

Public Disclosure, Reputation Sensitivity, and Labor Law Compliance: Evidence from Better Factories Cambodia

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Abstract

Public disclosure of labor conditions has been suggested as one way to encourage compliance with labor law and improvements in working conditions. Analyzing labor law compliance data in the apparel industry from Better Factories Cambodia, this paper finds that after the elimination of public disclosure of factory-level noncompliance the rate of increase in compliance slowed, but did not return to the baseline, even in the absence of a reputation sensitive buyer.

“Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman.” (*Louis Brandeis*, December 20, 1913, *Harper’s Weekly*).

1. Introduction

Harsh conditions of work in apparel factories have been the subject of social activism for over a century and, more recently, have been at the center of a large and growing debate about globalization and labor standards (Elliott and Freeman 2003). The International Labour Organisation’s (ILO) Better Factories Cambodia program (BFC) is increasingly recognized as an important mechanism that brings together multiple stakeholders to improve working conditions (Adler and Woolcock 2010; Beresford 2009; Berik and van der Meulen Rodgers 2010; Miller et al. 2009; Oka 2010a,b; Polaski 2006).

One of the key components of the program is transparency. When Louis Brandeis spoke the above famous words he was, of course, concerned with the banking business. Yet, the role of transparency relating to conditions of work may be equally important in advancing the wellbeing of workers in global supply chains. Polaski (2006) specifically identifies transparency as one of the key program design elements in early improvements in Cambodian working conditions.

Our contribution is to provide an empirical analysis of the impact of transparency on the adoption of human resource management innovations by focusing on design changes within the BFC program. In the context of the apparel industry in Cambodia, prior to 2006, a focus on industry-wide labor law compliance created the possibility of

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free-riding, with non-compliant factories costlessly benefiting from the general positive reputation of the Cambodian apparel industry created by compliant factories. One of the strategies employed by BFC to control free-riding was to publicly disclose non-compliant factories and their points of noncompliance. Such disclosure occurred in the periodic Synthesis Reports issued and publicly disclosed by BFC (Polaski, 2004, 2006). In November 2006, BFC stopped publicly identifying individual factories and their points of noncompliance. The elimination of public disclosure offers a unique policy experiment in which to examine the role of publicity on firm behavior.

We use a new and highly detailed dataset from Cambodia to assess the forces driving improved working conditions that arise owing to compliance with labor law. These data were collected as a part of the BFC program carried out by the ILO, and allow us to observe labor conditions during 1154 factory inspections along 405 dimensions of labor standards, with five survey rounds spanning six years.

Our results suggest that the threat of public disclosure of noncompliance induces compliance even in those factories lacking a reputation sensitive buyer. In the post-public disclosure period, all groups of factories still maintain a significant record of compliance, but the propensity for improvement fell. The compliance choices before and after the policy change are consistent with the hypotheses that (1) the presence of compliance-linked quota rents and the threat of public disclosure of individual points of noncompliance helped all Cambodian factories coordinate on a high compliance equilibrium, (2) enforcing compliance induced factories to experiment with humane labor management innovations, (3) some labor management innovations were found to increase productivity, and (4) some labor management innovations were found to improve product quality.

2. Data

BFC is a program established by the ILO in 2001. It is a unique program that combines monitoring, remediation, and training designed to improve working conditions in exporting apparel factories. The program works with the government and international buyers to ensure a rigorous, transparent, and continuous cycle of improvement.¹

Monitors observe working conditions in all exporting garment factories during unannounced visits. Cambodian monitors enter factories to assess a factory's compliance on approximately 405 working conditions and wage requirements relative to national law and international standards. To avoid monitor bias, each monitoring team contains at least two people, and the same team rarely assesses the same factory twice. Prior to November 2006, after the factory's second visit, BFC would publish the firm's name and its progress on improving working conditions in an annual synthesis report that is shared with the factories' buyers.

The Cambodian government mandated universal participation for exporting factories. The original wave of visits in 2001–2002 reached 119 factories. At that time, factories were visited with the intention of identifying significant violations and then revisited later with the intent of identifying progress in those areas. As a result, the records for those firms are not as complete as factories visited in the second wave. The second wave of documented visits began with the launch of the improved Information Management System (IMS) survey in December 2005. Since then, monitors have visited each factory approximately every eight months.

