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Globalization, Labor Market Regulation, and Firm Behavior

Moritz Meyer and Paul Vandenberg

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ABSTRACT

The paper analyzes the link between firm characteristics and labor market regulation in five Asian economies—Bangladesh, Indonesia, Pakistan, the Philippines, and Viet Nam. Labor market policies and labor standards do not only affect workers, but also influence firms' investment and employment decisions. The empirical analysis uses information from enterprise surveys. Empirical results describe systematic differences in the perceived level of labor market regulation. Controlling for a wide set of firm characteristics, the perceived level of labor market regulation is found to vary between firms that participate in global trade as against those supplying the domestic market. The in-country location of a firm is also a significant determinant. The level of labor intensity explains variation in the reported level of labor market regulation between firms. Findings support a better understanding of the types of firms that find labor market regulation to be an obstacle to their operations, and can be used to design targeted policy interventions.

Keywords: labor market institutions (regulation), trade and labor markets, developing countries

JEL classification: D22, F16, J23

I. INTRODUCTION

Governments intervene in the labor market to protect the rights and interests of workers. They do so because workers generally have weak bargaining power vis-à-vis their employers. Labor market regulations are enacted, therefore, to ensure that working conditions meet some standard of decency. Minimum wages, hiring and deployment conditions, and procedures for retrenchment are designed to have a positive impact on workers' welfare. These regulations also affect the flexibility of employers, however, and their costs in managing a workforce. The impact on employers may affect investment, production, and ultimately hiring decisions, although the effects of labor market regulation vary and remain controversial (Baccaro and Rei 2007, Feldmann 2009).

In recent decades, employers have had the added task of managing their workers in a globalized environment. Export markets can be highly seasonal—such as garment markets in Europe and North America—causing considerable fluctuation in production demand. Furthermore, the changing preferences of consumers but also the preferences of importers and companies outsourcing to contract factories can affect demand conditions. On the supply side, the efficiency of logistics and supply chains, not to mention base production costs, vary considerably across producing countries. In addition, the range of countries competing for overseas markets has grown over the past 2–3 decades. These changing demand and supply conditions require producers to be flexible which, in turn, requires adjustments in the workforce. Competitiveness in global markets requires flexibility in the domestic labor market.

Labor market regulation intermediates between these two opposing forces: (i) the desire of workers for stable and decent employment, and (ii) the pressure on employers to adjust the workforce to respond to the global market. Given the pressures of globalization, exporting firms are likely to find labor market regulation more of a constraint than domestic firms are even though exporters and non-exporters operate under the same regulatory regime. There may also be other factors that affect the view of employers toward labor regulation. Labor-intensive sectors may be more affected because labor is such a key input. As well, the capacity of firms to deal with all types of regulation may be a factor, with differences, for example, between large and small firms, young and older firms, etc.

This paper focuses on labor market institutions in five Asian countries—Bangladesh, Indonesia, Pakistan, the Philippines and Viet Nam. It analyzes firm-level data and relates senior managers' perceptions of labor market regulation to a number of firm characteristics. The empirical analysis pays special attention to differences between exporting and non-exporting firms. Other key factors analyzed are capital city bias—where regulatory enforcement may be greater—and subsector differences, notably between labor-intensive and non labor-intensive activities.

The empirical framework makes use of firm-level data from the World Bank's Enterprise Surveys. Results are generated from between firm variation and allow for a detailed understanding of which types of firms may be constrained most by labor market regulation. Firms differ with respect to observable characteristics and experience systematic differences in the perceived level of labor market regulation. We focus on heterogeneity across firms with respect to whether firms export, their industry, size and age, educational attainment of their workers, and their region. Among our key results, we find that exporting firms report a higher perceived level of labor regulation than non-exporting firms, and firms in some but not all labor-intensive industries (food, textiles, and construction, in particular) often feel more constrained by labor market regulation than firms in other sectors. As well, firms situated in the capital city

report a higher perceived level of labor regulation, which we call a *capital city bias* linked to higher levels of regulatory enforcement.

The remainder of the paper is organized as follows. The first section provides a short summary of the empirical literature on labor market regulation in developing countries. Sections II and III focus on data issues and present descriptive statistics. Section IV elaborates the methodology used to identify determinants of firms' perceived level of labor market regulation. Section V discusses empirical findings and interprets results, while the final section briefly concludes.

II. REVIEW OF EVIDENCE ON LABOR REGULATION IN DEVELOPING COUNTRIES

Since the early 2000s, considerable empirical work has been focused on labor market regulations in developing countries. This work has been made possible by the creation of new datasets, notably by the World Bank Group, on labor market indicators that mirror the indicators that have long been available to researchers on Organisation for Economic Co-operation and Development (OECD) countries. In addition, other researchers have sought to exploit differences in regulation between subnational entities, notably the work initiated and inspired by Besley and Burgess (2004) on India. We review some of the empirical findings with special attention to contributions on developing countries and those that make use of firm-level data.

Botero et al. (2004) established a framework to discuss the regulation of labor markets through employment, collective relations, and social security laws. Their seminal paper on the empirics of labor regulation employs a methodology that exploits data from 85 countries and defines the starting point for the Doing Business project and dataset. The analysis identifies determinants of the level of labor market regulation using cross-country information. Among their key findings, they report that socialist, French, and Scandinavian legal origin countries have sharply higher levels of labor regulation than common law countries. They estimate the economic consequences from labor market regulation, finding that heavier regulation of labor is associated with lower labor force participation and higher unemployment, especially among the young. One of the drawbacks behind the empirical approach is the fact that information builds on the evaluation of national legislation and does not account for enforcement, which can be weak in developing countries and varies considerably across countries.

In a more general framework, Djankov, McLiesh, and Ramalho (2006) establish a link between labor market regulation and economic growth. Using the Doing Business dataset, they compare the level of business regulation across 135 countries. Their empirical findings suggest that countries with better regulations grow faster. To illustrate the economic significance of their results, their paper suggests that countries improving from the worst quartile of business regulations to the best experience a 2.3 percentage point increase in annual growth. Nevertheless it remains an open question which business regulations should be prioritized to generate inclusive economic growth.

