

Chains of Love? Global Production and the Firm-Level Diffusion of Labor Standards

Edmund J. Malesky Duke University
Layna Mosley University of North Carolina at Chapel Hill

Abstract: *Under what conditions does the global economy serve as a means for the diffusion of labor standards and practices? We anticipate variation among internationally engaged firms in their propensity to improve labor standards. Upgrading is most likely when a firm's products exhibit significant cross-market differences in markups, making accessing high-standards overseas markets particularly profitable. Additionally, upgrading is more likely when lead firms attach a high salience to labor standards. Therefore, while participation in global production induces "trading up" behaviors among firms overall, the effect strength varies across industries. We test our expectations via a survey experiment, which queries foreign firms operating in Vietnam about their willingness to invest in labor-related upgrading. We find strong evidence for the effect of markups on upgrading choices and suggestive evidence for the saliency mechanism.*

Replication Materials: The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: <http://doi.org/10.7910/DVN/ZYRC8S>.

To what extent does participation in the global economy serve as a means for improving labor standards and working conditions? While some worry that multinational production encourages the competitive lowering of standards, others suggest that economic globalization not only may facilitate greater efficiency and economic growth, but also can create incentives for "trading up" (Vogel 1995). Firms operating in developing countries that want to export globally, especially to richer countries, may need to improve their practices to comply with destination market regulations and preferences. Governments, interested in positive trade balances, support these improvements.

Scholars have applied the "trading up" logic to labor as well as environmental standards, typically treating all internationally involved, developing country firms as similar in their motivations. Such accounts assume that the

desire to service developed country markets, coupled with regulations and preferences in those markets, is sufficient to compel upgrading (e.g., Greenhill, Mosley, and Prakash 2009; Prakash and Potoski 2006; Vogel 1995). By contrast, we expect variation among internationally engaged firms. Upgrading is most likely when a firm's products exhibit significant cross-market differences in markups—making accessing high-standards markets particularly profitable. Additionally, upgrading is more likely when lead firms attach a high salience to labor standards. Therefore, while participation in global production induces "trading up" attitudes and behaviors overall, the effect varies across industries and firms.

Internationally active firms based in developing countries are central to trade-based diffusion accounts. These firms engage in arm's-length transactional relationships with lead global firms. Lead firms may subcontract

Edmund J. Malesky is Professor, Department of Political Science, Gross Hall, 140 Science Drive, Duke University, Durham, NC 27708 (ejm5@duke.edu). Layna Mosley is Professor, Department of Political Science, Hamilton 361, CB 3265, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-3265 (mosley@unc.edu).

For comments on previous versions of this article, we thank Greg Distelhorst, Jie Gong, Helen Milner, Irfan Nooruddin, Ivan Png, Ryan Weldzius, and participants in the Politics of Multinational Firms conference (Princeton University, September 2016), the 2016 International Political Economy Society meetings, the 2017 meetings of the International Studies Association, and a joint seminar of the National University of Singapore Business School and Global Productions Networks Center (October 2017). The article also benefited substantially from the comments of three anonymous reviewers. VCCI and US-AID generously agreed to allow PCI-FDI data to be used in this manuscript. Malesky is a paid consultant to the Vietnam Chamber of Commerce and Industry for the creation of the annual US-AID-funded Provincial Competitiveness Index. Malesky and Mosley both received funding from the International Labour Organization to design and analyze the labor module of the PCI-FDI questionnaire, where the survey experiment was embedded.

American Journal of Political Science, Vol. 62, No. 3, July 2018, Pp. 712–728

©2018, Midwest Political Science Association

DOI: 10.1111/ajps.12370

with multiple producers, in varied locations, and at multiple production stages, for raw materials, intermediate inputs, or finished goods (Locke 2013). Internationally engaged developing country firms often are larger than their domestically focused counterparts (Melitz and Ottaviano 2008). Many of these firms are foreign owned, generating foreign direct investment (FDI) flows as well. In Vietnam, the setting for our study, wholly foreign-owned enterprises account for over 71% of exports, and consequently the vast majority of employment in exportable sectors (Nguyen and Ramstetter 2017). While multinational corporations (MNCs) and their directly owned affiliates employed an estimated 82 million individuals worldwide in 2016—compared with 21 million in 1990—a far greater number of individuals are employed in other firms that subcontract production for multinationals (Organisation for Economic Co-operation and Development, World Trade Organization, and World Bank Group 2014; Shepherd 2013; United Nations Conference on Trade and Development 2017).

If “trading up” alters labor conditions in low- and middle-income countries, it is via these types of developing country firms, which interact with—and are influenced by—actual and potential supply chain partners abroad.¹

Yet, international political economy scholars have paid little attention to developing country firms in low and intermediate supply chain positions (Kim et al. 2017; Osgood et al. 2016). Consistent with a “trading up” view, we expect that participation in global supply chains generally creates incentives for developing country firms to upgrade labor-related practices. Servicing foreign customers or brands typically offers greater revenue opportunities and, in many instances, requires the use of more skilled production techniques. By hiring and retaining the most skilled local workers, firms can capture the material gains that accrue from servicing new markets.

We also expect that the incentives to “trade up” vary across firms. Firms in developing countries will be most inclined to improve their standards when servicing foreign markets that offer relatively greater product markups. Higher markups serve to justify the investment in rights-related improvements. Lead firms, shareholders, activists, and consumers may further deepen firms’ incentives to upgrade. Labor-related issues are most salient to lead firms concerned about the reputational risk associated with reports of child labor, hazardous working conditions, or forced overtime (Gereffi 1994). In part, salience to firms reflects activists’ targeting of certain

firms and industries, often those producing branded or luxury products. Lead firms’ concerns also can stem directly from shareholder or consumer pressures. And in capital- and knowledge-intensive activities, better labor-related practices may correlate highly with worker productivity and output quality (Distelhorst and Locke 2017), offering sourcing agents and lead firms another reason to attend to worker rights.

We assess these expectations using firm-level data from foreign-invested, manufacturing-oriented firms operating in Vietnam. These 912 foreign-invested enterprises (FIEs) play a variety of roles in their product markets, engaging in differing transactional relationships with lead, partner, and supplier firms. We ask firms about their overall willingness, measured as a percentage of operating costs, to expend on upgrading, if such upgrading renders them eligible for contracts with overseas lead firms. We find that multinational production indeed provides incentives for improving workers’ treatment. Further, we establish that firms’ willingness to upgrade varies, both with the location of the potential partner (Europe versus India) and with the type of product. These patterns result not from the location of the destination market per se, but from the difference in markups available in European versus Indian markets, and from the salience to supply chain partners of labor practices. We find strong evidence that participation in global supply chains is most likely to motivate labor-related upgrading when higher markups are available in developed—versus developing—country markets; we find more tentative evidence of upgrading when lead firms attach high salience to labor rights.

Supply Chains and the Diffusion of Standards in the Developing World

Scholars and activists have long debated the consequences of global production for workers in developing countries. Cost and time pressures can create incentives for labor rights violations, especially for labor-intensive products with short life cycles (Locke 2013). Evidence for competition-driven lowering of standards, however, is mixed (Adolph, Quince, and Prakash 2017; Mosley 2011). Indeed, international economic ties may promote, rather than diminish, respect for labor rights. High standards allow multinational affiliates to recruit the most skilled local workers. And multinationals, interested in efficiency and standardization, often bring their (better) home country practices to foreign affiliates (Garcia-Johnson 2000).

¹We use *supply chains*, *value chains*, and *commodity chains* interchangeably. See Gereffi (2014).

Activists' campaigns may create additional incentives for multinational firms to act in "socially responsible" ways (Locke 2013). Empirically, FDI is associated with greater protection of labor rights, as well as with wage premiums (Mosley 2011; Shepherd 2013).

Moreover, production for foreign markets may facilitate the diffusion of higher standards. When some export markets have higher environmental standards, firms that want to service such markets adopt the stricter requirements of destination markets (Vogel 1995). If these markets are significantly large, firms will adjust all of their products (rather than only those destined for higher-standards markets). Vogel's "California effect" description referenced automobile manufacturers' (both those based in the United States and those based overseas) adoption of more stringent state of California fuel economy requirements.

Scholars have since pointed to other California effect processes, exploring the globalization-based diffusion of environmental outcomes, product standards, and labor rights. Prakash and Potoski (2006) suggest that developing country firms use the adoption of voluntary environmental standards to signal their practices to overseas partners. These signals are particularly valuable when domestic regulations are weak (Berliner and Prakash 2014), and when one's trade competitors also have adopted standards (Cao and Prakash 2011). Perkins and Neumayer (2012) also report a robust association between automotive industry exports to highly regulated countries and the stringency of developing country emission regulations.