The data also include information about the specific buyers for each factory. In some cases, factories sell to more than one buyer. For the purposes of this study, we

focus on the relationship with the primary buyer for each factory. We classify buyers as “reputation sensitive” if they published Corporate Social Responsibility (CSR) reports or websites. Not all buyers are participants of the BFC program; non-participant buyers were classified as non-reputation sensitive buyers.

3. Summary Statistics

Table 1 summarizes the distribution of factories over time and visit. The two “waves” are evident. Table 1 also reveals significant attrition. This attrition is particularly distinctive for the 119 first-wave factories, for which 82 (69%) have their second visit in either 2005 or 2006. The remaining 37 have no recorded second visit. Since, by law, all exporting factories are required to be visited, the lack of a second visit is taken to imply that the factories are no longer operating. While there are a total of 363 factories with an initial visit, there are only 51 with a fifth visit. Much of the lack of 5th-visit observations comes from the fact that the second wave is relatively large. Given that some factories were visited once per year, it is not surprising that only 188 factories had four visits by 2008.

Table 2 aggregates working conditions into 31 groups and summarizes the average compliance of each group.² Each factory’s compliance measure is calculated by taking the average of all of the 0/1 compliance questions (1 indicates compliance with national law or international standards) in each group. Table 2 contains the average of these factory-level values across all factories within each group. For example, a 1.000 indicates that all factories are fully compliant with all questions within that question group, and 0.800 indicates 80% compliance.

Table 2 shows a wide range of average compliance across groups—especially in the first visit with average values ranging from 0.999 (forced labor) to 0.603 (overtime). On average, compliance improves across visits. The average value increases as the number of visits increases for nearly all groups. The correlation between average values in the first and fourth visits is 0.86, which suggests that there is somewhat uneven improvement in groups over time.

4. Factors Affecting Compliance

While the 31 aggregated groups described above are useful, further aggregation may reveal common patterns. To analyze the correlation between different measures of working conditions, we perform a principal-components factor analysis. We use the results of the factor analysis in the subsequent formal regression analysis.

Table 1. Factory Counts Over Time

<i>Visit</i>	<i>Visit year</i>						<i>Total</i>
	<i>2001</i>	<i>2002</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	
1	85	34	7	187	30	20	363
2	0	0	18	121	136	20	295
3	0	0	0	48	185	22	255
4	0	0	0	0	80	108	188
5	0	0	0	0	12	39	51
Total	85	34	25	356	443	211	1154

Table 2. Compliance in Aggregated Working Conditions Indicators by Visit

Compliance category	Visit number				
	1	2	3	4	5
Child labor	0.907	0.882	0.887	0.887	0.889
Discrimination	0.985	0.987	0.989	0.987	0.985
Forced labor	0.999	1.000	1.000	1.000	1.000
Collective agreements	0.932	0.952	0.976	0.983	0.983
Strikes	0.990	0.999	0.999	0.999	0.993
Shop stewards	0.621	0.713	0.734	0.727	0.753
Liaison officer	0.767	0.862	0.905	0.926	0.953
Unions	0.969	0.991	0.993	0.997	0.998
Information about wages	0.678	0.736	0.775	0.781	0.788
Payment of WAGES	0.791	0.818	0.850	0.871	0.903
Contracts/hiring	0.792	0.821	0.859	0.878	0.919
Termination	0.903	0.902	0.896	0.899	0.897
Discipline	0.874	0.903	0.932	0.940	0.937
Sexual harassment	0.993	0.997	1.000	1.000	1.000
Disputes	0.936	0.955	0.958	0.974	0.967
Internal regulations	0.921	0.956	0.971	0.981	0.986
Health/first aid	0.615	0.690	0.710	0.746	0.778
Machine safety	0.841	0.873	0.895	0.914	0.929
Temperature/ventilation/noise/light	0.778	0.782	0.787	0.766	0.788
Drinking water	0.868	0.886	0.898	0.894	0.906
Sanitation	0.786	0.842	0.874	0.893	0.895
Food	0.754	0.774	0.786	0.800	0.809
Workplace operations	0.709	0.757	0.775	0.786	0.804
OSH assessment/recording/reporting	0.618	0.726	0.765	0.793	0.820
Chemicals	0.786	0.749	0.767	0.762	0.773
Emergency preparedness	0.879	0.915	0.920	0.938	0.930
Overtime	0.603	0.662	0.709	0.723	0.762
Regular hours/weekly rest	0.814	0.860	0.887	0.892	0.898
Accidents/illnesses compensation	0.835	0.968	0.972	0.984	0.990
Holidays/annual/special leave	0.850	0.856	0.894	0.906	0.926
Maternity benefits	0.765	0.837	0.863	0.881	0.922

