

3

Improving the Climate for Investment and Business in South Asia



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■ Introduction

Increasing growth is a central goal of policymakers interested in improving the opportunities and living standards of their constituents. The sustained high growth rates of China continue to grab headlines. Recent growth in the South Asia region has also been impressive, although less consistent across the region. To understand why growth is higher in some locations than others and to highlight ways to foster higher growth, we need to understand the investment climate faced by entrepreneurs. The institutional, policy, and regulatory environment affects the ease of doing business and the scope of opportunities facing entrepreneurs.

Here we will focus on the microeconomic underpinnings of growth in the South Asia region. Decisions to invest, to hire new workers, or to expand production are made by firms every day. These decisions are then aggregated across the whole economy to give the country performance measures. Understanding the factors influencing these decisions from the firms' perspective can give insights into the aggregated dynamics and performance in the aggregate measures of growth and productivity.

Growth can be achieved by increasing inputs, the amount of machinery, or human capital. It can also be achieved by improving productivity or producing more with the same inputs. Most see the challenge as how to increase productivity. There are two components: The first is related to technology. The second is the environment, which enables entrepreneurs to work more efficiently, such as fewer difficulties accessing raw materials, fewer distractions dealing with bureaucratic harassment and demands for bribes, or less exposure to theft.

Total factor productivity (TFP) captures these last two sources. Much of the focus has traditionally been on the first source, on differences in technology. More recently, attention has shifted to differences in the broader institutional, social infrastructure, or investment climate setting.¹ The World Bank's *World Development Report* (2005) focused on the latest evidence this perspective brings to growth and poverty reduction (World Bank, 2004). We will compare countries across South Asia and with China on key dimensions of the investment climate: access to infrastructure and financial services, the security of property rights, the burden of regulatory requirements, and the quality of governance, providing evidence on how they can improve productivity and the prospects of doing business in South Asia.

In this view, the investment climate can be understood as a crucial link between the efforts of sowing and reaping. If the local government is highly bureaucratic and corrupt, if government's own provision or regulation of infrastructure and financial services is inefficient so that firms cannot get reliable services, then returns on potential investments will be low and uncertain, and there would not be much accumulation and growth in these environments. On the other hand, in developing locations that create a good governance and business environment, returns and accumulation should be high. Thus, the expected rate of return on a project is determined not only by the degree of efficiency on the factory floor but also by the broader environment, including the ability to appropriate the returns. In fact, the costs associated with a poor investment climate can more than offset technical efficiency gains.

■ Disaggregating Investment Climate Measures

New measures are available to benchmark the quality of a location's investment climate. Polls of expert opinions including the Global Competitiveness Report, Transparency International, and International Country Risk Guide have provided subjective measures for more than a decade. Two recent initiatives provide more objective measures. The World Bank annual *Doing Business* report provides time and cost measures associated with fully complying with a set of regulations according to statutory requirements. The World Bank Investment Climate Surveys also provide time and cost measurements based on the actual experience of a wide range of firms. The topics covered include key regulatory areas, access to finance and infrastructure services, as well as firm performance measures.

Using these measures of the investment climate in South Asia identifies areas where entrepreneurs could benefit from reforms. Providing comparisons across countries allow policymakers to benchmark conditions in their countries. This can highlight areas for reform, providing demonstration effects of what can be achieved.

Subjective Rankings

The Global Competitiveness Index publishes a *Business Competitiveness Index* (World Economic Forum, 2004). In 2004, 4 countries from South Asia were included in its list of 101 countries. India ranked thirty-seventh, Sri Lanka fifty-seventh, Pakistan seventy-fifth, and Bangladesh ninety-first according to the perceptions of expert respondents. The report then details specific areas of relative strengths and weaknesses of each country. India's strong performance is due to the strength of its pool of scientists and engineers, quality of management schools, and the availability of locally based competitors. The factors identified as 'most problematic' for doing business in the region were strikingly similar across the countries. Corruption, inefficient bureaucracy, inadequate infrastructure, and policy instability are the top concerns in Bangladesh, Sri Lanka, Pakistan, and India. Restrictive labour regulations joins the list in India.

Looking at measures of institutional quality and governance the ranking shifts somewhat. Table 3.1 gives indicators based on the compilation of all the major indices published from a variety of sources, normalised around an average of 0 and a standard deviation of 1. On these indicators Sri Lanka performs relatively better, except for the measure of political stability. Bhutan and the Maldives have reasonably favourable results, although they are based on a smaller number of underlying ratings. Still, the concern regarding corruption in much of the region does come through, as does the dampening effect of political instability.

Table 3.1: Governance Indicators

	<i>Corruption</i>	<i>Government Efficiency</i>	<i>Political Stability</i>	<i>Regulatory Quality</i>	<i>Rule of Law</i>
Bangladesh	-1.09	-0.72	-1.24	-1.15	-0.86
Bhutan	0.69	-0.14	0.84		0.27
India	-0.31	-0.04	-0.81	-0.59	-0.09
Maldives	0.12	0.47	0.82		-0.57
Nepal	-0.61	-0.9	-1.74	-0.6	-0.82
Pakistan	-0.87	-0.57	-1.59	-1.03	-0.78
Sri Lanka	-0.16	-0.27	-1.06	0.21	-0.03

Source: Kaufmann, Kraay, and Mastruzzi, 2005.

Note: Scores are centred on 0 with a standard deviation of 1.

These subjective measures do provide a picture of the relative strengths and weaknesses of different countries. But the subjective nature of the rankings makes it difficult to make comparisons or to measure improvements over time. The World Bank has launched two extensive new efforts to fill the gap and to provide more objective measures of key dimensions of climate for investing and doing business (Table 3.2).