Turning to worker rights, Greenhill, Mosley, and Prakash (2009) suggest that trade relationships can transfer labor standards from destination markets to producer countries. The composition of a developing country's trade (in terms of labor rights in its export markets) is a significant predictor of its labor standards. Relatedly, Adolph, Quince, and Prakash (2017) investigate whether trade with a lower-standards country (China) is associated with deteriorations in African countries' labor rights.

What is notably absent from much of the California effect work is firm-level analysis. The actions and incentives of firms are key to causal claims of diffusion. Businesses in developing countries adopt more stringent standards in order to signal quality to potential buyers and supply chain partners. And local firms and governments worry that labor rights violations will reduce foreign demand, so they adopt codes of conduct or improve legal protections (Distelhorst and Locke 2017; Locke 2013).

These firm- and industry-level mechanisms are typically assumed, however, rather than tested. Greenhill, Mosley, and Prakash's (2009) country-level analysis is agnostic regarding the specific causal process by

which California effect improvements occur (also see Adolph, Quince, and Prakash 2017). Similarly, studies of voluntary standards typically measure rates of adoption at the national or sectoral, rather than firm, level (but see Berliner and Prakash 2014). However, the incentives to upgrade should vary within countries, as a function of industry and firm characteristics.

Developing Country Firms and the Diffusion of Labor Standards

Our baseline expectation is that internationally active firms in developing countries are willing to expend significantly on labor-related upgrading. Downstream firms anticipate that purchasing from foreign suppliers lowers their overall input costs and/or improves the quality of their components (Fu, Gong, and Png 2015). Upstream firms expect that supplying globally active firms creates greater demand for their products and may allow them to capture higher markups. Supply chain participation also facilitates, under some conditions, the transfer of more advanced production techniques (Distelhorst, Hainmueller, and Locke 2016; Sutton 2013). All foreign-engaged firms therefore should be keen to gain access to overseas supply chains and export markets.

The availability of markups in overseas markets is central to our theory. Product markups represent the difference between an item's marginal cost of production and its price. With perfectly competitive markets and high price elasticity of demand, markups are small or nonexistent. Firms set prices equal to marginal cost. Empirical analyses in economics, however, find that markups frequently exist (i.e., Gullstand, Olofsdotter, and Thede 2014; Milberg and Winkler 2013). By allowing some firms to act as price setters, anticompetitive regulations (including, *inter alia*, trade barriers) and market concentration can create positive markups (Melitz and Ottaviano 2008).

Additionally, more productive firms exploit their competitive advantages to charge higher markups (de Loecker and Warzynski 2012). And consumers' desire for differentiated products ("love of variety") reduces their elasticity of demand; firms that produce a new or different variety of a good can earn higher markups (Broda and Weinstein 2006). International trade amplifies these dynamics, as firms spread their fixed production costs more widely, increasing the returns from offering a new variety. Indeed, de Loecker and Warzynski (2012) report that exporting firms charge higher markups than their domestically oriented counterparts. Further, there is evidence that markups tend to be higher in developed

versus developing markets (Gullstrand, Olofsdotter and Thede 2014; Simanovska 2015).

Hence, we expect that developing country firms will be more willing to invest in labor-related upgrading if such improvements facilitate opportunities for higher markups abroad.

Developed country governments often link labor standards with trade liberalization, creating an explicit—albeit sometimes ineffective—link between market access and worker rights (Lechner 2016). Firms, shareholders, and consumers in developed markets also may devote attention to labor rights violations in lead firms' affiliates or subcontractors (Distelhorst, Hainmueller, and Locke 2016; Gereffi 2014; Locke 2013),² asking suppliers to participate in enterprise- or industry-level codes of conduct, certification schemes, and reporting requirements (Vogel 2006).

Despite doubts regarding the efficacy of corporate social responsibility programs, especially where political institutions are weak (e.g., Berliner and Prakash 2015; Locke 2013), many developed country lead firms publicly express their preferences for higher labor standards. They devote resources to influencing the behaviors of their supply chain partners. We therefore expect developing country firms to signal their willingness to upgrade labor standards as a means of increasing their appeal as partners. Indeed, Distelhorst and Locke (2017) report that compliance with labor and environmental standards leads to a 4% average annual increase in lead firm purchases from developing country manufacturing firms. Görg and colleagues' (2017) study of 2,000 foreign firms in 19 African states similarly reveals that corporate social responsibility considerations are particularly salient for firms that export their output to developed (versus developing) nations.

H1: Internationally active firms in developing countries will be more willing to invest in labor-related improvements when offered the opportunity to export to developed, rather than developing, country markets.

Product markups may vary not only between home and foreign markets, but also between firms and industries within the same market (Milberg and Winkler 2013). In some industries, firms are able to set higher prices for the same good in some markets. In other industries, price discrimination is—given the nature of consumers' preferences—less feasible. Simanovska

(2015) reports evidence of higher markups for apparel in wealthier countries; she attributes this result partly to consumers' price sensitivity. Because higher-income consumers are less sensitive to price changes, apparel firms apply larger markups in more affluent markets. Gullstrand, Olofsdotter, and Thede (2014) offer evidence for a similar dynamic in processed foods (although not in the wholesale sector). We also find (see the Empirical Results section) evidence of variation across industries in the markup differentials available to Vietnamese firms.

Given this variation, we expect that firms will differ in the intensity of their preferences over destination markets. Firms that can capture greater markups via price discrimination will place a high premium on access to developed (rather than developing) country markets. They will be more willing to upgrade standards in order to service developed country markets, as the material benefit from doing so is significant. In other industries, firms will want access to foreign supply chains, but—given low markup differentials—will be largely indifferent across foreign markets. The horizontal dimension of Table 1 offers examples of industries with small and large markup differentials.

H2: Internationally active firms will be more willing to invest in labor-related improvements in industries characterized by high relative markups.

Even when cross-market differences in markups are similar, we expect a second industry-level factor to matter—the extent to which labor-related concerns are salient to lead firms. To what extent do lead firms worry that they will incur reputational (and therefore material) costs if labor-related problems are discovered in their supply chains? Salience often is the result of external pressures. “Naming and shaming” is intended to strengthen multinational firms' incentives to address labor standards (Bartley and Child 2014). Human rights activists typically have called attention to worker rights violations in industries, such as apparel, with labor-intensive production and the presence of branded products (Gereffi 2014).

Activists also have focused on firms that produce luxury (rather than necessity) goods, such as handmade carpets or diamonds. Firms may respond by creating or joining certification and labeling schemes, such as Rugmark; these initiatives also allow socially conscious consumers to link their purchasing decisions with labor rights outcomes (Hainmueller, Hiscox, and Sequeira 2014). Still other targets are industries (e.g., toys, soccer balls) in which the use of child labor can be linked with the consumption of finished goods by other children. Other activist campaigns have targeted commodity firms with global brands, such as oil and gas companies. These campaigns,

²Note that this mechanism relies, in part, on consumer demand for ethical consumption. See Hainmueller, Hiscox, and Sequeira (2014).

TABLE 1 Predicted Effects of Mechanisms for Labor Rights Improvements

		Difference in Mark-Ups (Developed-Developing)	
		Low	High
Salience of Labor Practices	Low	<i>Low Treatment Effect</i> (i.e., Plastics/Rubber, Commodities)	<i>Moderate Treatment Effect</i> (i.e., Fabricated Metals, Chemicals)
	High	<i>Moderate Treatment Effect</i> (i.e., Garments/Apparel)	<i>Large Treatment Effect</i> (i.e., Computers, Electronics)

if successful, generate losses in retail as well as investment markets.

Activist campaigns' raising the visibility of labor issues for consumers is only one path by which worker rights can become salient to lead firms. Another route, relevant to developing country producers of intermediate goods, is lead firms' supply chain management principles; they include not only technical efficiency, but also ethical production, in directly owned affiliates as well as in supply chain partners (Locke 2013). Such principles address shareholders' ethical production concerns; they may be more pronounced among publicly traded firms. Therefore, even if consumers do not observe the conditions under which intermediate goods are produced, lead firms may nonetheless emphasize high labor standards to suppliers. Multistakeholder initiatives such as the International Labor Organization's (ILO's) Better Work Program—focused on apparel and other light final manufacturing—also bring attention to labor conditions. A third, and related, pathway is the skill or knowledge intensity of production. When the production of a good relies on workers with advanced and specific skills, firms have a greater interest in hiring and retaining the most qualified individuals. Better working conditions enable firms to increase the retention of their most productive employees.

As the salience of labor rights increases, lead firms are more likely to condition their sourcing decisions on respect for worker rights (Distelhorst and Locke 2017). For developing country firms, higher salience means that labor-related upgrading is even more important as a mechanism to gain access to markup differentials. We therefore expect, as the vertical dimension of Table 1 indicates, that developing country enterprises will be even more inclined to invest in labor-related improvements

when supplier firms' labor practices are highly salient to lead firms:

H3: Internationally active firms will be more willing to invest in labor-related improvements in industries characterized by high salience of labor issues.