Factor Analysis

Assuming the communalities are equal to 1, we find five groups of conditions that seem to suggest straightforward characterization. Factor 1 includes compliance points related directly to workplace regulations, information and hours (“Communications and Workplace Systems”). Traditional workplaces are typically characterized by one-way communication and little information sharing. By contrast, a modern workplace has developed systems for two-way communication, teamwork, problem-solving and information sharing. Innovations in this factor are, in many ways, the most challenging for a factory as they involve a fundamental change in the nature of the relationships and responsibilities within the workplace.

The second factor captures ambient working conditions (“Occupational Safety and Health”). The third factor (“Modern Wage Practices”) involves contracts and wages. This factor relates to factory practices such as clarifying the terms of employment,

payment of wages as promised, and adhering to rules regulating the length of the work day and days off. These are the labor management behaviors that most distinctively differentiate a sweatshop from a traditional but not oppressive or exploitative workplace.

The fourth factor involves freedom of association and collective bargaining (“Unions”) and the final factor (Group 5) involves discrimination, child labor and forced labor (“Core Labor Standards”). Group 5 categories enjoy near universal acceptance and are zero-tolerance points of compliance for the US government and reputation sensitive buyers.

Reputation Sensitivity

Using a very similar dataset, Oka (2010a,b) finds a strong effect of buyer reputation sensitivity on compliance behavior. In order to investigate the impact of buyer reputation sensitivity on labor law compliance, we collect data on each buyer’s commitment to corporate social responsibility, whether the firm is an apparel retailer or mass merchandiser, and other measures of brand value as determined by consulting firms such as Inter-Brand’s Best Global Brands Ranking and *Fortune*’s “Most Admired Companies” scoring system. Based on this range of information, buyers were first separated into apparel retailers and mass merchandisers. Apparel retailers are primarily in the business of selling apparel and may sell other related but non-apparel goods. Mass merchandisers refer to large chain stores that sell a wide range of products, with apparel being only one subgroup. These two groups of buyers differ principally in terms of product quality measured both in terms of the technical characteristics of the garment and the defect rate.

Within these two groups, buyers are subsequently divided by reputation sensitivity. As mentioned above, buyers are classified as reputation sensitive if they have published CSR reports or websites. Buyers sourcing from Cambodia during the study period fell into four broad categories:

- Type 1: Apparel retailers with significant evidence of corporate social responsibility.
- Type 2: Apparel retailers with little evidence of a policy relating to corporate social responsibility.
- Type 3: Mass merchandisers with significant evidence of corporate social responsibility. (No buyers fell into the category of mass merchandiser without evidence of CSR.)
- Type 4: Buyers that were not accessing BFC compliance reports.

These categories are included in the regression analysis along with other controls.

Before turning to the formal empirical analysis, Figure 1 focuses on the period just before and after the elimination of public disclosure, measuring compliance as an average across all firms and across approximately 405 working conditions within each visit. Figure 1 exhibits five key stylized facts: (1) firms both with and without reputation sensitive buyers improved working conditions, (2) factories with a reputation sensitive buyer have higher average compliance (consistent with Oka 2010a), (3) after the elimination of public disclosure the rate of improvement slowed for factories with a reputation sensitive buyer, (4) compliance for factories lacking a reputation sensitive buyer declined after the end of the public-disclosure period, but (5) compliance did not return to the baseline even in the absence of a reputation sensitive buyer or threat of public disclosure of noncompliance. These results are evaluated within a regression framework with control variables in the next section.