Table 3.2: New Data Sources from the World Bank Allow for Comparisons Across Countries

	<i>Investment Climate Surveys</i>	<i>Doing Business</i>
Country Coverage	Launched in 2001; the report draws on more than 50,000 firms in 70 countries. Each year an additional 15–20 surveys are fielded. Second round surveys are now underway, including in India, Pakistan, and China.	Launched in 2003; 145 countries are now covered each year.
Investment Climate Dimensions Covered	The standard questionnaire of 82 questions covers regulations, governance, access to finance, and infrastructure services. It also collects data on firm productivity, investment, and employment decisions.	Ten areas of regulation: business registration, property registration, insolvency, contract enforcement, hiring and firing workers, accessing credit, customs, licenses, investor protection, and tax payments.
Types of Variables	Covers both objective and perception data. The objective data include the time to complete processes or receive services, and the monetary costs of various disruptions and regulations. In addition, respondents give perceptions of potential constraints, and assessments of risks and competition.	Objective measures of the number of procedures, the time to complete them, and the fees and costs associated with full compliance.
Whose Perspective	Surveys cover a diverse range of sizes and activities, with random samples of several hundred firms. Data are gathered through face-to-face interviews conducted with senior managers and accountants.	Use a single, defined, hypothetical firm and transaction. Judgements based on assessment of up to five local experts (lawyers, accountants).
Differences within a Country	Samples cover multiple locations within each country.	A single indicator is given for the largest city in the country. For some large countries, including India and Pakistan, additional cities are available. ²
Basis of Assessment	Indicators are based on the experience reported by firms, providing ranges of how policies are implemented in practise.	Indicators measure formal regulatory requirements.

Source: Adapted from World Bank, 2004.

***Doing Business* Examines Regulatory Hurdles Facing Entrepreneurs**

Doing Business provides detailed information on the procedures, their time, and costs of complying with a set of regulations from opening a business, accessing credit, hiring and firing workers, and closing a business (World Bank, 2005b). Requirements for specific, tightly defined transactions can then be compared across countries and over time. The 10 regulatory areas are reported separately, with an aggregate index.

Taking a simple average of all the *Doing Business* indicators, India ranks in the bottom 25 per cent of the 155 countries, Sri Lanka at the midpoint, and Bangladesh, Nepal,

and Pakistan in the second quintile. On the other hand, China is in the third quintile, while Malaysia and Thailand are in the top 15 per cent of countries according to these measures. The differences with the Global Competitiveness Report is in part because these rankings only include the regulatory environment in 10 specific areas, and does not address other issues such as infrastructure services, availability of skilled labour, or corruption. Certainly the regulatory environment is an extremely important component, but the rankings would likely shift if other dimensions were included.

This simple ranking also masks a number of features. First, looking across the 10 regulatory areas, the same country can do extremely well on some dimensions and rather poorly on others. It is not the case that the efficient registration of property or businesses implies that contracts can be enforced easily or that investors will necessarily be protected. Thus, the Maldives ranks the best on the ease of paying taxes, but is 134 out of 155 on the ease of getting credit. Bhutan is 42 on the ease of registering property but 143 on the ease of closing a business.

Second, there is considerable variation within the region as to where countries' relative strengths are. Thus, while the region as a whole generally makes it easy to register property, Bangladesh stands out with some particularly onerous requirements, being 151 compared to India's being 29.

Third, *Doing Business* comparisons are based on the formal requirements and may or may not be a good proxy for how the laws and regulations are actually applied in practice. In fact, where there are gaps between the investment climate survey results and the *Doing Business* indicators point to areas where reforms would be desirable and are often associated with opening up opportunities for bribes.

Using Investment Climate Surveys to Identify Key Challenges for Improving the Investment Climate in South Asia

Results from the investment climate surveys are consistent with the themes highlighted in the perception data of international experts as reflected by the Global Competitiveness Index. The investment climate surveys are based on large, random samples of firms in specific sectors in four South Asian countries: Bangladesh, India, Pakistan, and Sri Lanka. For additional comparison, results are also compared to those of China. All the surveys used a common instrument and sample design. Key manufacturing sectors were included in each country based on their contribution to output and exports, including garments, textiles, leather products, food products, electronic and electrical equipment, metal products, and chemicals. Within each country, major industrial centres were included. The sample sizes are 1,001 in Bangladesh; 1,900 in India; 879 in Pakistan; 452 in Sri Lanka; and 1,500 in China. These firms report that significant constraints are an unreliable access to electricity, corruption, a lack of government efficiency, and burdensome labour regulations (Figure 3.1).