To test these hypotheses, we draw on a survey of FIEs in Vietnam. It is important to note that our theoretical claims should apply to all internationally active firms in developing countries, regardless of their ownership. Because foreign-owned firms are larger and more efficient than their domestic counterparts, we expect that they represent the leading edge of diffusion. But, were we to conduct a similar empirical study of internationally active, domestically owned firms, we would expect similar patterns.

In studying developing country firms, we draw attention to entities that thus far have received limited attention from international political economists. The dominant theories relating global production to labor outcomes are based largely on the behaviors of large lead firms from developed, Western countries. Developing nations, however, now play important roles as sources of FDI; these countries, including Brazil, China, and India, accounted for 26% of global FDI outflows in 2016, down from 39% in 2014. Firms from these countries often invest in other low- and middle-income locales, frequently in the same geographic region.

Moreover, much productive activity occurs through arm's-length supply chain relationships, rather than within the boundaries of multinational firms. For instance, Nike Inc.'s apparel, equipment, and footwear products are manufactured in 666 subcontractor factories worldwide, located in 44 countries, and employing

just over one million workers in total.³ Some of these contracting firms are themselves large and multinational. Such arrangements also are common in electronics; Taiwan-based Foxconn is the world's largest contracting manufacturer.

The prevalence of supply chain production means that understanding “California effect” upgrading requires a more deliberate consideration of non-lead firms. Economic sociologists have long considered the structure and evolution of global value chains (e.g., Gereffi 1994, 2014). More recently, Johns and Wellhausen (2016) posit that supply chain partnerships affect domestic firms' willingness to expend political capital to protect their partners' property rights and, therefore, host governments' willingness to breach contracts with foreign firms. Manger (2012) demonstrates that lead firms based in the North, which desire cheaper and regular access to inputs produced in the South, lobby their governments to conclude North–South preferential trade agreements. Similarly, Osgood (2018) finds that supply chain participation is a key determinant of U.S. firms' public positions on trade liberalization. In addition, Jensen, Quinn, and Weymouth (2015) attribute the decline of U.S. firms' antidumping claims, even in the face of currency undervaluation, to supply chain linkages.

We draw attention to the role of developing country firms in the diffusion of standards.⁴ We expect that these firms—both current and potential supply chain participants—will be more inclined to upgrade their labor-related practices when they transact with developed country-based firms. This effect will be greatest when there is a significant difference in product markups between developed and developing country markets, and when labor conditions are highly salient to lead firms.

Research Design and Estimation Strategy

To evaluate our expectations, we employ data from the 2015 Vietnam Provincial Competitiveness Index survey of FIEs (PCI-FDI). Vietnam is an appropriate place to test our theories; it is among the developing world's most important FDI destinations. In both 2014 and 2015, *FDI Intelligence*, a division of the *Financial Times*,

ranked Vietnam first among all emerging economies in its Greenfield FDI Performance Index. Vietnam's 2015 score of 6.45 means that it attracted over six times more new investment capital than its share of global output predicts. The next-highest-ranked emerging economy was Hungary (4.32); China's score was 0.41 (Barklie 2016). Importantly for our theory, the vast majority of Vietnamese FDI is in manufacturing, especially garments, electronics, and food processing; inward FDI is typically targeted at foreign export markets.

The fully anonymous PCI-FDI survey includes 1,584 foreign-invested entities, drawn from the 14 Vietnamese provinces with significant FDI activity.⁵ Vietnam's General Statistical Office lists 12,571 eligible (tax-paying) foreign firms; the PCI samples from this set, using stratification to ensure that firm age, legal type, and industry are accurately represented. The survey had a response rate of 25%, which climbs to 51% when incorrect addresses in the sampling frame are dropped. Responding firms therefore represent over 8% of the entire population of foreign-invested projects in Vietnam since 1988.⁶ Over 87% of PCI-FDI respondents indicate that they are wholly foreign owned. Section C1 in the supporting information (SI) provides details on the reported country of origin. South Korea, Taiwan, Japan, and mainland China account for 68% of the businesses surveyed. If we include investment from neighboring countries in Southeast Asia, the figure surpasses 80%.

Section B1 in the SI demonstrates that PCI-FDI respondents are concentrated in manufacturing (64%), although no particular type of manufacturing dominates. In 2015, the three biggest industries after general manufacturing were fabricated metal products (8.7%), rubber and plastics (6.4%), and apparel/garments (6.4%). Motor vehicles, chemical products, machinery, and computers and electronics follow, each with about 4% of the sample. In terms of employment, FIEs in Vietnam tend to be larger than private domestic firms, by a factor of 3. However, by international standards, these firms are rather small: The average FIE has 220 employees, and 74% of FIEs have fewer than 300 employees, for a median employment of 125. There is some large firm representation: 93 respondent firms employ more than 1,000 workers. FIEs also are relatively small in investment size, with an

⁵Methodological details and background on the survey are available at <http://www.pcivietnam.org>.

⁶The PCI research team further ensures that each year this survey is representative of the population of firms in Vietnam through random sampling with stratification. Seventy percent of respondents list themselves as the CEO, general manager, or general director; the rest include finance officers or others knowledgeable about operations.

³See <http://manufacturingmap.nikeinc.com/>.

⁴Note that studies using supplier factory audits, as in Locke (2013) and Locke, Rissing, and Pal (2013), rely on data from such firms, although lead firms (e.g., Hewlett-Packard, Nike) are the central agents.

FIGURE 1 Survey Experiment Embedded in 2015 PCI Survey

G13: Imagine the following scenario: Your business has been contacted by an international consulting company, whose primary job is to connect large multinational companies to suppliers in emerging markets. The consulting company would like to shortlist your company, along with two other companies in your region, as potential suppliers of your product to a large [European/Indian] company that sells primarily to the [European/Indian] market. To be eligible to be included on the shortlist, the consulting company requires that your firm adopt the multinational's Labor Code of Conduct for Suppliers. This Code of Conduct includes greater representation for workers, limits on overtime work, and regulations to protect the health and safety of workers. Adopting the Code of Conduct will allow you the possibility of future orders from this multinational and others like it, but it also will increase your operating costs. Please tell us the maximum amount of adjustments - in terms of their financial costs - that you would be willing to make in order to be in compliance with the code of conduct and thereby eligible for the contract. To make this easier, we have listed the costs as a share of your current operating costs:

Share of Operating Costs: (Please simply check the highest cost you would be willing to assume)

- | | | | | | |
|-----------------------|--------------|-----------------------|-----|-----------------------|------------------|
| <input type="radio"/> | Less than 1% | <input type="radio"/> | 6% | <input type="radio"/> | 12% |
| <input type="radio"/> | 1% | <input type="radio"/> | 7% | <input type="radio"/> | 13% |
| <input type="radio"/> | 2% | <input type="radio"/> | 8% | <input type="radio"/> | 14% |
| <input type="radio"/> | 3% | <input type="radio"/> | 9% | <input type="radio"/> | 15% |
| <input type="radio"/> | 4% | <input type="radio"/> | 10% | <input type="radio"/> | Greater than 15% |
| <input type="radio"/> | 5% | <input type="radio"/> | 11% | | |

average of \$2.2 million in capital. Typically, FIEs in Vietnam are export oriented (62% of manufacturers engage in some form of export, to their home or to a third country). Some FIEs list other foreign-owned companies in Vietnam as the primary purchasers of their products. These enterprises account for 71% of Vietnam's total exports. The export propensity of FIEs in the manufacturing sector is even higher, accounting for 80% of manufactured exports (Nguyen and Ramstetter 2017).

FIEs often focus on lower value-added activities such as final assembly. For instance, motorcycles and autos are produced with kits: All of the high-value inputs are imported from elsewhere, and Vietnamese workers simply assemble the vehicle (Fujita 2011; Ngo 2016). Garment production, Vietnam's leading manufacturing industry, is similar. About 70% of Vietnam's textile and apparel production uses imported textiles and other inputs, predominantly from China (International Trade Administration [ITA] 2016a). As such, respondent firms are situated in the less rewarded segments of the value chain, but they often aspire to move up the chain.

While foreign firms in Vietnam sometimes are involved in global supply chains, most of them are owned and managed independently of lead firms. Only 31% of sampled firms are part of a larger MNC. Among the 638 firms (nearly 70% of the sample) that are not part of a

broader multinational ownership structure, some (234 firms) export their main product mostly to their country of ownership, whereas others (258 firms) export to third countries. Further, the vast majority (88%) of FIEs in exporting sectors entered as 100% foreign-owned operations. Less than 6% entered as joint ventures with domestic entities. Investment tends to be greenfield (creating new entities), with only 7% entering by merging with or acquiring existing entities.