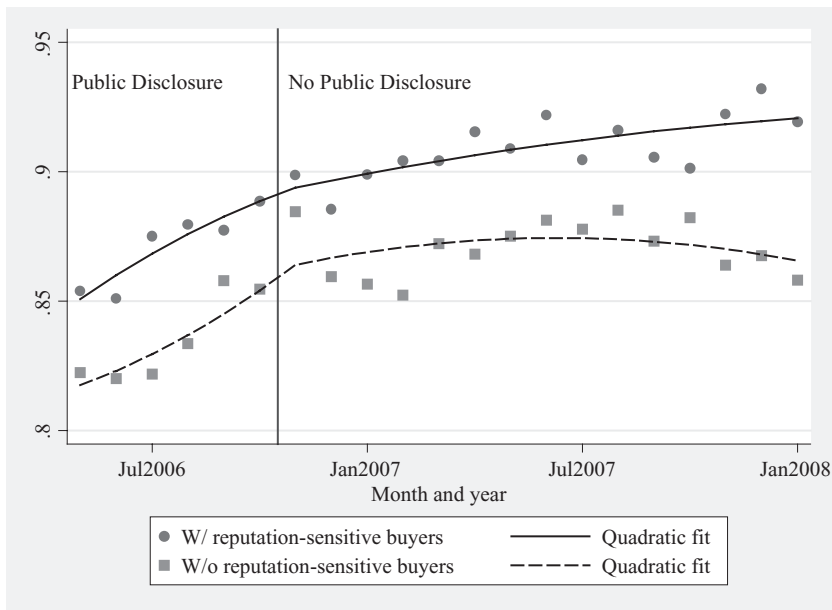


Figure 1. Convergence in Compliance

Empirical Results

As a first step, we estimate the mean compliance rate for each compliance factor. Results, for the entire sample and disaggregated by buyer type, are reported in Table 3. Note first that the compliance factors characterized by core labor practices (Freedom of Association, Collective Bargaining, Discrimination, Child Labor and Forced Labor) uniformly approach perfect compliance for all factory and buyer types. At the other end of the spectrum, the three factors that characterize innovations in labor management practices beyond sweatshop-like conditions (Modern Wage Practices, Occupational Safety and Health and Communication/Management Systems) have a lower rate of compliance than for the two core labor protections.

Furthermore, we observe a difference in compliance performance within the reputation sensitive supplier group. Factories supplying a quality sensitive retailer appear to be more compliant than factories supplying mass merchandisers. While not necessarily causal, this suggests that the human resource management system that minimizes the cost of achieving the quality specified by retailers also brings the factory into compliance along dimensions that improve product quality. That is, compliance along some dimensions is not the binding constraint on cost-minimizing factories producing quality garments.

Since we are interested in compliance before and after the change in disclosure policy, we separate overall compliance rates between the public disclosure period and the period after the policy change by visit. Table 4 contains the mean compliance rate, standard deviation, and number of observations for each visit in each period. Several important points emerge from Table 4. First, the overall compliance rates are higher in the period without public disclosure. They are higher in every visit, which might be due to several factors. Perhaps the most probable is that firms joining BFC in the later period entered with higher average compliance. It is also possible that there is

Table 3. Compliance Rates by Buyer Type

Variables	(1)	(2)	(3)
	Means	Means	Means
	Full sample	Buyer type 1 Reputation sensitive retailer	Buyer type 3 Reputation sensitive mass merchandiser
Communication and workplace systems	0.824*** [0.003]	0.860*** [0.004]	0.838*** [0.005]
Occupational safety and health	0.809*** [0.004]	0.854*** [0.006]	0.824*** [0.008]
Modern wage practices	0.862*** [0.004]	0.899*** [0.005]	0.873*** [0.006]
Unions	0.982*** [0.001]	0.987*** [0.002]	0.983*** [0.003]
Core labor standards	0.964*** [0.001]	0.964*** [0.002]	0.963*** [0.002]
Observations	349,150	91,732	101,788

Notes: Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 4. Compliance by Visit and Public Disclosure Period

Visit		Public disclosure		Total
		Yes	No	
1	mean	0.825	0.883	0.835
	st. dev.	(0.380)	(0.321)	(0.371)
	obs.	105,334	23,284	128,618
2	mean	0.848	0.884	0.872
	st. dev.	(0.359)	(0.321)	(0.334)
	obs.	44,406	87,822	132,228
3	mean	0.862	0.892	0.890
	st. dev.	(0.345)	(0.310)	(0.313)
	obs.	9,416	104,871	114,287
4	mean	.	0.898	0.898
	st. dev.	.	(0.302)	(0.302)
	obs.	0	84,311	84,311
5	mean	.	0.911	0.911
	st. dev.	.	(0.285)	(0.285)
	obs.	0	22,874	22,874
6	mean	.	0.864	0.864
	st. dev.	.	(0.343)	(0.343)
	obs.	0	896	896
Total	mean	0.834	0.892	0.873
	st. dev.	(0.372)	(0.310)	(0.333)
	obs.	159,156	324,058	483,214

hysteresis; having made improvements to human resources' (HR) practices, maintaining the status quo may be cheaper than either further improvements or retrogression to a lower standard. Another key difference, however, is that the difference between the first and second visits differs greatly between the public and non-public disclosure periods. Specifically, the average compliance rate changes little between the first and second visits during the period in which there is no public disclosure. Improvement in general seems to be greater during the public disclosure period.