One of the key challenges for labor economists is to identify the impact of labor market regulation on the quantity and quality of employment. Besley and Burgess (2004) use data from India covering 1958–1992 to characterize the relationship between the industrial relations climate and the pattern of manufacturing growth. During that time, some Indian states modified the Industrial Disputes Act in a pro-worker direction. The idea behind the empirical analysis is to learn in how far this policy change had a negative impact on output, employment, investment, and productivity in registered or formal manufacturing. They conclude that contrary to the initial

intention behind changes in the employment legislation, output in unregistered or informal manufacturing increased. Accordingly, labor market regulation can end up hurting the poor. Contrary, Aghion et al. (2008) exploit differences across Indian states in terms of labor market deregulation to identify the impact on manufacturing output. Using the variation in the growth rate of industries as dependent variable, their empirical analysis highlights the positive growth impact of pro-employer labor market institutions compared to pro-worker environments. Dutta Roy (2004) also uses differences in labor market regulation across Indian states to investigate the impact of job security legislation. The identification strategy builds on the decision of the Indian government to relax provisions of the Industrial Disputes (Amendment) Acts to improve the flexibility of labor markets. He finds significant lags in employment adjustment, and the empirical findings suggest that the impact of job security regulations was minimal. Altogether, these results suggest that labor market regulation can have an impact on the level of employment, but the size is disputed. Furthermore, they support a new identification strategy that exploits variation on the firm level to understand in how far labor market regulation is a determinant for firms' decisions.

Previous papers used cross-region variation to identify the impact of labor market institutions on labor market outcomes. Alternatively, Di Tella and MacCulloch (2005) make use of surveys with business people to learn more about firm behavior. Their empirical analysis exploits data on hiring and firing restrictions for 21 OECD countries for the period 1984–1990. Results provide some evidence that increasing the flexibility of the labor market increases both the employment rate and the rate of participation in the labor force. From a theoretical perspective, these findings are consistent with the idea that inflexible labor markets produce jobless recoveries and introduce more unemployment persistence. Using a similar empirical strategy, Stel, Storey, and Thurik (2007) focus on firm behavior to identify a causal link between regulation and entrepreneurship. They confirm previous findings and conclude that labor market regulations, along with minimum capital requirements required to start a business, lower entrepreneurship rates across countries.

Much of the work relies on a national or subnational level data, instead of firm level data. As well, findings suffer from a range of assumptions and restrictions that complicate empirical identification. The measure of labor market regulation often builds on an evaluation of the national legislation and does not take into account how firms experience labor market regulation. Especially for developing countries, we can imagine that this enforcement gap complicates empirical identification. Accordingly, we contribute to this literature in two ways. First, we establish a link between labor market regulation and firm characteristics for the five countries. Second, our research exploits information collected at the firm level. To our understanding, the firm-level analysis takes into consideration a possible enforcement gap and allows for more detailed policy recommendations with respect to labor market institutions.

III. DATA

The empirical analysis employs firm-level data from Enterprise Surveys conducted by the World Bank Group. The survey seeks to benchmark the quality of the business environment and investment climate with a particular focus on developing countries. It provides data on more than 120,000 firms across 125 countries through a representative sample in each country of private sector, nonagricultural firms with five or more employees.¹ Firms with 100% state ownership are excluded. Businesses in the cities or regions of major economic activity are

¹ The firms are thus classified with ISIC codes 15-37, 45, 50-52, 55, 60-64, and 72 (ISIC Rev.3.1).

interviewed. We use cross-section data from the 2007 survey for Bangladesh and Pakistan and from the 2009 survey for Indonesia, the Philippines and Viet Nam. The number of observations (firms) used in the econometric analysis for our five countries ranges from 742 for Pakistan to 1,191 for Bangladesh.

The survey questions are answered by business owners and top managers using face-to-face interviews. To guarantee comparability between firms and across countries, a large set of objective questions are included. Furthermore, some questions assess the survey respondents' opinions on obstacles to firm activities and performance. The key idea behind the survey is to describe how firms actually operate and respond to their environment and the perceptions. Compared to the well-known Doing Business dataset, also compiled by the World Bank Group, the Enterprise Survey takes into consideration the enforcement gap. Accordingly, the data allows for further insights if firms may or may not comply with regulations and regulations may or may not be enforced. The Doing Business data is based on the assumption that firms are aware of and comply with all formal regulations. In other words, the survey measures what a standardized firm should expect if everything was done according to the official legal requirements and paying the required costs.

Descriptive statistics and estimations take into consideration the weighting strategy proposed by the World Bank. One of the key problems behind most surveys comes from the varying probabilities of selection across different strata. To arrive to some estimates that are representative on the country level, the sampling methodology (stratified random sampling with replacement) defines different strata that later allows for calculation of sampling weights for each observation. The survey weights depend on firm size, business sector, and geographic region.²

IV. DESCRIPTIVE STATISTICS

Descriptive statistics on for the two main variables of interest—labor regulation and exports—are provided in Tables 1–3. Table 1 presents a regional perspective and comparisons of our five sample countries with other Asian countries on the key issue of whether labor market regulation is a major constraint on firm behavior. Our five countries are drawn from East Asia/Pacific and South Asia. Labor is considered by firms in these two regions to be less of a constraint than for the global average of all firms. South Asia follows Latin America/Caribbean and the Middle East/North Africa as the region with the third highest score, although considerably below those two other regions. Firms in East Asia/Pacific have the second lowest average score, higher only than sub-Saharan Africa. Overall, this suggests that firms in the regions from which our sample is taken generally do not consider labor regional as a major constraint. It might be noted that sampled firms in these two regions are considerably larger on average than firms in the other regions, as denoted by the higher average number of both temporary and permanent full-time employees.

² Stratified random sample: population units are grouped within homogeneous groups and simple random samples selected within each group. Sector breakdown: manufacturing, retail, and other services. For larger economies, specific manufacturing subsectors are selected as additional strata on the basis of employment, value-added, and total number of establishment's figures. Geographic regions within a country are selected based on which cities and regions collectively contain the majority of economic activity.