The 2015 PCI-FDI asks a series of approximately 20 labor-related questions, which take roughly 15 minutes for respondents to complete. We test our theoretical expectation using an experiment embedded in one of these items (see Figure 1). Of respondent firms, 478 FIEs were assigned to the treatment group, whereas 434 were assigned to the control.⁷ We ask respondents to imagine

⁷A total of 1,584 foreign firms responded to the PCI-FDI survey. We limit our analysis to 1,413 firms in sectors that have export potential, including agriculture, aquacultures, manufacturing, and some services. Of these firms, 577 (36%) said the question was not applicable because they were targeting the Vietnamese market. Our empirical analysis therefore focuses on the 912 firms with export-potential firms that responded to our survey experiment item (dropping four nontradeable sectors: construction, other services, finance and insurance, and real estate). When we cluster standard errors (at the province, industry, or country of origin level), our sample sometimes drops to 886 firms, because of missing data on industry.

a scenario in which an international consultant has contacted the firm, as part of its efforts to connect large multinationals with suppliers in emerging markets. The question states that to be shortlisted as a potential supplier for the multinational client, the Vietnamese firm would need to adopt the multinational client firm's Labor Code of Conduct for Suppliers. The code covers health and safety regulations, limitations on overtime hours, and greater worker representation. As such, it is typical of industry-wide, multinational firm, and supplier codes of conduct, which originated in the late 1990s and are now widespread in both developed and developing countries (Locke 2013).

We describe the code as one that will increase operating costs, but also increase the possibility of future orders. It is important to note that codes of conduct tend to increase variable costs, requiring ongoing expenditures that vary with the level of output (i.e., limits on overtime, greater worker capacity to bargain over wages, safety equipment for each worker). While some elements of codes, such as building and fire safety, represent fixed costs, which do not vary with each unit of output, codes largely imply increases in variable costs.⁸ As a result, the code's promise of access to overseas supply chains should prime respondents via the markup mechanism (higher prices per unit), rather than via a size of market effect.

We use a contingent valuation approach to parsimoniously capture firms' interest in labor upgrading (Cummings and Taylor 1999; Mitchell and Carson 1989). The specific reforms necessary to improve labor conditions may vary according to industry, production stage, manufacturing technology, and employment demographics. For firms engaged in cutting and sewing fabric, for instance, fire safety is often a major concern. For businesses making plastic products, chemical exposures are the most significant challenge. While one could ask multiple questions measuring attitudes on various labor dimensions, some items would apply to only some firms. Aggregating these items into an overall index of firms' willingness to upgrade would be problematic. The contingent valuation method allows us to measure the propensity for labor-related upgrading in a way that is comparable across FIEs. We ask respondent firms to specify the maximum costs of adjustments—ranging from 0 to 15%, as a percentage of current operating costs—they would be willing to make to comply with the code. The adjustment cost options are consistent with prevailing estimates of implementing internationally recognized labor codes of conduct.

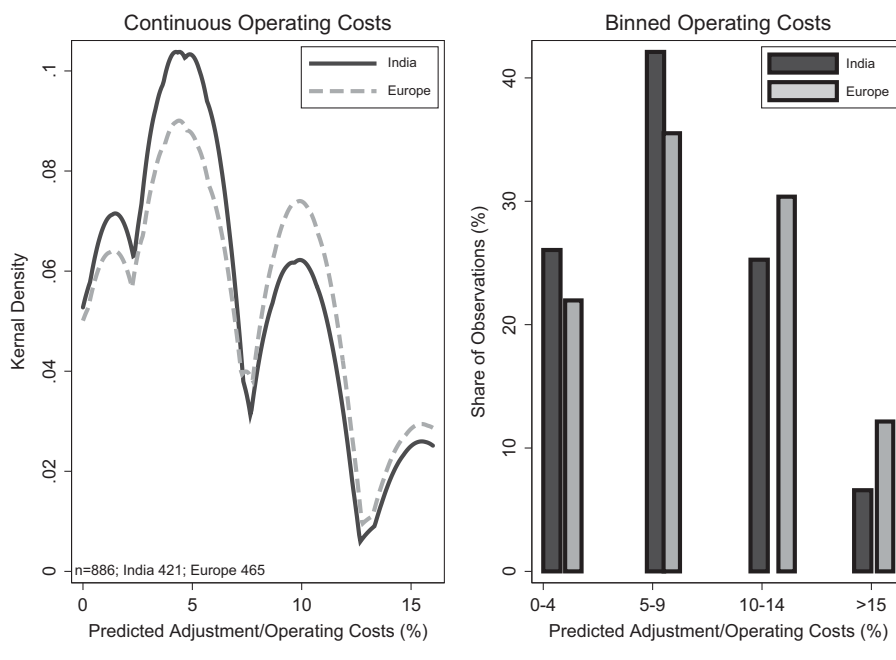
⁸We thank an anonymous reviewer for suggesting we clarify this point.

Surveyed firms report being willing to spend, on average, 6 to 7% of operating costs on labor-related improvements. This strikes us as a significant amount, indicating a willingness to expend markedly on global standards as a means of gaining access to new supply chain relationships. The experimental part of this research comes in how the multinational firm is described. In one version of the survey, it is a "large European company selling primarily to the European market" (version A). In the other version, it is a "large Indian company selling primarily to the Indian market" (version B).

A potential concern regarding our approach is social desirability bias: Aware that labor standards are often viewed positively, and given that the survey poses a hypothetical scenario, firms' stated intentions may differ from how they would behave if such an opportunity were to present itself.⁹ Because the PCI-FDI survey is sent by mail and respondents are guaranteed anonymity, we are less concerned about bias that results from attempts to impress an interviewer. Further, neither the Vietnam Chamber of Commerce and Industry (VCCI) or US-AID, the sponsors of the survey, has specific connections to either hypothetical destination country. If firms were attempting to impress, our point estimates would be biased upward. Nevertheless, what is most relevant for our study is the difference between the treatment groups; if firms receiving the Europe treatment are more inclined to attempt to impress, this is exactly the phenomenon we seek to explain.

In evaluating the results of our intervention, the first empirical concern we confront is balance. Although the survey experiment was randomized, 577 firms in exportable sectors responded with "non-applicable." A number of factors could contribute to this choice: First, despite operating in an exportable sector, the respondent firm may view its primary sales target as domestic. Second, in comparison to other questions on the survey, the prompt and contingent valuation question were more time consuming and computationally intensive; or third, labor rights and collective bargaining remain sensitive issues in Vietnam, rendering some firms averse to answering. For our purposes, the key worry is whether these motivations correlate with the treatment, leading to differential rates of item nonresponse that may bias estimated treatment effect sizes. We test for this nonresponse bias and other sources of nonbalance in covariates in Section A in the SI. We conclude that they pose no threat to inference.

⁹Carrington, Neville, and Whitwell (2014) and Hiscox et al. (2014) discuss this problem as it relates to consumers' propensity for ethical consumption.

FIGURE 2 Unadjusted Results of Survey Experiment

Equation (1) estimates the result of our experimental treatment. Our dependent variable (y) is the share of operating costs, from the contingent valuation survey item, that a firm is willing to expend on compliance with the potential buyer's code of conduct. We regress that number on our treatment variable, which we code as 1 if the buyer was from India, and 0 if the buyer was from Europe. The firms are indexed by i , and (p,s,c) denotes the province where the firm is located (p), the industry/sector the firm operates in (s), and the country of origin of the investor (c). In subsequent tests, we control for country (φ), industry/sector (π), and province (the primary sampling unit, λ) fixed effects, respectively. Thus,

$$y_{i(p,s,c)} = \beta_0 + \beta_1 \text{India}_{i(p,s,c)} + u_{i(p,s,c)} + \varphi_c + \pi_s + \lambda_p \text{ if export potential} = 1 \quad (1)$$

The primary sampling unit for the PCI-FDI survey is the province, and firms are randomly sampled from 14 provincial lists supplied by the national tax authority. Clearly, firms nested together in the same province cannot be treated as independent draws from the underlying distribution. Firms sharing a province are influenced by the same factor endowments, regulatory environment, labor pool, infrastructure, and access to resources, violating the independent and identically distributed (i.i.d.) assumption. If such firms also are from the same country, they likely interact regularly in formal business

associations or informal groupings (Wellhausen 2015). These associations also may represent industries that put forward industry-specific complaints to provincial officials. As a result, each firm from within the same province-country-sector triad provides less independent information than firms from different groups. In such a setting, classical standard errors can greatly overestimate the precision of the estimates. Thus, the appropriate methodological response is to calculate cluster robust standard errors (CRSE) at the country/industry/province level.¹⁰

Empirical Results

Figure 2 displays the main results of our experiment. The left panel plots the observed kernel density distribution of firm responses to the contingent valuation

¹⁰Such a recommendation assumes that the number of clusters trends toward infinity, there is a sufficient number of observations within each cluster, and clusters are balanced in number of observations. Otherwise, test statistics will over-reject the null hypothesis and produce overly narrow confidence intervals. Under these circumstances, econometricians recommend recalculation of the standard errors using the "wild cluster bootstrap" procedure (Cameron, Gelbach, and Miller 2008). In Section D in the SI, we implement this suggestion. Substantive results and significance tests remain very similar. We also present results using five alternative approaches to standard errors, for all estimations, in Section E in the SI. Again, results remain very similar.

