the Code of Civil Procedure, which is uniform across states. Kohling (2000) points out that though the underlying laws are the same, significant differences can emerge as a result of the way in which the rules and procedures are implemented in each state over time. So, differences in state courts can arise because of: (i) differences in the interpretation of rules and procedures, and (ii) differences in quality of the state governments, which control the state courts. In particular, significant difference in judicial quality can arise as a result of the enforcement of the regulations outline in the Code of Civil Procedure. As a result, the efficiency of courts in enforcing contracts can vary significantly across different regions in India. And, this in turn can influence, to a significant extent, the local business climate. Acemoglu and Dell (2010) points out that the variation in regulation implementation and law enforcement within a country really matters. Johnson et al. (1998) finds that inter-regional judicial discretion is particularly large in developing and transition countries.

Using Indian firm-level manufacturing data, I extend Levchenko-Nunn by matching state-level, firm-level performance with region-level measures of judicial quality. The paper explores the link between the judicial quality and firm performance, through the usage of intermediate inputs, at the most disaggregated level. In other words, my identification strategy, following Levchenko (2007), is based on the interaction between firm-level usage of intermediate inputs (a proxy for contracting-intensity) and the region's judicial quality (a proxy for contract enforcement). The most notable finding is that judicial quality matters positively and significantly for firm performance, both for exports and domestic sales. My results also show that firms' in industries that are contract-intensive tend to locate in regions with good contract enforcement. The key novelty of the paper is that this is the one of the very few studies (the others being Feenstra et al., (2013) and Wang et al., (2014) on China) that explores the relationship between the judicial quality and firm performance (both international and domestic) at the most disaggregated level; it uses an important objective measure of the judicial quality and last but not the least, it controls for the endogeneity problem with the state-of-the-art econometric techniques.

The theoretical underpinning of the empirical strategy comes from the contract theory. Grossman and Hart (1986) and Hart and Moore (1990) claims that under-investment may occur when contracts cannot be enforced due to the poor quality of institutions. Therefore, quality of institutions could act as a disincentive for firms or industries, which require inputs of relationship-specific investments. More recently, Antras (2003, 2005) provides us with further theoretical guidance on the micro effect of institutions. These studies show us how contract enforcement has an effect on the business decisions and trade structures of multinational companies.

Applying this to the current context, I argue that higher degree of judicial quality–a crucial element of the overall institutional quality–could reduce the idiosyncratic risk of a firm in setting up contracts and incentive schemes with its intermediate input supplier. This would help the firms in specializing goods, which require institutionally-dependent inputs, thereby maximizing the gains from higher exports or output. That is, the judicial environment of a region might help in addressing the holdup problem regarding the intermediate input suppliers. Higher judicial quality helps in reducing the additional transaction costs, which the firms need to incur, if a holdup problem arises. In economies, where such costs are

[2] I particularly focus on intensive margin of trade following this two pioneering work. The first one is by Evenett and Venables (2002). They use 3-digit trade data for 23 exporters over 1970-1997 and found that about 60 per cent of total export growth is at the intensive margin. Second, Brenton and Newfarmer (2007) using SITC data at the 5 digit-level over 99 countries and 20 years also found that intensive-margin growth accounts for the biggest part of trade growth (80.4%).