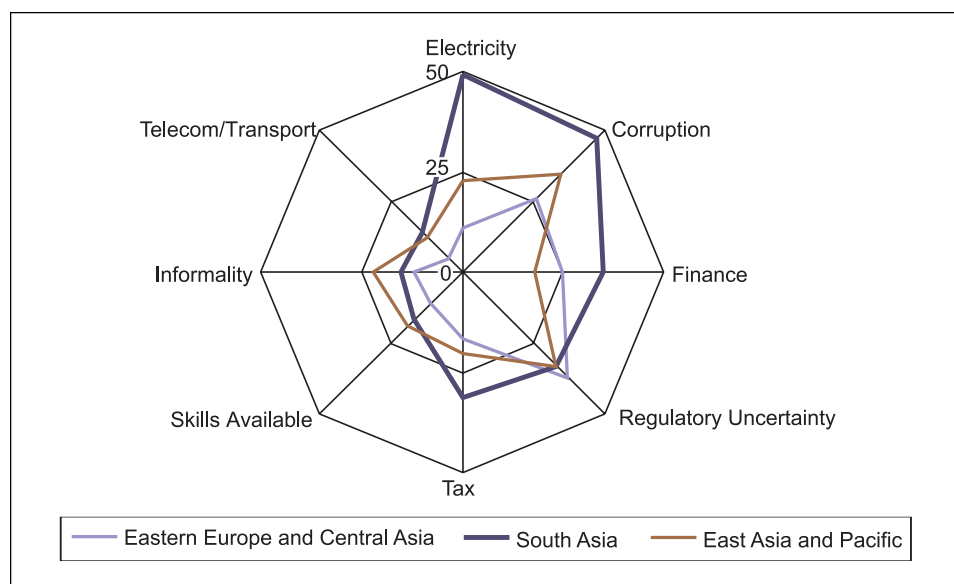


Figure 3.1: Share of Firms Reporting the Issues as a 'Major' or 'Severe' Constraint on the Operation of their Business

Source: Investment Climate Surveys.

Access to Reliable Electricity

Access to a reliable source of electricity topped the list of concerns for the region as a whole. The level of the constraint is particularly striking compared to other regions in Asia. Firms in Bangladesh report that power interruptions are virtually a daily occurrence. Compared to all other regions, firms in South Asia were likely to lose a higher share of their output due to power losses. In Bangladesh, the losses amount to 3.3 per cent of sales, which in turn is much better than either Pakistan (5.4 per cent) or India (5.5 per cent) but significantly higher than in China (2.2 per cent of sales). For all of these measures there is also much variation within countries. In India, for example, Bangalore is similar to China at 2 per cent of sales lost, while Kolkata is very poor for a large city (6 per cent of sales). This is due not only to time lost during an outage, but also the production spoiled owing to the interruption in the process and the time needed to reset machinery.

Given the losses stemming from power failures, many firms respond by running their own generator. While it is not uncommon for large firms in any location to have their own power generators, for small and medium enterprises (SMEs) the cost of maintaining a power generator is quite high and burdensome. Thus, another gauge of the reliability of the power supply is the proportion of firms that have their own generators. The patterns are similar; the share of firms with their own generator is

only 17 per cent in the China sample but half of the SMEs sampled in Sri Lanka and Bangladesh and 60 per cent in India and Nepal.

Government Regulations

The issue of corruption was the second greatest source of concern reported in the South Asia region as a whole. This correlates significantly with concerns that the interpretation of regulations can be unpredictable. When officials have discretion in how particular regulations will be implemented, there is an opening for unofficial payments to determine the outcomes. The costs of these bribes and the uncertainty of the standards that will be imposed can reduce the incentive to invest or to expand. The magnitude of the issue is seen in the share of firms reporting to make such payments and the delays faced in the provision of public services.

The survey includes a number of questions that get at the efficiency of the government in providing services that are essential for firms. It includes a general measure of the quality of government efficiency as experienced by firms. The share of firms that consider the provision of government services to be inefficient varies from less than 30 per cent in China to 60 per cent in Pakistan, Sri Lanka, and Nepal. The time management has to spend with officials can be more than 10 per cent in India and Pakistan, while closer to 4 per cent in Sri Lanka. Requests for additional payments to 'get things done' are reported as extremely common. Across the countries the size of bribes was between 2.2 and 2.5 per cent of sales. The efficiency of providing services is also illustrated by the time it takes to get hooked up to utilities. For a new phone line, firms have to wait on average 35 days in India and 130 days in Bangladesh.

Particular attention is paid to two areas of regulation given their importance to growth and the prospect of increased regional integration. They are customs administration and labour regulations.

Customs Administration

Customs administration is of particular interest in assessing the constraints to better regional integration. The data show there is variation in the time it takes to get goods through customs. This is both at the level of securing the necessary paperwork as well as the actual inspection process. The *Doing Business* database reports on the official time to obtain the paperwork to clear goods, with the investment climate surveys reporting on the actual time it takes to clear customs once goods have left the production facility. This variation not only introduces greater uncertainty in the delivery process, but it can mean the difference between fulfilling an export order or not. With buyers facing many potential suppliers, reliable delivery schedules can be key.

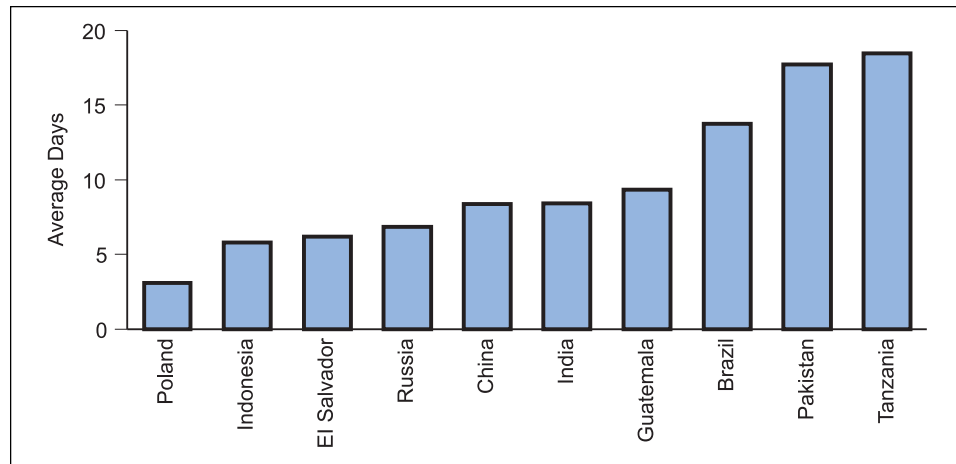


Figure 3.2: Average Time to Clear Customs

Figure 3.2 shows the average time to clear customs, with India reporting just over nine days, while firms in Pakistan can face double that. However, Figure 3.3 shows the extent of variation around these averages.