Regression Analysis

Our primary estimation equation includes the compliance categories, a binary indicator equal to one if the factory's primary buyer is reputation sensitive (as defined above), whether or not the particular compliance point is considered "irreversible" (representing a significant fixed cost), four variables capturing union characteristics, and finally a binary indicator equal to one during the period in which the BFC publicly disclosed noncompliance of individual factories.

We estimate all equations using the linear probability model (LPM). The LPM is a reasonable choice in this situation because we are concerned with marginal effects, the event defined in the dependent variable is not too rare, and it facilitates easy inclusion of multiple-levels of fixed effects in our regressions (we also estimated probit equations and obtained nearly identical results). For all specifications we cluster the standard errors at the factory level and therefore mitigate the effect of having factory-level (rather than question-level) variation on the right-hand side.

Table 5 contains the results from the main equation for the entire sample. The pattern of compliance categories is similar to that found in Table 3. The estimates of the probability of compliance on points relating to Unions and Core Labor Standards are near one, 0.943 and 0.926 respectively. Compliance with modern wage practices (0.824) is generally higher than the Communication (0787) and OSH (0.777) categories, which are nearly identical. Confirming Oka (2010a), buyer reputation sensitivity has a positive and statistically significant effect, suggesting pressure from buyers may be a factor explaining compliance. The presence of a reputation sensitive buyer increases the probability of compliance by 0.042. In contrast, the union variables are insignificant and small, suggesting unions are not associated with significant improvements in compliance.

When disaggregating according to buyer type, as in columns (2) and (3) of Table 5, we see that retailers have higher compliance than mass merchandisers. To the extent that retailers focus on quality and brand identification, these results suggest that these investments affect compliance at the factory level. Of course, it is possible that factories with higher compliance may be able to attract retailers and this would be advantageous if margins are higher in retail. Interestingly, the effects of being an irreversible compliance point and unions are similar in columns (2) and (3) as in column (1). The union variables are generally insignificant, but irreversibility seems to deter compliance in areas in which that cost is higher.

In columns (4)–(6) of Table 5 we include factory-specific fixed effects. While the averages for the various compliance points change somewhat, the basic patterns are the same: retail-affiliated factories have higher compliance, irreversibility of the investment deters compliance, and there is little, if any, statistically significant effects of union characteristics on compliance.

Our main variable of interest is public disclosure. The estimate of public disclosure in the first column of Table 5 (−0.051) is relatively small, statistically significant and

Table 5. Factors Explaining Compliance

Variables	(1) Full sample	(2) Buyer type 1	(3) Buyer type 3	(4) Full sample	(5) Buyer type 1	(6) Buyer type 3
Communication and workplace systems	0.787*** [0.014]	0.869*** [0.018]	0.827*** [0.014]	0.677*** [0.003]	0.886*** [0.007]	0.848*** [0.003]
Occupational safety and health	0.777*** [0.014]	0.868*** [0.018]	0.817*** [0.014]	0.668*** [0.004]	0.886*** [0.008]	0.838*** [0.005]
Modern wage practices	0.824*** [0.014]	0.905*** [0.018]	0.861*** [0.014]	0.713*** [0.004]	0.923*** [0.007]	0.882*** [0.003]
Unions	0.943*** [0.014]	0.992*** [0.017]	0.970*** [0.014]	0.832*** [0.004]	1.009*** [0.007]	0.991*** [0.006]
Core labor standards	0.926*** [0.014]	0.970*** [0.017]	0.952*** [0.014]	0.817*** [0.004]	0.988*** [0.008]	0.973*** [0.006]
Reputation-sensitive buyer	0.042*** [0.005]					
Physically irreversible compliance point	-0.026*** [0.003]	-0.027*** [0.005]	-0.021*** [0.005]	-0.025*** [0.003]	-0.027*** [0.005]	-0.021*** [0.005]
Union active in labor rights	0.005 [0.005]	0.007 [0.008]	0.004 [0.010]	0.008 [0.006]	0.015 [0.010]	0.005 [0.009]
Small unions ^a	0.014** [0.006]	0.009 [0.011]	0.017 [0.012]	0.008 [0.006]	0.013 [0.012]	0.002 [0.012]
Unions known to be politically affiliated	0.014 [0.013]	0.023** [0.011]	0.028 [0.018]	0.002 [0.010]	0.006 [0.012]	0.025* [0.013]
Large unions ^b	-0.001 [0.007]	-0.003 [0.011]	-0.004 [0.014]	-0.001 [0.007]	0.006 [0.013]	-0.009 [0.011]
Public disclosure	-0.051*** [0.003]	-0.045*** [0.008]	-0.050*** [0.006]	-0.047*** [0.003]	-0.050*** [0.008]	-0.048*** [0.004]
Geographic fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Factory fixed effects	No	No	No	Yes	Yes	Yes
Observations	343,059	89,157	100,500	343,059	89,157	100,500