TABLE 2 Effect of Export Destination on Labor Upgrading**DV1: Share of Operating Costs Firms Will Spend on Labor Adjustments (Continuous)**

	Full Sample (1)	Exporters Only (2)	(3)	(4)	(5)
India	-0.535 (0.297)	-0.567 (0.317)	-0.687* (0.326)	-0.690* (0.333)	-0.647 (0.335)
Constant	6.675** (0.202)	6.714** (0.215)	7.468** (1.927)	7.642** (2.401)	7.965** (2.360)
Country FE	No	No	Yes	Yes	Yes
Industry FE	No	No	No	Yes	Yes
Sector FE	No	No	No	No	Yes
Observations	967	886	886	886	886
R-squared	0.003	0.004	0.059	0.080	0.097
RMSE	4.564	4.598	4.569	4.572	4.564
Clusters	607	556	556	556	556

DV2: Share of Operating Costs Firms Will Spend on Labor Adjustments (Binned)

	Full Sample (1)	Exporters Only (2)	(3)	(4)	(5)
India	-0.144* (0.057)	-0.146* (0.061)	-0.157* (0.063)	-0.167** (0.064)	-0.168** (0.064)
Constant	2.260** (0.040)	2.271** (0.043)	2.639** (0.381)	2.526** (0.513)	2.542** (0.517)
Country FE	No	No	Yes	Yes	Yes
Industry FE	No	No	No	Yes	Yes
Province FE	No	No	No	No	Yes
Observations	843	769	769	769	769
R-squared	0.007	0.007	0.055	0.076	0.090
RMSE	0.884	0.892	0.890	0.893	0.894
Clusters	541	495	495	495	495

Note: The table reports ordinary least squares results with standard errors, clustered at the country/industry/province level, in parentheses. The first panel tests the continuous dependent variable, and the second panel tests the binned dependent variable displayed in Figure 2. Model 1 uses the full sample of respondents. All subsequent models test results on only firms with export potential.

**p < .01, *p < .05.

question.¹¹ Respondents presented with the India treatment were far more likely to report a willingness to expend 5% of operating costs, whereas those presented with the European variant were more likely to choose the 10% or 15% options.

The top panel of Table 2 reports the regression estimates for our experiment. Model 1 displays the results of the experimental treatment on the full sample, whereas Model 2 follows our research design by limiting analysis to only firms in exportable industries. The coefficient in Model 2 indicates that firms receiving the European

treatment opted to pay about 0.57 percentage points more in operating costs to comply with a hypothetical labor code of conduct. This treatment effect is substantively meaningful, representing about 8.9% of the average answer of 6.42. Models 3, 4, and 5 add country-of-origin-, industry-, and provincial-level fixed effects, respectively. These adjustments appear to increase the substantive effect of the experiment.

The results are consistent with Hypothesis 1: Firms offered an opportunity to sell to the European market are inclined to invest more in labor-related adjustments. The results also are consistent with recent private-public efforts to govern labor rights and working conditions; for instance, the garment brands and retailers that have signed the Bangladesh Accord on Building and

¹¹Substantive results remain the same, although hypothesis tests are underpowered if we drop all firms that export to India or Europe, and if we drop all firms that are from India or Europe (see Section F in the SI).

Fire Safety—the stronger of private-sector initiatives there—are concentrated in continental Europe and in the United Kingdom.¹²

Our results may be affected by data heaping: Many respondents appear to have selected 0, 5, and 10%, rather than intermediate values. Heaping could lead to imprecision in our estimates; it also interferes with our assumption of a normal distribution for hypothesis testing (Heitjan and Rubin 1991). To address this concern, we group the answers to the operating costs procedure into four bins suggested by the peaks in the right panel of Figure 2: (1) costs = 0%; (2) 0% < costs ≤ 5%; (3) 5% < costs ≤ 10%; (4) costs > 10%. We report the estimation using this rescaled measure in the lower panel of Table 2. In the unadjusted Model 2, the India treatment leads to a 0.15-point shift on the 4-point scale, which is statistically significant at the .05 level. Again, the effect size and precision increase with the addition of country, industry, and provincial fixed effects.

Our results strongly suggest that FIEs in Vietnam are willing to make significant monetary investments in labor-related upgrading, and that firms' willingness to do so depends in part on the location of potential lead firms. These findings are consistent with our first hypothesis. Goods sold in the European market typically offer higher relative markups, giving firms a greater material incentive to engage in behaviors that will grant them access to Europe-based supply chains.

Heterogeneous Treatment Effects by Industry

Our second and third hypotheses suggest that we also should observe differences among developing country FIEs. We expect the largest treatment effects when a firm's main product has large markup differentials (between Europe and India, Hypothesis 2) and when a firm's treatment of workers is most salient for consumers, lead firms, and supply chain partners (Hypothesis 3). Where markup differentials are small and labor conditions are less salient, by contrast, our experimental treatment should have little effect on firms' contingent valuation responses.

Calculating markups requires detailed information on sales price and operating costs at the product level (Gullstrand, Olofsdotter, and Thede 2014). Moreover, as we are interested in studying cross-country differences in markups, data must be collected in a consistent manner across export destinations. While others have calculated markups for India and for countries in Europe (De Loecker and Warzynski 2012; De Loecker et al. 2016),

few authors have attempted to calculate them using the same survey instrument. We address this challenge by using proprietary data from the Chinese customs office, containing sales price data for over one million products cleared by the customs agency in January 2010. These data are measured at the eight-digit Chinese country code level, and they include information on the destination country.¹³ We then calculate the natural log of the difference in prices of products destined for India and those for the European Union.¹⁴ We use the PCI-FDI's classification of products and services (four-digit industrial classifications—ISIC Rev 4—of the United Nations Statistical Division)¹⁵ to match products found in the PCI to markup differentials calculated from the Chinese data.¹⁶ While China is not Vietnam, they do compete in many of the same export markets, and they have comparable domestic economic structures. Moreover, the thousands of sales for each product within the Chinese data allow us to more precisely estimate markups.¹⁷ The Chinese data also reveal future opportunities for Vietnamese firms: Few surveyed Vietnamese FIEs currently export to India or Europe, but the Chinese data show the possible gains available to them from doing so.

We also expect that, in addition to the effect of markup differentials, the salience of labor issues can further motivate developing country firms to pursue labor-related upgrading. As we note above, the salience of labor issues stems from targeting decisions by rights activists, the ability for consumers and shareholders to observe labor conditions throughout the supply chain, and firms'

¹³Jarreau and Poncet (2012) have also used these data. See the China Customs website for details on this proprietary database (<http://china-trade-research.hktcd.com/business-news/article/Facts-and-Figures/China-Customs-Statistics/ff/en/1/1X000000/1X09N9NM.htm>).

¹⁴This method assumes zero difference in product quality across Chinese goods destined for different national markets. As the customs data have over one million products categorized at the nine-digit level, allowing us to examine products at an extremely fine-grained level, we believe this assumption is justified. To ease the calculation, we limited our analysis to the five most common European export destinations (Germany, France, United Kingdom, Italy, and Spain).

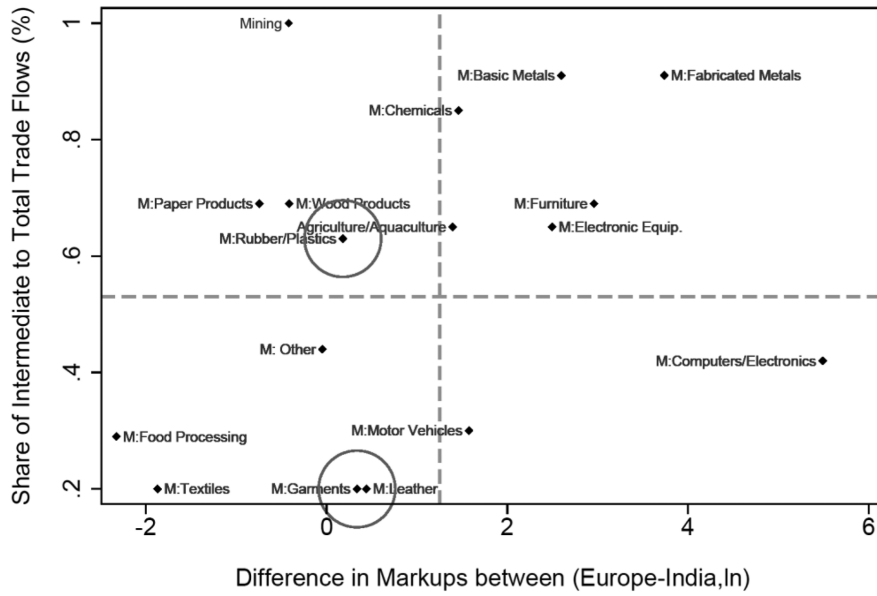
¹⁵See <http://unstats.un.org/unsd/cr/registry/isic-4.asp>.