A related issue is the cost of transportation. This is both across borders and within a country. Firms report significant delays in transportation owing to poor infrastructure conditions as well as the need to pass often repeated inspections. Costs are even higher taking into account the potential of theft and breakage that occurs during the transportation of goods to market.

The impact of such customs and transportation delays can be seen in different dimensions. One impact is that firms respond by increasing their holdings of inventories

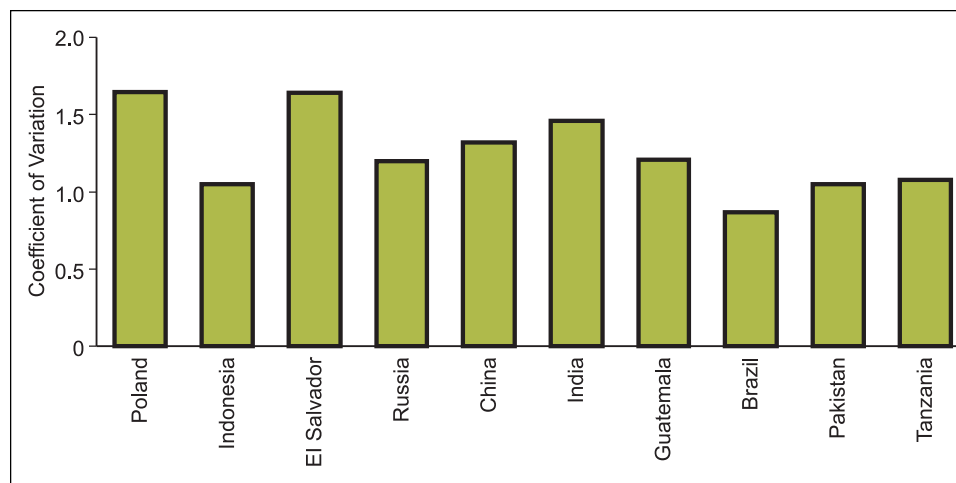


Figure 3.3: Extent of Variation to Clear Customs (Around the Averages)

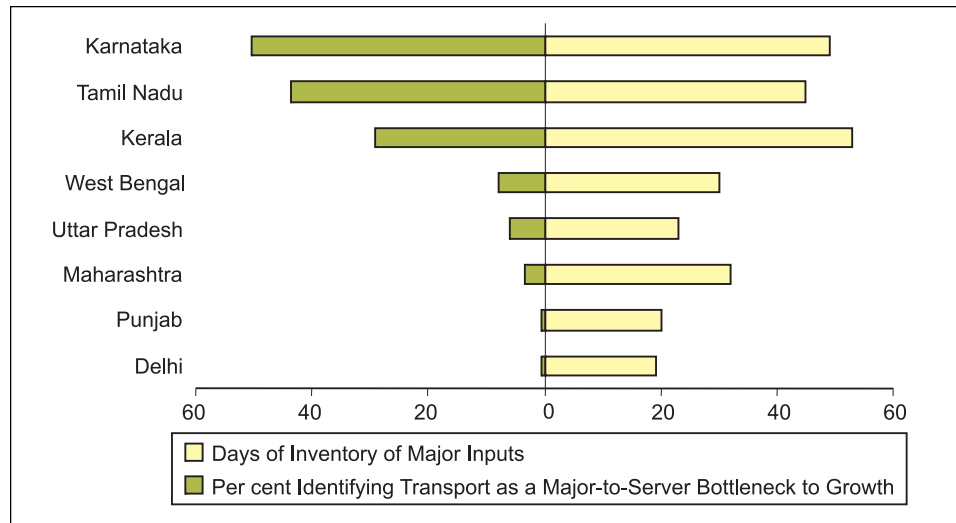


Figure 3.4: Evidence from India that Poor Transportation Raises Inventory Costs

Source: Investment Climate Survey in India, 2002.

(Figure 3.4). Such increased holdings are needed to ensure against supplier delays and can tie-up significant working capital that might have been directed to more efficient purposes.

Another impact can be seen on the ability of firms to export. Here the experience with customs administration is linked with access to infrastructure, finance, and public utilities. Figure 3.5 illustrates the results if the access to these services were improved

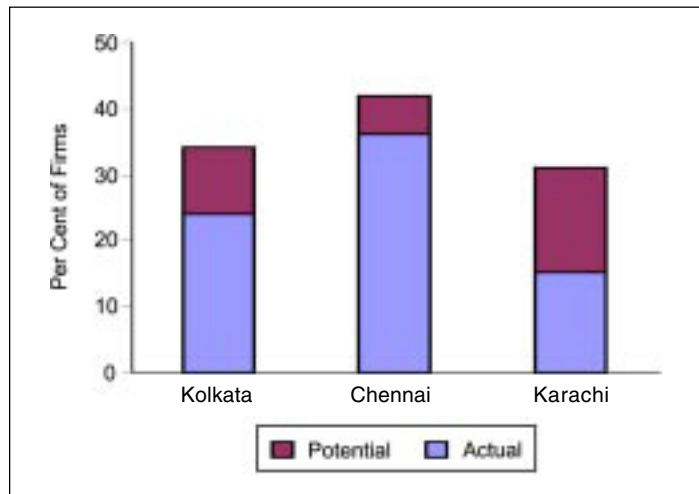


Figure 3.5: Share of Firms Exporting: Response to a One Standard Deviation Improvement in Transportation, Access to Electricity, and Finance

by one standard deviation and what the implication would be on the probability that a firm would be an exporter. The share could rise by over 10 per cent in Chennai and double in Karachi (see the next section for more detailed results).