Table 1: Enterprise Surveys—International Comparison of Labor Market Regulation

		Labor Market Regulation a Major Constraint	Number of Firms Offering Formal Training	Average Number of Seasonal/ Temporary Full-time Employees	Average Number of Permanent Full-time Employees
<i>Panel A: Comparison across regions</i>					
All countries		12.01	35.47	8.13	49.49
Sub-Saharan Africa		8.65	29.72	5.40	26.92
East Asia and Pacific		8.91	47.05	25.32	76.19
Eastern Europe and Central Asia		9.76	34.51	3.26	43.95
OECD		10.15	41.85	4.67	72.71
South Asia		10.75	16.97	12.23	93.02
Latin America and Caribbean		19.93	47.36	7.61	49.84
Middle East and North Africa		23.65	26.51	5.38	69.93
<i>Panel B: Comparison across countries in Asia</i>					
Azerbaijan	2009	0.57	10.54	3.89	35.86
Viet Nam	2009	0.96	43.55	35.79	74.71
Lao PDR	2009	0.99	11.13	0.28	22.62
Tajikistan	2008	1.92	21.11	5.20	57.09
Indonesia	2009	2.50	4.73	1.82	17.92
Samoa	2009	2.70	79.08	3.60	24.35
Timor-Leste	2009	2.73	49.69	17.99	17.84
Cambodia	2007	3.48	48.35	0.95	57.99
Bangladesh	2007	3.87	..	18.19	162.42
Kazakhstan	2009	4.01	40.87	1.82	55.05
Korea, Rep. of	2005	4.12	39.45	4.67	93.72
Mongolia	2009	4.13	61.22	17.47	38.15
Afghanistan	2008	4.54	14.58	17.69	20.76
Kyrgyz Republic	2009	5.14	29.67	9.87	46.41
Philippines	2009	5.14	31.11	32.66	58.31
Pakistan	2007	6.39	6.70	3.52	28.97
Georgia	2008	6.68	14.53	5.47	39.28
Armenia	2009	7.59	30.35	4.63	38.94
Micronesia, Federated States of	2009	9.06	58.3	4.48	17.84
India	2006	9.16	15.93	1.65	34.22
Nepal	2009	9.28	8.79	2.66	13.24
Tonga	2009	9.40	11.09	0.77	8.34
Uzbekistan	2008	11.76	9.63	1.65	23.6
Bhutan	2009	16.43	23.29	8.74	23.52
Vanuatu	2009	18.33	47.52	3.52	20.12
Fiji	2009	19.17	61.00	3.55	37.28
People's Republic of China	2003	20.73	84.78	106.78	358.53
Thailand	2006	20.88	75.34	88.35	217.58
Sri Lanka	2004	25.56	32.55	33.14	367.99

.. = Data not available.

Lao PDR = Lao People's Democratic Republic, OECD = Organisation for Economic Co-operation and Development.

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Table 2: Enterprise Survey—Labor Market Regulation

		Bangladesh	Indonesia	Pakistan	Philippines	Viet Nam
<i>Panel A: Share of firms perceiving labor market regulation to be an obstacle</i>						
No		72.73	92.06	86.16	84.05	90.31
Yes		27.27	7.94	13.84	15.95	9.69
Total		1,495.00	1,319	871	1,323	1,043
<i>Panel B: Detailed evaluation of the perceived level of labor market regulation</i>						
No obstacle	cat0	46.39	82.48	69.60	59.26	73.38
Minor obstacle	cat1	26.34	9.59	16.57	24.78	16.93
Moderate	cat2	23.40	5.19	7.44	10.87	8.92
Major obstacle	cat3	3.80	2.39	3.50	4.57	0.74
Very severe	cat4	0.07	0.36	2.89	0.51	0.03
Total		1,495	1,319	871	1,323	1,043

Note: Are labor market regulations no obstacle (cat0), a minor obstacle (cat1), a moderate (cat2), a major (cat3), a very severe obstacle (cat4) to the current operations of the establishment. Data on Bangladesh (2007), Indonesia (2009), Pakistan (2007), the Philippines (2009), and Viet Nam (2009). Frequencies and percentage share (using weights).

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Table 3: Enterprise Survey—Import and Export Activities.

		Bangladesh	Indonesia	Pakistan	Philippines	Viet Nam
<i>Panel A: Share of firms with foreign sales</i>						
No		75.30	96.08	86.07	87.87	82.35
Yes		24.70	3.92	13.93	12.13	17.65
Total		1,503	1,437	844	1,321	1,048
<i>Panel B: Share of foreign sales, direct and indirect exports (all firms)</i>						
foreign sales		22.10	1.74	9.08	7.46	10.40
indirect exports		4.80	0.90	2.22	2.90	2.78
direct exports		17.30	0.86	6.93	4.56	7.61
Total		1,503	1,437	844	1,321	1,048
<i>Panel C: Share of foreign inputs (all firms).</i>						
foreign inputs		31.75	1.89	6.21	7.53	38.50
Total		1,156	1,166	756	1,304	774
<i>Panel D: Share of foreign sales and inputs (by export status).</i>						
Only firms which do not report any foreign sales (no, first question).						
foreign sales		0	0	0	0	0
foreign inputs		22.95	1.33	4.76	4.83	29.86
Only firms which report foreign sales (yes, first question).						
foreign sales		89.51	45.01	65.37	61.67	59.59
foreign inputs		48.36	14.61	14.54	27.09	50.66

Note: Data on Bangladesh (2007), Indonesia (2009), Pakistan (2007), Philippines (2009) and Viet Nam (2009). Frequencies and percentage share (using weights).

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Within Asia our sample countries are not among the countries with the highest concerns about labor regulation. Indeed, Viet Nam is second lowest among 29 countries and Indonesia is fifth lowest. The other three countries are in the middle of the pack.

Table 2 breaks down the responses to the question regarding the perception of firms that labor is an obstacle. The majority of firms find that it is no obstacle or a minor one. In Bangladesh, the proportion of firms that find labor to be a moderate obstacle is large, just under a quarter of the sample. In other countries, less than 20% of firms find it to be a moderate, major or severe obstacle—in Indonesia and Viet Nam, less than 10% of firms indicated those three

categories. Thus, we are dealing with a select group of firms and seek to correlate their concerns about labor regulations with whether they export and other variables.

In using this variable, we suggest two major caveats. First, when asking respondents about their evaluation of labor market regulation, the Enterprise Survey does not provide any definition of labor market regulation. Accordingly, numbers suffer from a possible interpretation bias if firms differ in terms of their interpretation what labor market regulation is about. Second, the Likert scale for the responses is not normalized and firms can choose different categories for judging the same situation. To reduce possible problems coming from the nature of the variable, we reduce the number of categories to create a binary (dummy) variable (see below).

Table 3 provides an indication of the export and import propensities of the firms in our sample. The share of firms that export varies considerably across countries. Using data from the Enterprise Survey, we find that 25% of firms in Bangladesh export either directly or indirectly to customers outside the country. On the contrary, firms in Indonesia tend to focus on the domestic market such that only 4% engage in foreign sales. A similar picture evolves if we calculate the average share of sales going to a foreign trading partner. Overall firms in Bangladesh report that 22% of sales go to foreign partners (5% indirect exports and 17% direct exports) whereas Indonesia shows relatively low numbers. For the Philippines, only 7.5% of overall sales go abroad (3% indirect exports and 4.5% direct exports).

In the descriptive statistics presented in Table 3, panels B and C suggest that countries with a high share of foreign sales also report a higher share of inputs coming from abroad. Both Bangladesh and Viet Nam have a relatively high share of foreign sales (22% and 10%, respectively) and a high share of foreign inputs for production (32% and 39%, respectively). On the contrary, Indonesia, Pakistan, and the Philippines are less exposed to global production chains; the share of foreign sales and foreign inputs is lower. This relationship does not only hold on the country level but also on the firm level. Table 3, panel D suggests that for all countries, firms that export always report a higher share of their inputs imported from abroad compared to non-exporting firms. For example, in Viet Nam 18% of firms report either direct or indirect exports. On average, these exporting firms generate 60% of their sales in foreign countries. At the same time, exporting firms report that 51% of their inputs come from foreign countries, whereas non-exporting firms report that only 30% of their inputs come from foreign firms. This relationship is also valid for the other countries in the sample.