¹⁶As none existed, we wrote our own conversion table between the Chinese HS codes and the ISIC Rev 4 codes in the PCI data set.

¹⁷Using PCI data, we also calculated markups for Vietnamese firms. Given the small number of firms exporting to Europe and India, we instead calculated differentials between all developing and developed countries. Our markup measure based on Chinese data is highly correlated both with this PCI-based measure and with independent markup calculations for India (De Loecker et al. 2016) and Europe (Christopolou and Vermeulen 2012). See Section H in the SI.

¹²See <http://bangladeshaccord.org/signatories/>

FIGURE 3 Differences in Markups and Salience by Industry



Note: Dashed lines depict mean values of the axes.

desire to hire and retain skilled labor. The multidimensional nature of salience renders it difficult to measure across sampled Vietnamese FIEs. Below, we employ a comparison of a high-salience with a low-salience Vietnamese industry, holding markup differentials constant. For the entire sample, we also collect data on the share of industry output that serves as an intermediate component in another product, by industry (Miroudot 2009, 50).¹⁸

Higher shares of output used as intermediates could correlate—albeit imperfectly, as we discuss above—with less pressure for labor-related up grading because labor practices are less visible to final consumers compared to goods sold as final products. Figure 3 plots all firms in the PCI data (aggregated to the two-digit industry level) by median markup differential and share of output used as an intermediate good. The figure is organized to align with the predictions in Table 1. According to our theory, treatment effects should be strongest in the southeast quadrant (i.e., computers), where markups and salience are highest, and weakest in the northwest quadrant (i.e., rubber/plastics), where markups and salience are low.

We present results of the interaction between our treatment variable (India) and difference in markups (Figure 4), as well as the share of the industry’s output used as an intermediate good (Figure 5), using the following estimating equation:¹⁹

$$\begin{aligned}
 y_{i(p,s,c)} = & \beta_0 + \beta_1 India_{i(p,s,c)} + \beta_2 \Delta Markup_s \\
 & + \beta_3 \Delta India^* Markup_{i(p,s,c)} \\
 & + \beta_2 Intermediate_s \\
 & + \beta_3 \Delta India^* Intermediate_{i(p,s,c)} + X \\
 & + u_{i(p,s,c)} \text{ if export potential} = 1 \quad (2)
 \end{aligned}$$

It is important to note that while the survey experiment is randomized, the selection of firms into specific industries is not. Thus, omitted confounders that might correlate with differences in markups between these two industries could bias our analysis. We control for these with a matrix of control variables (X) that are theoretically correlated with both markups and labor upgrading costs.²⁰

To guard against misinterpretation when the interaction effects do not vary at a constant rate across the full distribution of the moderating variable (e.g., markup differentials) or when there is not sufficient common support (sufficient representation of both control and treatment group) throughout the distribution of the moderator, we follow Hainmueller, Mummolo, and Xu (2017) in using a binning estimator at low, medium, and high levels of the moderator.

Figure 4 demonstrates that the experimental treatment does not have a significant effect at low or medium markup differentials. Only when logged markup differences are high (>2) do we observe a significant effect

¹⁸These data are only available at the two-digit level.

¹⁹See Sections G1 and G2 in the SI for full regression results.

²⁰We present additional heterogeneous effects in Section I in the SI.

FIGURE 4 Heterogeneous Effect of Treatment by Markups Differential

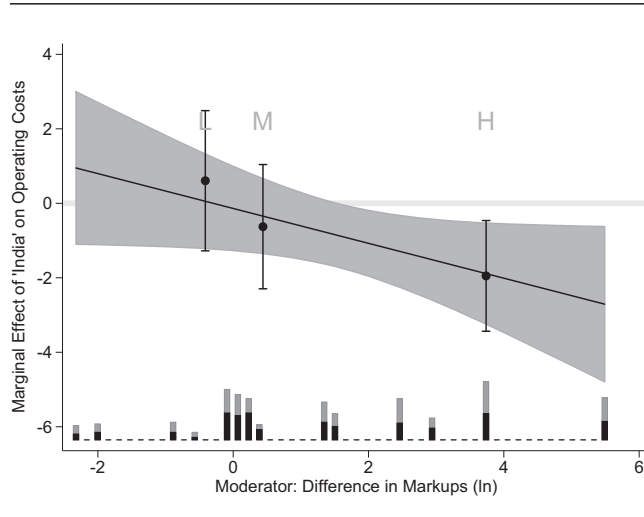
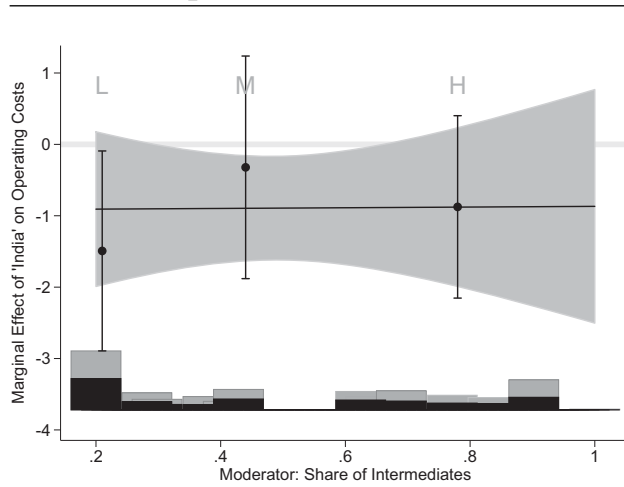


FIGURE 5 Heterogeneous Effect of Share of Output Used as Intermediate Good



Note: Figures 4 and 5 depict the marginal effects of regressing share of operating costs on the multiplicative interaction of our treatment variable (“India”) and the difference in markups (Figure 4) and the share of output used as an intermediate good in another industry (Figure 5). Regressions control for province and country-of-origin fixed effects and a battery of covariates (see Section G1 in the SI). L, M, and H represent the 95% confidence intervals for the marginal effects at the low, medium, and high terciles of differences in markups. The histograms depict the number of observations in the treatment (black) and control (grey) groups.

of the treatment. This analysis confirms our expectation that firms are most willing to invest in labor upgrading when price inelasticity in destination markets allows additional returns via price discrimination. These returns compensate for the costs of labor-related improvements. Figure 5, by contrast, illustrates that the share of output used as intermediate goods has no effect on the treatment.

Quantitative Case Study of Salience

Given that our theoretical claims regarding salience are not captured adequately by the intermediate goods share measure, we pursue a different empirical strategy for further testing of Hypothesis 3: examining firms in two industries with similar markup differentials. The PCI-FDI includes a sizable and similar number of firms in apparel/garments and in plastic and rubber products. As Figure 3 illustrates, both industries are characterized by very small differences in Europe versus India markups. The globalization of production, as well as the elimination of trade barriers (including the 2004 phaseout of the Multifibre Arrangement for garments), has dramatically lowered markups in these industries (Abraham, Konings, and Vanormelingen 2009). The thin markups are especially evident for producers at lower and intermediate rungs in the supply chain, as the wide availability of potential suppliers allows lead firms to reduce the prices paid for inputs (Milberg and Winkler 2013). Plastic bag production also is fiercely competitive; U.S. firms routinely file domestic trade complaints against exporting firms throughout Southeast Asia.²¹

Importantly, however, the salience of labor conditions varies markedly between these industries. Apparel is a final product with a country of (at least final) origin on the label. During the last two decades, as numerous activist groups have highlighted working conditions in the apparel sector, and as industrial accidents have garnered widespread media attention, it has become easier for consumers to locate information about production conditions (Bartley and Child 2014; Seidman 2007).