Labour Regulations

According to the formal labour standards from *Doing Business* indicators, South Asia has some of the most stringent requirements. While intended to protect workers, the consequence can be that firms are reluctant to hire in the first place or seek to keep workers off the books. The investment climate surveys show that over a third of firms in India and Sri Lanka report that the stringency of the regulatory requirements keep them from employing their desired level of employment (Figure 3.6).

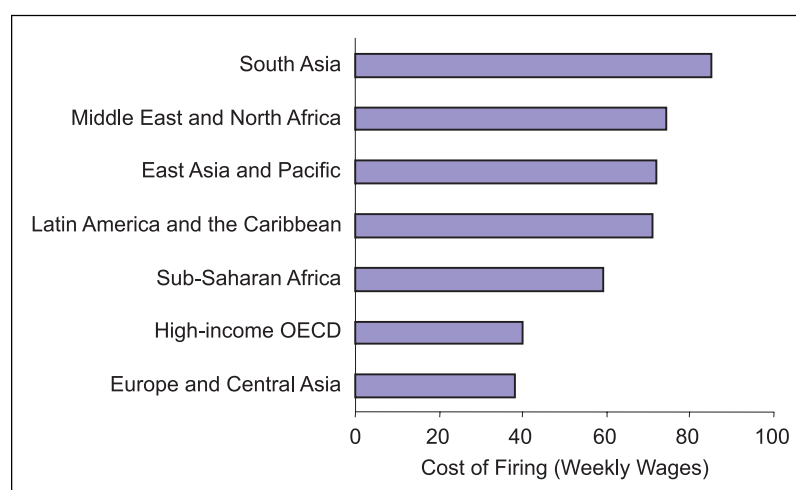


Figure 3.6: Highest Firing Costs in South Asia

Source: World Bank, 2005a.

Property Rights

The ability of firms to appropriate the returns to their investments and activities can be divided into two broad types of property rights (Acemoglu and Johnson, 2005). The role of government expropriating resources through bribes and raising risks owing to the unpredictability of how regulations will be implemented have been discussed earlier. The other dimension is the quality of institutions for dealing with disputes and enforcing contracts between private parties. The *Doing Business* indicators provide measures of the cost and time to enforce a contract (Figure 3.7). These lengthy times can help explain why the firms surveyed rarely turn to the court system in the region. Fewer than 5 per cent of firms with a dispute reported taking the dispute to the courts. The strength of the legal framework thus has a significant

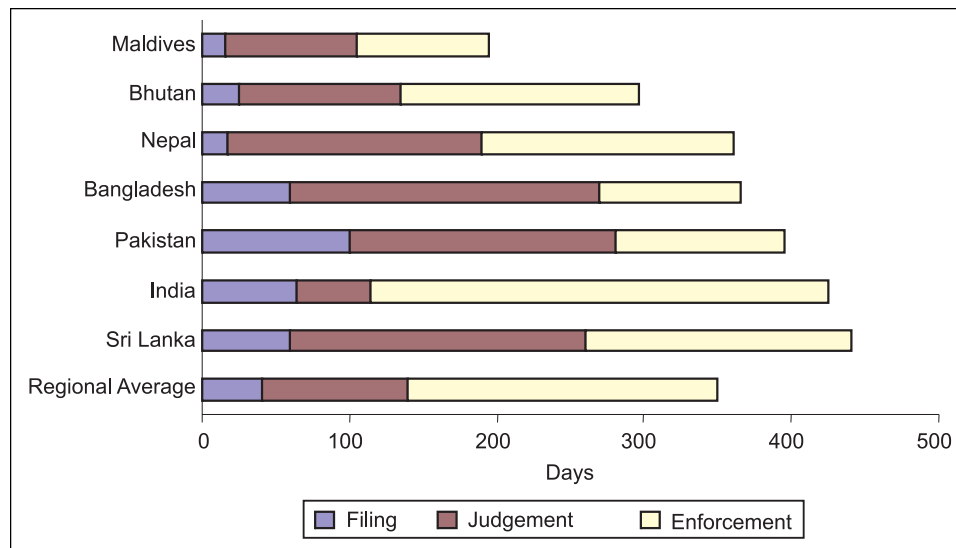


Figure 3.7: Time to Enforce a Contract

Source: *Doing Business* database.

impact on the access firms can get on credit. This is not just from formal financial institutions. Firms that report little confidence that their property rights will be upheld are significantly less likely to sell their goods on credit.

Access to Finance and Financial Services

In all of these countries the government has a dominant role in the financial sector. Access to finance repeatedly comes up as a concern for entrepreneurs. Without access to external finance, entrepreneurs can be severely constrained in their ability to take advantages of opportunities and to make investments. The rate of formal bank loans is fairly limited. Even whether firms have access to an overdraft facility that would provide more limited credit on a more flexible basis varies considerably. It is on this dimension that South Asia is considerably stronger than China. The share of firms with an overdraft facility ranges from a low of 18 per cent in China to 23 per cent in Pakistan to nearly 60 per cent in India, Bangladesh, and Sri Lanka. Another measure of the efficiency of the banking sector is the average clearance times for cheques. This ranges from 2 days in Pakistan to 3 days in Bangladesh, 4 days in China, and 11 days in India.