V. METHODOLOGY AND EXPECTED RELATIONSHIPS

The empirical framework identifies the determinants of the perceived level of labor market regulation by exploiting the heterogeneity in observable firm characteristics (Greene 2011). We estimate a probit model using the perceived level of labor market regulation as dependent variable.³ Among the independent variables, we include observable firm characteristics such as

³ Alternatively, we make use of an ordered probit model which exploits the ordinal nature of the dependent variable with different categories from 0 (no obstacle) to 4 (severe obstacle). Results from this specification confirm the findings from the standard probit model and do not add further insights to the discussion (results can be requested from the author). Altogether, there are two major reasons why we believe the standard probit model to be superior to the ordered probit model. First, measurement error due to the subjective nature of the information on labor market regulation impacts our results and would be reduced with the use of only two categories in the standard probit. Second, the interpretation of the ordered probit model is unambiguous for categories 0 and J (the high and low responses on the scale).

whether a firm exports, industry, size, age of the firm, the average years of education of its production workers, and its region.

For the probit model, we combine multiple categories of the dependent variable Z to arrive to a binary outcome variable. Z takes the value 0 if the firm reports labor market regulation to be “no obstacle” or a “minor obstacle” and the value 1 if it is perceived to be a “moderate”, “major” or “severe” obstacle. This grouping of responses reduces problems of measurement error and reflects the subjective nature of our dependent variable. The empirical model is characterized by the following equation, where Z_1^* is the dependent variable, X characterizes the set of independent variables and ε is the error term (Cameroon and Trivedi 2005). By assumption, the error term is standard normal distributed.

$$Z_1^* = X \beta_1 + \varepsilon_1 \quad \text{Equation (1)}$$

To account for heteroskedasticity in the variance covariance matrix, we estimate robust standard errors. Furthermore, the estimation procedure exploits sample weights taken from the Enterprise Survey, as noted in the previous section.

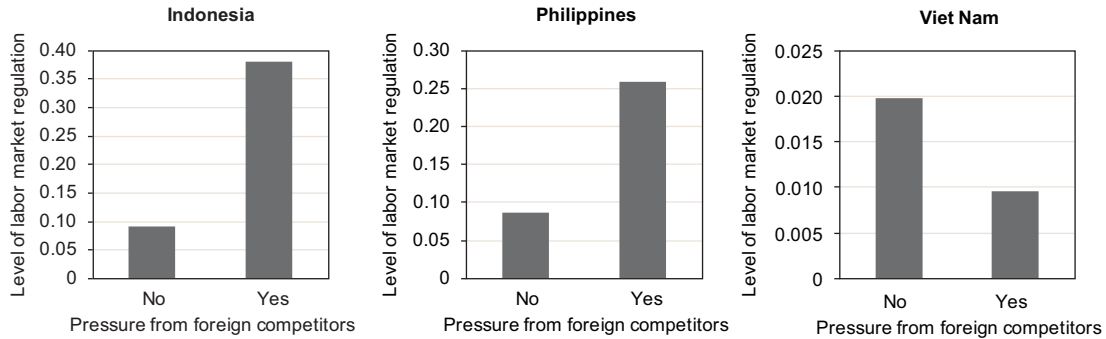
To account for differences across countries, the empirical analysis reports estimation results on the country level. This approach allows for differences in the constant but also in the estimated coefficients that characterize the impact of independent variables on the dependent variable. We propose that the perceived level of labor market regulation is not randomly distributed across firms. Instead, observable characteristics like the region or the industry of the firm can be seen as determinants of the perceived level of labor market regulation. Accordingly, the set of independent variables is supposed to capture systematic heterogeneity across firms and can be summarized as follows.

Exports. Exporting firms experience a different demand structure compared to firms that only produce for the domestic market. We can imagine that demand for exporting firms is much more volatile such that adjustments in production and the labor force become more frequent. As a consequence, labor market regulation imposes further restrictions on the firm behavior and thus has a more profound impact on exporting firms. Then exporting firms would report a higher perceived level of labor market regulation compared to non-exporting firms. This effect should survive even if we control for firm size and the sector of production. Furthermore, it may be that enforcement of labor market regulation is greater for exporting firms. Exporting firms often need to apply for export licenses that offer further possibilities for the administration to enforce the regulatory framework. Based on the assumption that enforcement is stricter and implementation of labor market regulation is a requirement for export activities, we expect a positive estimated coefficient on the dummy for exports.

To account for the observed heterogeneity with respect to export activities, the empirical model includes a dummy for exporting firms. This indicator takes the value 1 if the firm reports any exports (either direct or indirect), and 0 otherwise (alternatively we could include the share of foreign sales as an independent variable; the results are robust to this change.) We use a binary variable based on the discussion above and expect firms to change their perception of labor market regulation as soon as they engage in exporting activities. This effect is independent of how large the actual share of foreign sales is but occurs as soon as a firm begins to export.

For Indonesia and the Philippines, there is a relatively strong relationship between firms that feel pressure from foreign competition to modify product lines and those that feel that labor market regulation is a constraint (Figure 1). In Viet Nam, the opposite finding holds; that firms bothered by labor regulation are not likely to feel pressure from foreign competition. In Bangladesh and Pakistan, pressure from foreign competition on production costs tends to be felt more by firms that also feel that labor market regulation is an obstacle to their activities (Figure 2)

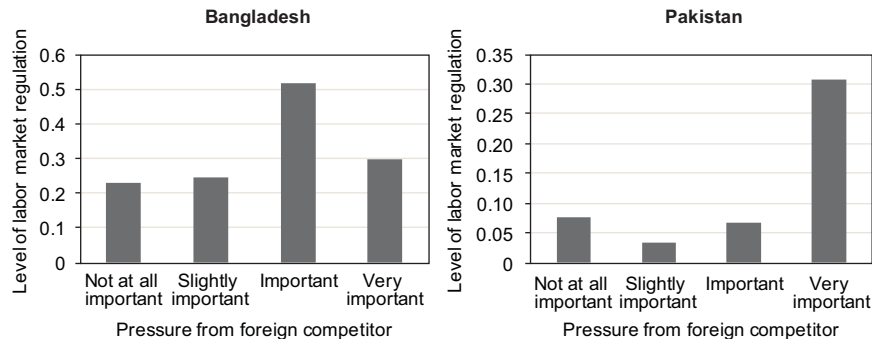
Figure 1: Foreign Competition, Product Lines and Labor Regulation



Note: Survey question: Has the firm introduced new lines or products or modified existing lines in response to pressure from foreign competitors?