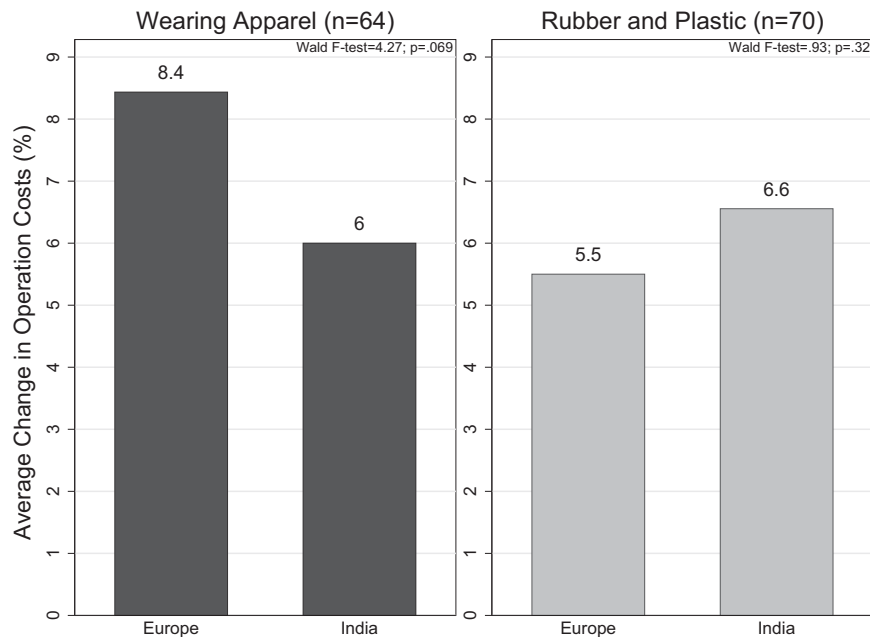
Distelhorst and Locke (2017) find that much of the material reward for code of conduct compliance is driven by apparel-sector lead firms. By contrast, consumers have very little sense of production conditions for plastic and rubber products. Some plastics outputs are used as intermediate inputs; even when they are exported as final products—for surveyed Vietnamese firms, the main product in this industry is “retail carrier bags”—consumers know very little about their production processes.

Comparing these industries therefore allows us to hold constant markups and isolate the effect of salience on firms’ reported willingness to upgrade. Figure 6 presents the change in operating costs reported by respondent firms in the two industries.²² As expected, for

²¹See, for instance, ITA (2016b).

²²Full regression results, controlling for confounders, are provided in Section J in the SI.

FIGURE 6 Comparison of Two Sectors with Similar Markup Differences



rubber and plastics, there is very little difference between firms receiving the India and European treatments. In fact, firms in the European treatment were willing to pay marginally less in this low-visibility industry (5.5% versus 6.6%).²³ By contrast, in apparel, where markup differences are similarly low but visibility is higher, firms in the European treatment group were willing to make changes worth 8.4% of operating costs, compared with 6% in the India treatment group.

Conclusion

Multinational production can serve as an instrument for improving labor standards, if developing country firms that want to service foreign markets “trade up.” Most accounts of “trading up,” however, pay little attention to firm- and industry-level variation in incentives to improve standards. We agree that the possibility of accessing global supply chains can motivate firms to improve labor standards, but we point to important variation in firms’ propensity to do so. Firms most likely to upgrade are those that anticipate selling to developed (versus developing) country markets, those whose products have significantly higher markups in some foreign destinations

²³This may be explained, in part, by efforts to ban or heavily tax plastic carrier bags in Europe. Producers, aware of this, could assume that India will provide higher relative markups in the future.

than in others, and those whose production conditions are more salient to lead firms.

We test these expectations using a contingent valuation methodology, with an experimental component, in a survey of foreign-invested firms in Vietnam. We find compelling evidence that FIEs are more likely to expend resources to improve labor conditions if the overseas opportunity is in developed (European) markets, rather than equally sizable markets in the developing world (India). We find over half a percentage point difference, on average, in the share of operating costs that such firms would devote to complying with a hypothetical international buyer’s labor-related code of conduct. When we explore firm-level differences in responses to the experimental treatment, we find strong support for the claim that the availability of higher markups influences firms’ willingness to make improvements. We also find suggestive evidence that the salience of labor conditions among lead firms enhances the propensity of developing country firms to upgrade.

Our results suggest that greater attention to supply chain participants, especially those that are not lead firms—and not even necessarily large subcontractors—is warranted. In many developing countries, such firms account for a significant proportion of employment. If “trading up”—rather than “race to the bottom”—operates, it is via these firms’ incentives and behaviors, which are influenced by consumer,

shareholder, and regulatory pressures in export destinations.

Future research could draw further distinctions among internationally active firms, as a means of identifying additional mechanisms affecting the willingness to upgrade, and in order to measure the salience of labor rights across a broader spectrum of firms. For instance, one could consider whether firms' willingness to upgrade varies among the set of developed country markets, or among large emerging market economies. Given the tendency of European consumers as well as European lead firms to pay greater attention to ethical issues in supply chains, an experimental design involving "the United States" rather than "Europe" as the location of the supply chain partner might elicit a different response. Similarly, FIEs may respond differently to the opportunity to export to China or Brazil, versus to India. Finally, scholars can explore how, and under what conditions, the dynamics identified in Vietnam travel to other developing countries.

References

- Abraham, Filip, Jozef Konings, and Stijn Vanormelingen. 2009. "The Effect of Globalization on Union Bargaining and Price-Cost Margins of Firms." *Review of World Economics* 145(1): 13–36.
- Adolph, Christopher, Vanessa Quince, and Aseem Prakash. 2017. "The Shanghai Effect: Do Exports to China Affect Labor Practices in Africa?" *World Development* 89(January): 1–18.
- Barklie, Glenn. 2016. "Vietnam Leads Emerging Market Greenfield FDI Performance Index." *fDi Magazine*. <http://www.fdiintelligence.com/Locations/Asia-Pacific/Vietnam/Vietnam-leads-emerging-market-greenfield-FDI-performance-index?ct=true>.
- Bartley, Tim, and Curtis Child. 2014. "Shaming the Corporation: The Sociological Production of Targets and the Anti-Sweatshop Movement." *American Sociology Review* 79: 653–79.
- Berliner, Daniel, and Aseem Prakash. 2014. "Public Authority and Private Rules: How Domestic Regulatory Institutions Shape the Adoption of Global Private Regimes." *International Studies Quarterly* 58: 793–803.
- Berliner, Daniel, and Aseem Prakash. 2015. "'Bluewashing' the Firm? Voluntary Regulations, Program Design and Member Compliance with the United Nations Global Compact." *Policy Studies Journal* 43(1): 115–38.
- Broda, Christian, and David E. Weinstein. 2006. "Globalization and the Gains from Variety." *Quarterly Journal of Economics* 121(2): 541–85.
- Cameron, A. Colin, Gelbach, Jonah B., and Miller, Douglas L. 2008. "Bootstrap-Based Improvements for Inference with Clustered Errors." *Review of Economics and Statistics* 90(3): 414–27.
- Cao, Xun, and Aseem Prakash. 2011. "Growing Exports by Signaling Product Quality: Trade Competition and the Cross-National Diffusion of ISO 9000 Quality Standards." *Journal of Policy Analysis and Management* 30(1): 111–35.
- Carrington, Michal J., Benjamin A. Neville, and Gregory J. Whitwell. 2014. "Lost in Translation: Exploring the Ethical Consumer Intention-Behavior Gap." *Journal of Business Research* 67: 2759–67.
- Cummings, Ronald G., and Laura O. Taylor. 1999. "Unbiased Value Estimates for Environmental Goods: A Cheap Talk Design for the Contingent Valuation Method." *American Economic Review* 89(3): 649–65.
- Christopoulou, Rebekkah, and Philip Vermeulen. 2012. "Markups in the Euro Area and the US over the Period 1981–2004: A Comparison of 50 sectors." *Empirical Economics* 42(1): 53–77.
- De Loecker, Jan, Pinelopi K. Goldberg, Amit K. Khandelwal, and Nina Pavcnik. 2016. "Prices, Markups, and Trade Reform." *Econometrica* 84(2): 445–510.
- De Loecker, Jan, and Frederic Warzynski. 2012. "Markups and Firm-Level Export Status: Dataset." *American Economic Review* 102(6): 2437–71.
- Distelhorst, Greg, Jens Hainmueller, and Richard M. Locke. 2016. "Does Lean Improve Labor Standards? Management and Compliance in the Nike Supply Chain." *Management Science* 63(3): 707–28.
- Distelhorst, Greg, and Richard M. Locke. 2017. "Does Compliance Pay? Firm-Level Trade and Social Institutions." *American Journal of Political Science*. Forthcoming.
- Fu, Qiang, Jie Gong, and Ivan P. L. Png. 2015. "Law, Social Responsibility, and Outsourcing." <https://ssrn.com/abstract=2526666> or <http://doi.org/10.2139/ssrn.2526666>.
- Fujita, Mai. 2011. "Value Chain Dynamics and Local Suppliers' Capability Building: An Analysis of the Vietnamese Motorcycle Industry." In *The Dynamics of Local Learning in Global Value Chains*, ed. Momoko Kawakami, and Timothy J. Sturgeon. London: Palgrave-Macmillan, 68–99.
- Gereffi, Gary. 1994. "The Organization of Buyer-Driven Commodity Chains: How U.S. Retailers Shape Overseas Production Networks." In *Commodity Chains and Global Capitalism*, ed. Gary Gereffi and Miguel Korzeniewicz. Westport, CT: Praeger, 95–122.
- Garcia-Johnson, R. 2000. *Exporting Environmentalism: US Multinational Chemical Corporations in Mexico and Brazil*. Cambridge: MIT University Press.
- Gereffi, Gary. 2014. "Global Value Chains in a Post-Washington Consensus World." *Review of International Political Economy* 21(1): 9–37.
- Görg, Holger, Aoife Hanley, Stefan Hoffmann, and Adnan Seric. 2017. "When Do Multinational Companies Consider Corporate Social Responsibility? A Multi-Country Study in Sub-Saharan Africa." *Business and Society Review* 122(2): 191–220.
- Greenhill, Brian, Layna Mosley, and Aseem Prakash. 2009. "Trade-Based Diffusion of Labor Rights: A Panel Study, 1986–2002." *American Political Science Review* 103(4): 669–89.
- Gullstrand, Joakim, Karin Olofsdotter, and Susanna Thede. 2014. "Markups and Export Pricing Strategies." *Review of World Economics* 150(2): 221–39.