Distributional Impact of a Weak Investment Climate

There is also an important distributional dimension to the quality of a location's investment climate. For many dimensions, smaller firms are the ones hit hardest by a

lack of access to infrastructure and financial services. Fixed costs associated with regulations are also relatively more burdensome for small firms. There is also some evidence that smaller firms can face more harassment from officials and while micro firms may be under the radar screen, those that are somewhat larger can be candidates for bribes as they are often not fully compliant with all regulations. The following chart quantifies five dimensions, converting the monetary costs to a share of a firm's sales. The costs can be striking – over 20 per cent of output. And the burden is indeed highest for small firms (Figure 3.8).

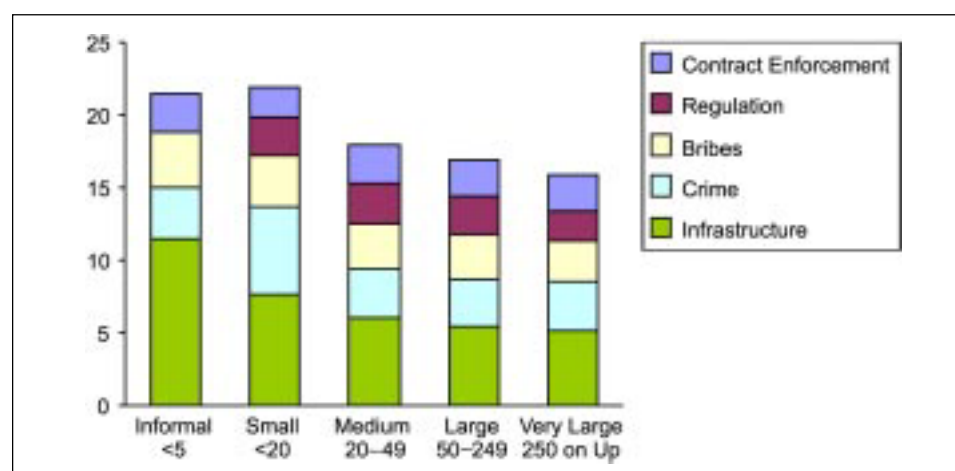


Figure 3.8: A Weak Investment Climate Disproportionately Hurts Small Firm

■ Linking Investment Climate Measures to Firm Performance

The discussion so far has primarily been using the data to benchmark different locations. This is useful for bringing attention to particular issues and showing what is possible to achieve in neighbouring countries or by those at a similar level of economic development. But benchmarking is not the whole story. What policymakers really want to know is if the constraints are really binding and what the order of magnitude of expected benefits would be if the constraint were relaxed. This section tests more rigorously if there are systematic differences in firm performance of firms across locations that can be explained by difference in investment climate indicators.

The focus here is whether better investment climate conditions are associated with higher productivity, higher investment rates, and whether gains are shared with workers in the form of higher wages.³ If the investment climate in a location is weak, then for the plants that exist in these locations TFP would be expected to be lower. Bureaucratic harassment, power outages, and limited access to government services result in less value added being produced from the same capital and labour in different locations.

The potential for higher rates of return would lead to higher rates of accumulation and to higher growth in areas with better investment climates. Assuming that factor rewards are equal to, or are monotonically increasing with, marginal factor productivity, this would mean that locations whose investment climates are better will have greater factor prices.

In estimating TFP, firms in the garment sector were selected. It is a sector covered in each of these countries and is the best example of a relatively homogeneous industry so that one can assume the production technology involved is broadly similar. A Cobb-Douglas production function is used with the assumption that factor shares are the same across all firms and locations. Testing this assumption by allowing for country interaction terms does not reject the hypothesis of a single production function being legitimate. TFP is then calculated as the residuals after controlling for labour and capital. The robustness of the results were checked using measures to control for human capital and the potential endogeneity of input selections.⁴ TFP calculated from the data is then related to differences in the investment climate across the firm locations.

In controlling for investment climate conditions a number of the variables were discussed in the preceding section. Production losses from power outages captures concerns about the access to electricity. Access to an overdraft facility is the measure of access to finance. A number of proxies of government efficiency are used. The days to get goods through customs and the time to get a telephone connection are reported here. The share of firms reporting bribes, an index of overall government efficiency, and the confidence in the courts are also used with similar findings.

There are a number of potential concerns that need to be addressed in this analysis. One is that the firm's own investment climate indicators could be endogenous to their performance. This is most likely the case for subjective opinions. However, it is not necessarily clear which way the bias would go. Firms that are performing poorly may be more likely to complain and blame external factors in the investment climate for their lack of success or successful firms may be more constrained by a weak investment climate in expanding their business. A significant benefit of using objective data avoids issues of how much a given entrepreneur is prone to complain. However, even objective measures can still be endogenous. For example, a firm's performance could affect the probability that it faces more harassment (and demands for bribes) by officials; that is, growing or successful firms may be targets as they are more likely to attract attention and because they are more likely to have the resources to make additional payments. To deal with this potential endogeneity, investment climate indicators are averaged for a particular sector in each city. The interpretation is then not the specific investment climate conditions of a firm but of the broader location in which it is operating.

Another potential source of endogeneity regards the location choice of firms; that is, that more productive firms chose to locate in the better environments. This can be

controlled by restricting the analysis to exclude firms that are mobile (that is, excluding multinationals and larger domestic firms). Migration within these countries is remarkably low, and other surveys confirm that the location choice of domestic firms is overwhelmingly determined by where the founder was born or brought up. So we define the latter group as the subsample of domestically owned small firms employing not more than 150 workers.⁵

There could also be a competing hypothesis to explain differences in performance across locations. The literature on economic geography points to the importance of the size of the local market. To explore this, the regressions include the population of the local city, the distance to the nearest port, and the distance to the nearest major overseas market. The investment climate results are indeed robust to their inclusion. This holds out the potential for sound investment climate policies to be able to offset certain disadvantages of geography.