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Figure 2: Production Costs, Foreign Competition, Labor Regulation



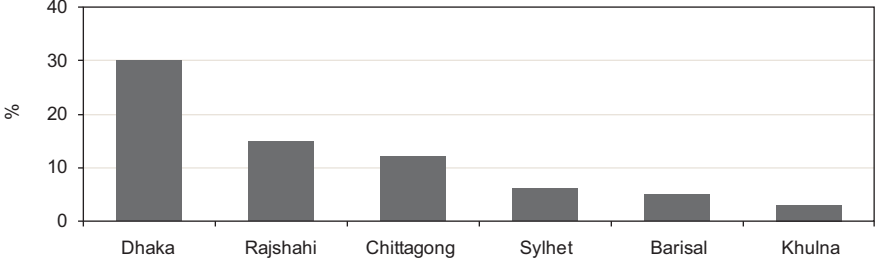
Note: Survey question: How important or unimportant is pressure from foreign competitors in productions costs of existing products?

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Region. Enforcement of national labor market regulation possibly depends on the region or state where the firm is situated. In this context, we pay special attention to a *capital city bias* and interpret results relative to the capital city of each of these countries. Due to stricter enforcement of labor market regulation in the capital city, we expect labor market regulation to be more of an obstacle in the capital city than in other locations. Using the capital city as reference group for the empirical model, estimated coefficients on other regions should be negative. The share of firms situated in the capital region is rather high which can be partly explained by the selection criteria of the Enterprise Survey. Even after applying sample weights,

we believe that the focus on nonagricultural firms with more than five employees favors businesses in the capital city. Figure 3 shows that in Bangladesh the share of firms that report labor market regulation to be an issue is much higher in Dhaka (30%) than in other regions (3%–15%).

Figure 3: Perception of Labor Market Regulation, by Region, Bangladesh

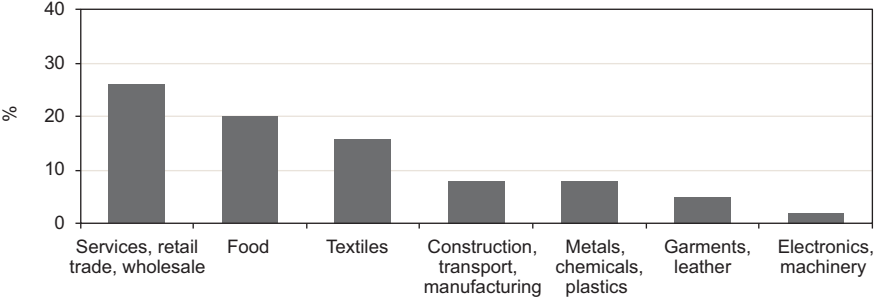


Note: Shows % of firms in each region that perceive of labor market regulation as an obstacle.

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Industry. Firms operate in different industries (sectors) and experience different needs in terms of employment adjustments. Especially firms with a high number of workers but also firms in sectors with high fluctuations over the business cycle, require a higher degree of flexibility with respect to employment decisions. Accordingly, we expect the perceived level of labor market regulation to be higher for labor-intensive industries. Using the electronics, machinery, and equipment industry as our reference group which we consider not labor intensive, we expect most of the estimated coefficients to be positive with the exception of metals, minerals, and chemicals which is also not labor intensive and therefore would have either a negative sign and be insignificant and close to zero. The sectoral composition in each country is largely different which supports the approach taken in this research paper to run different empirical models for different countries. Figure 4 illustrates how the perception of labor market regulation as an obstacle varies by sector. Using data from Pakistan, we find that most labor-intensive industries, notably construction, food, and textiles, are more affected by labor market regulation than capital-intensive industries such as chemicals and electronics and machinery. It is somewhat surprising however, that garment and leather firms do not feel labor regulation is an obstacle.

Figure 4: Perceived Labor Market Regulation by Sector, Pakistan, 2007



Note: Shows % of firms in each sector that perceive of labor market regulation as an obstacle.

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Size of firm. We imagine that small firms have fewer possibilities for internal adjustments and therefore might suffer more from regulations on hiring and firing. Using medium-size firms as the reference group, we would then expect a positive coefficient for small firms and a negative coefficient for big firms. On the contrary, labor code and other regulatory exemptions for small firms may explain why small firms do not perceive of labor regulation as an obstacle. If this were the case, then we would expect the small firm variable to reveal a negative sign.

Age of firm. We would expect that older firms have greater knowledge of the market environment and more experience in cooperating with authorities on regulation. In a more general way, network effects between firm owners and the administration could have a favorable impact on the enforcement of labor market regulation. Using the category firm age 5–9 years as reference group and taking into consideration that older firms are more experienced in the adjustment to labor market regulation, we expect the estimated coefficient to decrease in the age of the firm.

Average educational attainment of production worker in firm. We use the average educational attainment of production workers in the firm as a proxy for technology and the sophistication of production. Accordingly, estimated coefficients on variables related to educational attainment highlight differences with respect to types of workers. The reference group is educational attainment of 0–3 years. A negative estimated coefficient for higher level of educational attainment would suggest labor market regulation to be an issue especially for firms that employ low-skilled workers. Assuming that low-skilled workers have low productivity and wages, the existence of minimum wages possibly affects the perceived level of labor market regulation. On the contrary, if estimated coefficients increase in the educational attainment of a typical production worker, our results suggest that labor market regulation with respect to highly qualified workers is a problem (possibly related to difficulties in finding and hiring workers with high educational attainment). Altogether, significant coefficients support the idea of fragmented labor markets, where firms experience differences in labor market regulation due to the qualification profile of workers employed.

VI. RESULTS FROM THE EMPIRICAL MODEL

Using the perceived level of labor market regulation as the dependent variable, we identify variables that affect that perception in each of the five countries. Empirical results in Table 4 show considerable differences between countries, which confirm our strategy to run a separate estimation for each country.