- Hainmueller, Jens, Michael J. Hiscox, and Sandra Sequeira. 2014. "Consumer Demand for the Fair Trade Label: Evidence from a Multi-Store Field Experiment." *Review of Economics and Statistics* 97(2):242–56.
- Hainmueller, Jen, Jonathan Mummolo, and Yiqing Xu. 2017. "How Much Should We Trust Estimates from Multiplicative Interaction Models? *Simple Tools to Improve Empirical Practice*." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2739221.
- Heitjan, Daniel F., and Donald B. Rubin. 1991. "Ignorability and Coarse Data." *Annals of Statistics* 19(4): 2244–53.
- International Trade Administration. 2016a. "2016 Top Markets Report Technical Textiles Country Case Study: Vietnam." http://trade.gov/topmarkets/pdf/Textiles_Vietnam.pdf
- International Trade Administration. 2016b. "Fact Sheet: Commerce Initiates Antidumping Duty Investigations on Imports of Polyethylene Retail Carrier Bags from the Socialist Republic of Vietnam, Indonesia, and Taiwan." <http://enforcement.trade.gov/download/factsheets/factsheet-prcb-ad-init-042109.pdf>
- Jarreau, Joachim, and Sandra Poncet. 2012. "Export Sophistication and Economic Growth: Evidence from China." *Journal of Development Economics* 97(2): 281–92.
- Jensen, J. Bradford, Dennis P. Quinn, and Stephen Weymouth. 2015. "The Influence of Firm Global Supply Chains and Foreign Currency Undervaluations on U.S. Trade Disputes." *International Organization* 69(4): 913–47.
- Johns, Leslie, and Rachel L. Wellhausen. 2016. "Under One Roof: Supply Chains and the Protection of Foreign Investment." *American Political Science Review* 110(1): 31–51.
- Kim, In Song, Helen V. Milner, Thomas Bernauer, Gabriele Spilker, Iain Osgood, and Dustin Tingley. 2017. "Firms' Preferences over Multidimensional Trade Policies: Global Production Chains, Investment Protection and Dispute Settlement Mechanisms." <http://web.mit.edu/insong/www/pdf/conjoint.pdf>.
- Lechner, Lisa. 2016. "The Domestic Battle over the Design of Non-Trade Issues in Preferential Trade Agreements." *Review of International Political Economy* 23(5): 840–71.
- Locke, Richard M. 2013. *The Promise and Limits of Private Power: Promoting Labor Standards in a Global Economy*. New York: Cambridge University Press.
- Locke, Richard M., Ben A. Rissing, and Timea Pal. 2013. "Complements or Substitutes? Private Codes, State Regulation and the Enforcement of Labour Standards in Global Supply Chains." *British Journal of Industrial Relations* 51(3): 519–52.
- Manger, Mark S. 2012. "Vertical Trade Specialization and the Formation of North-South PTAs." *World Politics* 64(4): 622–58.
- Melitz, Mark, and Gianmarco I. P. Ottaviano. 2008. "Market Size, Trade, and Productivity." *Review of Economic Studies* 75(1): 295–316.
- Milberg, William, and Deborah Winkler. 2013. *Outsourcing Economics: Global Value Chains in Capitalist Development*. Cambridge: Cambridge University Press.
- Miroudot, Sébastien, Rainer Lanz, and Alexandros Ragoussis. 2009. "Trade in Intermediate Goods and Services." OECD Trade Policy Working Paper No. 93, Paris.
- Mitchell, Robert Cameron, and Richard T. Carson. 1989. *Using Surveys to Value Public Goods: The Contingent Valuation Method*. Washington, DC: Resources for the Future.
- Mosley, Layna. 2011. *Labor Rights and Multinational Production*. New York: Cambridge University Press.
- Ngo, Christine N. 2016. "Local Value Chain Development in Vietnam: Motorcycles, Technical Learning and Rents Management." *Journal of Contemporary Asia* 46(4): 1–26.
- Nguyen, Kien Trung, and Eric D. Ramstetter. 2017. "Foreign Multinationals and Vietnamese Firm Exports." Preliminary draft prepared for the Asia-Pacific Trade Seminars 13th Annual Meeting, Hanoi. <http://afts2017.ftu.edu.vn/Paper20170606/Nguyen,%20Kien%20Trung.pdf>
- Organisation for Economic Co-operation and Development, World Trade Organization, and World Bank Group. 2014. *Global Value Chains: Challenges, Opportunities and Implications for Policy*. Report prepared for submission to the G20 Trade Ministers Meeting, Sydney, Australia.
- Osgood, Iain. 2018. "Globalizing the Supply Chain: Firm and Industrial Support for U.S. Trade Agreements." *International Organization*, 72(2): 455–84.
- Osgood, Iain, Dustin Tingley, Thomas Bernauer, In Song Kim, Helen V. Milner, and Gabriele Spilker. 2016. "The Charmed Life of Superstar Exporters: Survey Evidence on Firms and Trade Policy." *Journal of Politics* 79(1): 133–52.
- Perkins, Richard, and Eric Neumayer. 2012. "Does the 'California Effect' Operate across Borders? Trading-Up and Investing-Up in Automobile Emissions Standards." *Journal of European Public Policy* 19(2): 217–37.
- Prakash, Aseem, and Matthew Potoski. 2006. "Racing to the Bottom? Trade, Environmental Governance, and ISO 14001." *American Journal of Political Science* 50(2): 350–64.
- Seidman, Gay. 2007. *Beyond the Boycott: Labor Rights, Human Rights and Transnational Activism*. New York: Russell Sage Foundation.
- Shepherd, Ben. 2013. "Global Value Chains and Developing Country Employment: A Literature Review." OECD Trade Policy Papers, No. 156.
- Simonovska, Ina. 2015. "Income Differences and Prices of Tradables: Insights from an Online Retailer." *Review of Economic Studies* 82(4): 1612–56.
- Sutton, John. 2013. *Competing in Capabilities: The Globalization Process*. Oxford: Oxford University Press.
- United Nations Conference on Trade and Development. 2017. *World Investment Report: Investment and the Digital Economy*. Geneva: UNCTAD.
- Vogel, David. 1995. *Trading Up: Consumer and Environmental Regulation in a Global Economy*. Cambridge, MA: Harvard University Press.
- Vogel, David. 2006. *The Market for Virtue: The Potential and Limits of Corporate Social Responsibility*. Washington, DC: Brookings Institution Press.
- Wellhausen, Rachel. 2015. *The Shield of Nationality: When Governments Break Contracts with Foreign Firms*. New York: Cambridge University Press.

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

A: Checking for Non-Response Bias and Balance of Confounders

B: Disaggregation by Industry

C: Disaggregation by Country of Origin

D: Main Experimental Results with Wild Bootstrap Standard Error Correction

E: Replication of Main Results with Full Sample and Alternative Approaches to Standard Errors

F: Replication of Main Results Dropping All Firms from India or Europe & Doing Business in India or Europe

G1: Full Interaction Results and Sensitivity Tests (Continuous Dependent Variable)

G2: Full Interaction Results and Sensitivity Tests (Binned Dependent Variable)

H: Correlation between Different Measures of Markups

I: Additional Sub-Group Effects