Finally, the results are robust to including country dummies, so that identification comes only from the variation across locations within a country. Even where policies may be set nationally, they are often implemented locally. The results confirm that local governance matters.

Investment Climate and Productivity

Table 3.3 shows the results of regressing firm productivity on the objective investment climate indicators. The indicators are averaged at the city level to control for endogeneity, and errors are clustered to correct for potential correlation within cities. The signs of the coefficients are all as expected. Increasing the time it takes through customs, the longer it takes to receive a telephone connection, and the greater the losses from electricity are all associated with lower productivity. Greater access to finance, on the other hand, is positively correlated with productivity. The coefficients are significant. Adding in controls for the geographic characteristics (the size of the local market and distance to other major markets) do not remove the significance of the investment climate indicators. The results are robust even after adding country dummies so all the variation is coming from differences within a given country.

The third column looks only at the subsample of small domestic firms to assuage concerns that the results are driven by large, mobile firms choosing to locate in better investment climates. If better performing firms have a tendency to locate in more hospitable investment climates, the effect of deficiencies in investment climate that are estimated for this group of firms should be smaller than the estimates for the full sample. On the other hand, if inherently more productive firms tolerate more deficiency in investment climate, estimates of the effect of investment climate on performance would be larger for this group than the estimate for the full sample. That the coefficients are marginally larger is consistent with the latter view; that is,

Table 3.3: A Better Investment Climate is Associated with Higher Productivity

	<i>TFP</i>	<i>TFP</i>	<i>TFP</i>
Days through Customs	-0.221 (4.82)*	-0.295 (2.63)***	-0.399 (2.85)***
Losses from Power Outages	-0.083 (1.56)	-0.466 (3.73)***	-0.539 (3.86)***
Access to Finance	0.029 (0.61)	0.100 (1.68)*	0.149 (1.80)*
Days for New Telephone Connection	-0.078 (2.81)***	-0.128 (2.90)***	-0.140 (2.52)**
Population		0.066 (2.08)**	0.098 (2.22)**
Distance to Major Market		-0.176 (0.50)	-0.367 (0.74)
Distance to Port		0.010 (1.25)	0.013 (1.04)
Country Dummies	No	Yes	Yes
Sector Dummies	Yes	Yes	Yes
Constant	0.102 (0.63)	2.055 (0.74)	3.496 (0.91)
Number of Observations	1,134	1,134	657

Notes: Variables are in logarithms. Absolute value of *t* statistics in parentheses.
 * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

more mobile firms are better equipped to deal with or have private means of circumventing weak investment climate conditions.

The results are also economically significant. If investment climate conditions were to improve by one standard deviation, productivity could go up by 2 percentage points. If the conditions in India were the same as those enjoyed by their Chinese competitors, productivity could be 1 percentage point higher, much of the gap because of the differences in access to reliable electricity.

Table 3.4 extends the approach to look at the impact of investment climate variables on wages and on investment rates. The results in the first column show that firms in good investment climate locations pay higher wages. This is true even controlling for a number of additional firm characteristics that can be associated with higher wages, such as the average schooling and age (experience) of the employee and whether the firm is a multinational. This is still true including country dummies. However, including the economic geography variables in the second column does soften the results somewhat. The economic impact is also significant. A one standard deviation in the investment climate variables is associated with wages that are 25 per cent higher. If Pakistan and Bangladesh were to raise their investment climate variables to the level of China, wages could be 23 and 31 per cent higher.

Table 3.4: A Better Investment Climate is Associated with Higher Wages and Investment Rates

	<i>Wage</i>	<i>Wage</i>	<i>Wage</i>	<i>Rate of Investment</i>	<i>Rate of Investment</i>
Days through Customs	-0.192 (1.97)*	-0.125 (1.59)	-0.092 (1.00)	-0.168 (2.30)**	-0.067 (1.47)
Losses from Power Outages	-0.280 (2.89)***	-0.036 (1.63)	-0.190 (2.53)**	-0.059 (1.03)	-0.150 (2.97)***
Days for New Telephone Connection	-0.160 (2.72)***	0.130 (1.39)	-0.153 (3.82)***	-0.119 (3.76)***	-0.007 (0.19)
Access to Finance	0.106 (2.00)*	0.207 (4.60)***	0.095 (1.64)	0.206 (3.91)***	0.153 (3.71)***
Population		0.039 (1.06)			0.050 (1.87)*
Distance to Major Market		-0.249 (0.75)			0.194 (1.51)
Distance to Port		-0.007 (1.18)			0.002 (0.57)
Age of Firm	-0.052 (1.23)	-0.042 (1.01)	-0.029 (0.68)	-0.045 (1.56)	-0.019 (0.74)
Initial Size of Workforce	0.002 (0.06)	-0.020 (0.86)	-0.003 (0.12)		
Average Education of Workforce			0.002 (1.60)		
Average Age of Workforce			0.021 (1.15)		
Foreign Direct Investment			0.121 (1.97)*		
Initial Capital Stock				-0.098 (4.28)***	-0.102 (4.81)***
Country Dummies	No	Yes	Yes	No	Yes
Sector Dummies	Yes	Yes	Yes	Yes	Yes
Constant	8.208 (15.35)***	8.766 (3.01)***	7.235 (16.92)***	2.211 (5.92)***	-0.405 (0.35)
Obs	4,818	4,818	3,822	4,710	4,710
R squared	0.07	0.10	0.04	0.08	0.15

Notes: Variables are in logarithms. Robust *t* statistics in parentheses.

* significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

The results are also robust looking at the impact on the rate of investment by firms. The impact of a one standard deviation improvement in the average investment climate conditions could raise investment by a third.

Investment Climate and Exporting

Table 3.5 looks at the effect the investment climate conditions have on the probability that a firm will export at least some of its output. These have implications for the

Table 3.5: Investment Climate Conditions Affect the Probability a Firm will Export

	<i>Wage</i>	<i>Wage</i>	<i>Wage</i>	<i>Rate of Investment</i>	<i>Rate of Investment</i>
Days through Customs	-0.06 (1.62)	-0.05 (1.24)	-0.08 (1.80)*	-0.09 (2.00)**	-0.07 (1.72)*
Losses from Power Outages	-0.141 (3.02)***	-0.114 (2.82)***	-0.194 (3.97)***	-0.184 (3.83)***	-0.151 (3.85)***
Access to Finance	0.060 (2.18)**	0.066 (2.10)**	0.079 (2.77)***	0.044 (1.47)	0.048 (1.72)*
Government Ineffectiveness Index	-0.134 (1.59)				
Share Paying Bribes		-0.056 (1.71)*			
Unreliable Courts			-0.223 (1.71)*	-0.209 (1.62)	-0.176 (1.55)
Distance to Major Overseas Market	0.151 (1.87)*	0.190 (2.65)***	0.203 (2.34)**	0.136 (1.83)	0.045 (0.60)
Distance to Port	-0.010 (1.58)	-0.008 (1.33)	-0.007 (1.03)	-0.006 (0.97)	-0.002 (0.35)
Local Population	0.009 (0.53)	0.021 (1.41)	0.015 (0.94)	0.008 (0.54)	0.003 (0.20)
Workers				0.079 (9.56)***	
Country Dummies	Yes	Yes	Yes	Yes	Yes
Sector Dummies	Yes	Yes	Yes	Yes	Yes
Observations	4,386	4,461	5,370	5,288	3,953
X^2	186	292	269	465	118
Prob > X^2	0.0	0.0	0.0	0.0	0.0
Pseudo R^2	0.13	0.17	0.18	0.24	0.12

Note: Dependent variable from probit regression is the export status of the firm. Country and sector dummies are included. Errors are clustered by cities. Robust z statistics are reported.

* significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

types of constraints needed to be addressed to further the regional integration in South Asia. The geographic controls are included, as are country dummies. The results are very robust. Additional robustness checks are reported using alternative measures of the efficiency of government services. Concerns that better firms are more likely to both export and select to locate in better investment climate cities, the fifth column reports the results for the subsample of small domestically owned firms that are not likely to be mobile. Again, the results are robust. Improvements in the investment climate of one standard deviation are associated with raising the probability that a firm exports by 30 per cent.

Conclusions

A range of indicators were provided that measure the investment climate in South Asia, allowing for comparisons of countries in the region with each other and with China. Access to electricity, access to finance, and efficient government regulation in areas such as customs administration, corruption, and property rights are raised as priority areas by entrepreneurs themselves.

Linking these indicators to firm performance shows that plants that exist in better investment climate locations are more productive, producing more value with a given level of capital and labour. The benefits are enjoyed as higher profits, but are also shared with workers, with firms in better investment climate locations paying higher wages. These superior returns also serve to encourage greater capital accumulation. Given the large differences in investment climate that we find in our surveys, it is not surprising that growth rates vary so much across these locations.

Notes

1. See Acemoglu and Johnson (2005), Hall and Jones (1999), Parente and Prescott (2000), and Klenow and Rodriguez-Clare (1997).
2. See World Bank (2005a).
3. For a more rigorous discussion, please see Dollar, Hallward-Driemeier, and Mengistae (2005).
4. The technique outlined by Levinsohn and Petrin (2000) was used. Results are available upon request.
5. We repeated the analysis using a cutoff of 100 workers and even 50 workers and the results were robust to these cutoffs, too.

References

- Acemoglu, Daron and Simon Johnson, 2005, 'Unbundling Institutions', *Journal of Political Economy*, 113 (5), pp. 949–5.
- Dollar, David, Mary Hallward-Driemeier and Taye Mengistae, 2005, 'Investment Climate and Firm Performance in Developing Economies', *Economic Development and Cultural Change*, 54(1), pp. 1–31.
- Hall, John and Charles I. Jones, 1999, 'Why do Some Countries Produce so much more Output per Worker than Others?', *Quarterly Journal of Economics*, 114 (1), pp. 83–116.
- Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi, 2005, 'Governance Matters IV: Governance Estimates for 1996–2004', Policy Research Department Working Paper 3630, Washington DC: World Bank.

- Klenow, Peter and Andres Rodriguez-Clare, 1997, 'Economic Growth: A Review Essay', *Journal of Monetary Economics*, 40 (3), pp. 597–617.
- Levinsohn, James and Amil Petrin, 2000, 'Estimating Productivity Functions Using Inputs to Control for Unobservables', Report 7819, National Bureau of Economic Research, Cambridge, MA.
- Parente, Stephen and Edward Prescott, 2000, *Barriers to Riches*, Cambridge, MA: MIT Press.
- World Bank, 2004, *World Development Report 2005: A Better Investment Climate for Everyone*. New York: Oxford University Press.
- , 2005a, *Doing Business in South Asia in 2005: Removing Obstacles to Growth*, Washington DC: World Bank.
- , 2005b, *Doing Business in 2006: Creating Jobs*, Washington DC: World Bank.
- World Economic Forum, 2004, *Global Competitiveness Report*. New York: Oxford University Press.