Table 4: Determinants of the Perceived Level of Labor Market Regulation

	Bangladesh	Indonesia	Pakistan	Philippines	Viet Nam
Sector and Industry (category)					
Construction, Transportation, Manufacturing	0.402** (0.174)	-0.080** (0.038)	0.100 (0.091)	0.100 (0.068)	0.239** (0.114)
Services, Wholesale, Retail		-0.026 (0.018)	0.404** (0.188)	-0.106*** (0.040)	
Food	0.052 (0.122)	-0.051*** (0.016)	0.208 (0.175)	0.045 (0.065)	0.251* (0.130)
Textiles	0.032 (0.102)	-0.043*** (0.013)	0.132 (0.106)		0.127 (0.114)
Garments, Leather	-0.011 (0.115)	-0.046*** (0.017)	0.030 (0.086)	-0.017 (0.052)	0.251 (0.156)
Metals, Minerals, Chemicals	-0.037 (0.127)	-0.062** (0.030)	0.112 (0.161)	0.044 (0.057)	0.138* (0.079)
Export Activity (dummy) export	0.237*** (0.090)	-0.002 (0.022)	0.110* (0.063)	0.092* (0.050)	0.022 (0.038)
Number of Workers (category)					
5–19 workers	0.229** (0.090)	-0.087* (0.047)	-0.009 (0.028)	-0.015 (0.046)	-0.078*** (0.028)
100 and more workers	0.161 (0.103)	0.156* (0.084)	-0.042** (0.020)	0.031 (0.048)	-0.012 (0.033)
Age of Enterprise (category)					
0–4 years	0.053 (0.093)	-0.028** (0.013)	-0.053*** (0.016)	-0.044 (0.059)	-0.034 (0.031)
10–19 years	-0.148** (0.072)	-0.039* (0.021)	-0.007 (0.031)	-0.090* (0.053)	-0.064* (0.036)
20–49 years	-0.051 (0.074)	-0.036** (0.016)	-0.020 (0.032)	0.014 (0.059)	-0.040 (0.038)
Years of Education of Production Worker (category)					
4–6 years education	-0.078 (0.116)	-0.046*** (0.018)	0.051 (0.037)	-0.166*** (0.045)	0.266 (0.181)
7–9 years education	-0.064 (0.124)	-0.042* (0.023)	0.022 (0.042)	-0.106 (0.099)	-0.058 (0.052)
10–12 years education	-0.200** (0.098)	-0.022 (0.019)	-0.053*** (0.013)	-0.096 (0.126)	0.000 (0.056)
13 years education and above		-0.042*** (0.011)		-0.160*** (0.039)	-0.038 (0.051)

Continued

Table 4: Determinants of Perceived Level of Labor Market Regulation (continued)

	Bangladesh	Indonesia	Pakistan	Philippines	Viet Nam
Region of Enterprise (category)					
Chittagong	-0.128** (0.055)				
Rajshahi	0.046 (0.089)				
Khulna	-0.230*** (0.059)				
Sylhet	-0.195*** (0.071)				
Barisal	-0.170* (0.092)				
Banten		-0.026** (0.013)			
Bali		-0.036*** (0.011)			
Jawa Barat		0.000 (0.028)			
Jawa Tengah		0.045 (0.043)			
Jawa Timur		-0.017 (0.021)			
Lampung		-0.027** (0.014)			
Sulawesi Selatan		0.138 (0.105)			
Sumatera Utara		0.041 (0.062)			
Lahore			-0.010 (0.037)		
Sialkot			0.011 (0.056)		
Faisalabad			-0.061** (0.030)		
Gujranwala			0.117 (0.087)		
Wazirabad			0.140 (0.152)		

Continued

Table 4: Determinants of Perceived Level of Labor Market Regulation (continued)

	Bangladesh	Indonesia	Pakistan	Philippines	Viet Nam
Karachi			0.180** (0.079)		
Sukkur			0.644*** (0.163)		
Hyderabad			0.121 (0.165)		
Quetta			0.057 (0.078)		
Peshawar			0.063 (0.071)		
Other			0.091 (0.160)		
NCR excluding Manila				-0.069 (0.077)	
Central Luzon				-0.113** (0.044)	
Calabarzon and Mimaropa				-0.086 (0.063)	
Central Visayas Cebu				-0.142*** (0.035)	
Southern Central Costal					-0.057** (0.025)
Red River Delta					-0.006 (0.040)
Mekong River Delta					-0.051 (0.033)
South East					0.052 (0.051)
Number of observations	1,191	1,015	742	934	757
R squared pseudo	0.089	0.204	0.294	0.124	0.182
chi ₂	46.622	85.041	107.286	48.625	45.106
P value for chi ₂ stats	0.000	0.000	0.000	0.000	0.001
probability predicted	0.303	0.033	0.054	0.137	0.070
probability sample	0.273	0.079	0.138	0.160	0.097

Notes: The dependent variable, perceived level of labor market regulation, is coded 0 (no or minor problems) and 1 (moderate, severe or major problems). We report the p value (* 0.10, ** 0.05, *** 0.01) and the standard errors in brackets. Weights provided by the Enterprise Survey are included into the calculations. To account for heteroskedasticity the variance covariance matrix is estimated robust. Reference groups are introduced as follows. (1) industry: electronics, machinery, equipment; (2) firm size: 20 to 99 workers; (3) firm age: 5–9 years; (4) education: 0–3 years education. (5) region: Dhaka (BAN), DKI Jakarta (INO), Islamabad and Rawalpindi (PAK), Manila (PHI), Northern Central (VIE).

Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Test statistics for the five-country probit models indicate that the set of independent variables does capture differences in the perceived level of labor market regulation across firms. First, the pseudo R-squared supports the external validity of the model with figures ranging from 0.09 to 0.29 across the five estimations. Second, the p-value on the F-statistic highlights the strength of the set of independent variables used. Third, we compare the predicted share of firms that perceive labor market regulation to be an obstacle to the actual share as taken from the data and find similar values.

In four of the five countries, exporting firms perceive labor market regulation to be an important obstacle to their operations, relative to non-exporting firms. This is in line with our expectations as outlined in the previous section. The difference is statistically significant in three of the four cases (Bangladesh, Pakistan, and the Philippines) but not for Viet Nam. In the case of Indonesia, the correlation shows the reverse sign with exporting firms feeling that labor regulation is less of an obstacle compared with non-exporting firms. The coefficient is insignificant, however. As noted, Indonesian firms in the sample have a much lower tendency to export than firms in the other four countries. These findings can be explained, as discussed, by a stricter enforcement of labor market regulation for firms that require additional assistance from authorities (such as export allowances). Additionally, these results suggest different demand patterns regarding their labor market activities. Exporting firms face a more volatile demand for their output such that labor market regulations impose further constraints and costs on adjustments in the labor force. The effect of export activities on the perceived level of labor market regulation is independent of the firm size and the industry of business. Both variables are included into the wider set of independent variables to capture systematic differences across firms.

Estimates were also run which replaced imports with exports. The results also show that importing firms are more likely to perceive labor market regulation as a constraint. The results were significant in only two of the five countries but do nonetheless support the idea that firms interacting more with the global economy are more likely to view labor regulation as a constraint.⁴

The existence of a capital city bias also tends to be confirmed, although the results are somewhat mixed. Leaving aside the case of Pakistan, we find that all location dummies that are statistically significant have the expected sign, indicating that firms outside the capital are less likely to perceive the level of labor regulation as an obstacle compared to firms in the capital city. These significant correlations are found in: four of five non-capital locations for Bangladesh; two of four locations in the Philippines; three of eight locations in Indonesia; and, one of four locations in Viet Nam. Thus, the notion of a capital city bias is revealed most strongly in Bangladesh and least strongly in Viet Nam. As suggested in the previous section, these results suggest that, controlling for a wider set of independent variables, there may be greater enforcement of labor market regulation for the capital city relative to other city and regions.

The results for Pakistan are rather different and suggest that such a bias does not exist. Three of the 11 location dummies are significant but two of these three (Karachi and Sukkur) have a positive sign, suggesting that labor regulation is a greater obstacle outside of the capital. We can imagine that this comes from the decentralized structure of the Pakistani political and economic system. In addition to Islamabad, other cities experience some degree of

⁴ We also included both exports and imports at the same time but the results were weak, likely because firms that export also import, so the two variables were not independent of each other.

administrative responsibility that strengthens enforcement of labor market regulation even outside the capital city.

Furthermore, we find that observed heterogeneity with respect to firm size, firm age, and educational attainment (technology) contributes to an explanation for differences in the perceived level of labor market regulation across firms. Overall, coefficients show expected signs and are statistically and economically significant. Estimation results in the appendix to this research paper illustrate that many regional dummies show significant estimated coefficients. This finding supports our approach to distinguish between countries and estimate five different models (Bangladesh, Indonesia, Pakistan, the Philippines, and Viet Nam). Otherwise, the parametric specification for a pooled sample would impose a set of assumptions that seem not to hold for our research question; for instance, we would assume the impact of running a firm in a specific sector to be the same for all countries. In this context, the discussion of our findings illustrates that effects of independent variables on the perceived level of labor market regulation differ substantially across countries.

Sectors differ in the level of labor intensity that may influence the evaluation of labor market regulation as an obstacle to firm behavior. Using the electronics, machinery, and equipment subsector, as a non-labor intensive control group, we find the expected sign (positive) in three sectors considered labor intensive (construction, transport, and manufacturing; food; and textiles). This is true for four of the five countries, the exception being Indonesia. There are few significant variables however. Other labor-intensive sectors (garments and leather; and services) show positive and negative signs and no pattern emerges. It may well be that labor in the services sector is less regulated than in manufacturing. The results for garments and leather are counter intuitive.

The effect of firm size shows some interesting results. Using medium firms with 20–99 workers as reference group, we find that in four of the five countries, small firms feel that labor regulation is less of an obstacle. In two of the four cases (Indonesia and Viet Nam), the coefficients are significant. This tends to confirm our intuition that small firms may be exempted, in law and/or in fact, from the enforcement of labor regulation. In Bangladesh, small firms felt that labor regulation was more of an obstacle than did in the reference group. This result may reflect, in part, changes to the Bangladeshi labor code in the early 2000s that eliminated exemptions from most labor code provisions that had existed for the smaller firms. As for our supposition that larger firms are better able to manage labor regulations because they can adjust at the margin of a large workforce, the results provide support from Pakistan and Viet Nam although the relationship is significant only in the latter case. The signs for the other three countries show that large firms may have more difficulty than medium firms; only in Indonesia is the coefficient significant.

The firm age also provides an interesting set of results. It appears the reference age bracket of 5–9 years experiences the most problems with labor market regulation. For all but two of the five regressions, coefficients registered a negative sign suggesting that these age groups viewed labor regulation as less of a constraint than the reference group. Furthermore, in four of the five countries, the coefficients for the 10–19 age group are statistically significant, suggesting that the greatest differences exist between these two groups. More generally, the differences between the reference group and the other age groups are strongest for Indonesia where all three variables are significant. Pakistan shows that the youngest group of firms, (0–4 years) has significantly less concern about labor than the reference group.

The set of independent variables includes a categorical variable on the average education of production workers in the firm. In general, the results from the empirical model suggest that firms with a lowly qualified workforce experience greater concerns about labor market regulation. Using 0–3 years of education as reference group, estimated coefficients for higher levels of education are negative in all but three of the 18 cases and none of the three are significant. Overall, seven of the 18 coefficients are significant, three of which are for the Indonesia, and two for the Philippines. Further investigation would need to understand the underlying causes. It is possible that firms with lowly skilled workers are more likely to find that the minimum wage is binding and as a result feel that labor regulation is more of a problem. More technologically complex firms pay above the minimum anyway, and thus are not concerned with the legal wage requirement. Of the five countries, only Viet Nam does not have a significant coefficient here suggesting that the education of the workforce is not related to the perception of labor regulation as an obstacle.

VII. CONCLUSION AND POLICY IMPLICATIONS

Firms operate in an increasingly competitive and globalized environment. Those that export take on the added challenges of dealing with greater fluctuations in demand, based on changing market conditions, and differences in buyer and consumer preferences. In this context, firms need to be nimble and flexible. One area that may inhibit flexibility is labor market regulation. As such, exporting firms, given the pressures they face, may feel that labor regulation is more of a constraint than firms serving only the domestic market.

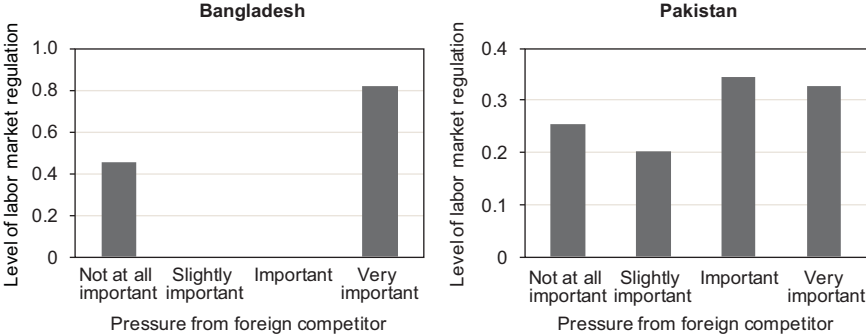
The results of our analysis support that possibility. In four of the five countries examined, exporting firms were more likely to feel that labor regulation was an important or severe constraint than did non-exporters. This finding not only concurs with our intuition on the pressures of global engagement but are the more striking in that we controlled for a range of variables including the sector (and thus labor intensity), the size of firms, the education level of production workers (as a proxy for technology), and other factors.

The analysis also provides other interesting insights into the perceived level of labor market regulation. One of the more interesting findings is that of a possible capital city/enforcement bias. Firms situated in the country's capital report on average a higher level of labor market regulation than firms from the rest of the country. This result strengthens the idea that authorities face problems to enforce labor market regulation outside the capital city. We also find that firms where the average educational attainment of production workers is low, report a higher level of labor market regulation. In line with descriptive statistics for Bangladesh, these results suggest that minimum wages may be among the binding constraints that low wage, low-tech firms face. Taken together, the results may allow for a more detailed understanding of which types of firms suffer from labor market regulation and may be used to design well-targeted policy interventions.

For future research, a detailed welfare analysis of labor market regulation could be a useful extension to our partial equilibrium analysis. As highlighted in the introduction, we focus on the impact of labor market regulation on the demand side of labor. Nevertheless, the theoretical literature illustrates that labor market regulation changes equilibrium outcomes and does not only influence firms but also workers. Thus, further research should evaluate the impact of changes in the level of labor market regulation on the supply side of labor. One possibility would be to link the previous analysis to data from labor force surveys and then focus on the impact of labor market regulation on the status and the sector of employment.

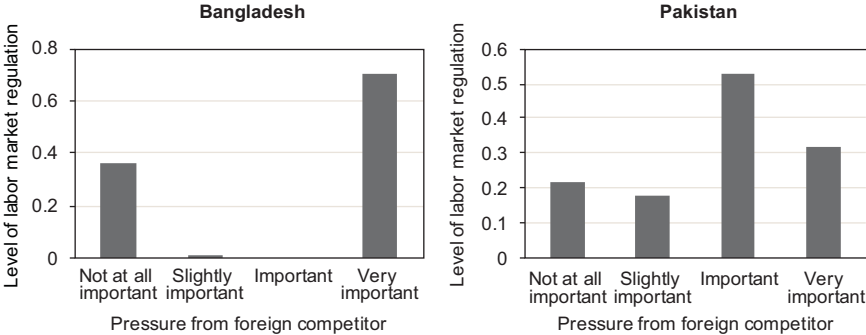
APPENDIX

Pressure from foreign competitors. For this establishment, how important is pressure from foreign competitors *over prices of existing products*? (number of observations: Bangladesh= 57, Pakistan = 79. Enterprise Survey)



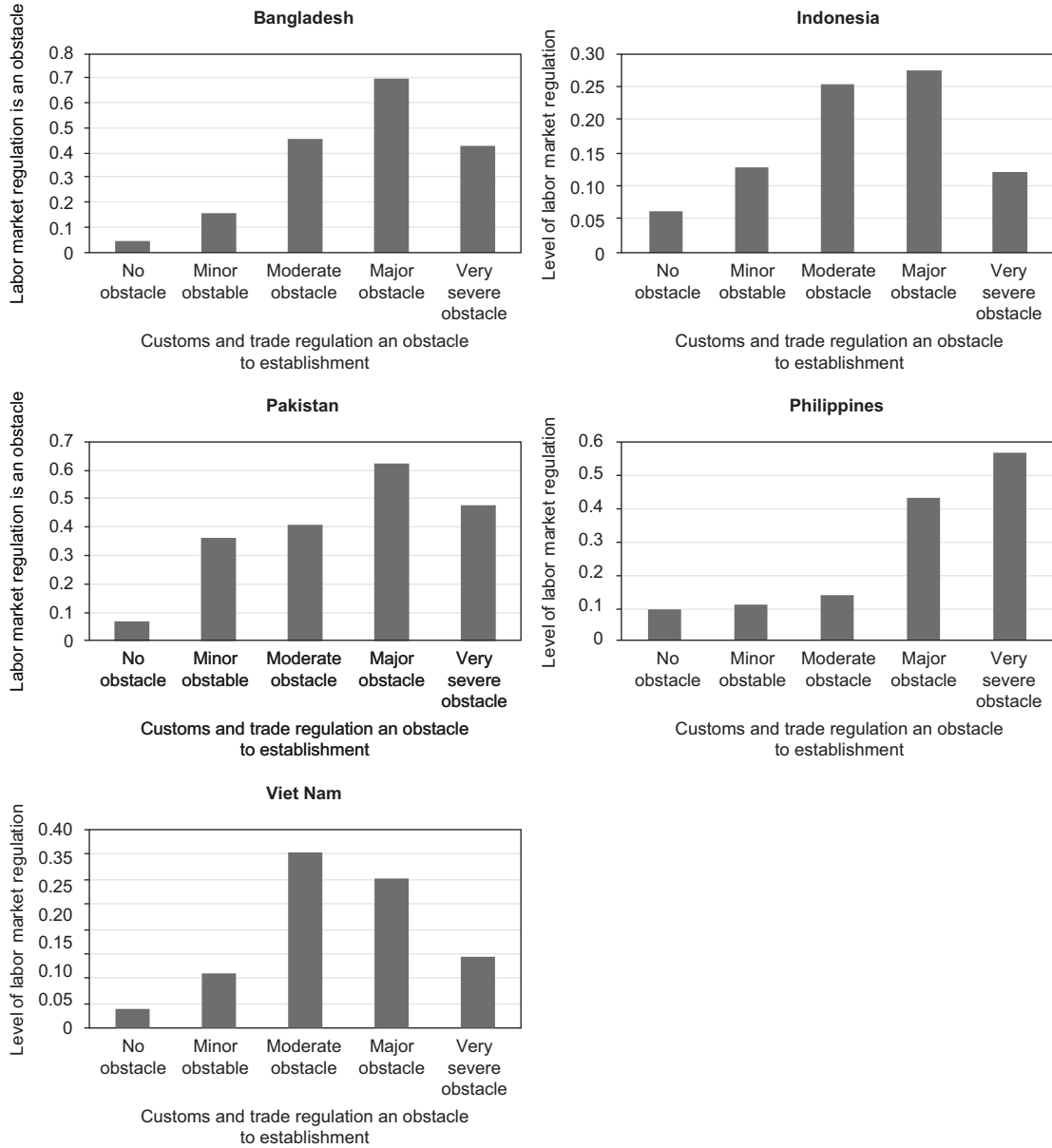
Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Pressure from foreign competitors. How important or unimportant is pressure from foreign competitors on this establishment in *presenting new lines or products*? (number of observations Bangladesh = 55, Pakistan = 80)



Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

Customs and trade regulation an obstacle to establishment. Are customs and trade regulations an obstacle to the current operations of this establishment? (number of observations: Bangladesh = 1,487; Indonesia = 1,099; Pakistan = 614; Phillipines = 1,089; and Viet Nam = 910)



Source: Authors' calculations based on data from Enterprise Surveys (World Bank and IFC, 2011).

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Globalization, Labor Market Regulation, and Firm Behavior

The paper analyzes the link between firm characteristics and labor market regulation in five Asian economies—Bangladesh, Indonesia, Pakistan, the Philippines, and Viet Nam. Labor market policies and labor standards do not only affect workers, but also influence firms' investment and employment decisions. The empirical analysis uses information from enterprise surveys.

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