Notes: Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. ^a Unions possibly controlled by management. ^b Unions known to serve management. "Geo" fixed effects represent the region of factory ownership (Cambodia, China, Asia (excluding China), Europe (including Australia and the United States), and other). Public disclosure is a binary variable equal to one during periods when BFC disclosed non-compliance and zero otherwise. Type 1 buyers are apparel retailers with significant evidence of corporate social responsibility. Type 3 buyers are mass merchandisers with significant evidence of corporate social responsibility.

negative. This result suggests that compliance was generally higher during the period in which BFC did not publicly disclose non-compliance. At first blush, this result seems inconsistent with the contention that public disclosure positively affects compliance. However, this finding could be driven either by the initial compliance decision or by the subsequent decision not to retrogress. Since Figure 1 and Table 1 both show that there is limited retrogression in working conditions across visits, this result may well be driven by the latter. This suggests that a clearer assessment of the impact of public disclosure on compliance would focus on the decision to become compliant rather than the overall rates of compliance *per se*.

Table 6. First-time Compliance

Variables	(1)	(2)	(3)	(4)
	Means			
	Full sample	Full sample	Full sample	2006:06 to 2007:05
Communication and workplace systems	0.658*** [0.006]	0.446*** [0.033]	0.151*** [0.010]	0.218*** [0.003]
Occupational safety and health	0.665*** [0.007]	0.471*** [0.033]	0.176*** [0.010]	0.229*** [0.003]
Modern wage practices	0.743*** [0.006]	0.521*** [0.034]	0.219*** [0.010]	0.270*** [0.002]
Unions	0.967*** [0.003]	0.714*** [0.034]	0.375*** [0.011]	0.427*** [0.006]
Core labor standards	0.904*** [0.002]	0.660*** [0.034]	0.333*** [0.011]	0.349*** [0.005]
Reputation-sensitive buyer		0.044*** [0.012]		
Physically irreversible compliance point		-0.075*** [0.004]	-0.065*** [0.003]	-0.058*** [0.004]
Union active in labor rights		-0.057*** [0.013]	-0.006 [0.017]	-0.059* [0.034]
Small unions ^a		-0.003 [0.020]	0.012 [0.020]	-0.011 [0.043]
Politically affiliated unions		-0.051** [0.021]	-0.005 [0.025]	0.063 [0.071]
Large unions ^b		-0.049** [0.021]	-0.082*** [0.027]	-0.095** [0.041]
Public disclosure		0.248*** [0.018]	0.453*** [0.010]	0.433*** [0.014]
Geographical fixed effects	No	Yes	Yes	Yes
Factory fixed effects	No	No	Yes	Yes
Observations	141,048	136,046	136,046	89,974

Notes: Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. ^a Unions possibly controlled by management. ^b Unions known to serve management. "Geo" fixed effects represent the region of factory ownership (Cambodia, China, Asia (excluding China), Europe (including Australia and the United States), and other). Public disclosure is a binary variable equal to one during periods when BFC disclosed noncompliance and zero otherwise.

In order to address these arguments, we next estimate the determinants of the decision to become compliant. Table 6 contains the results from the same specifications as Table 5, except that the dependent variable is defined to be equal to one if the factory becomes compliant with a particular condition and equal to zero before and afterwards. The first column presents the means for first-time compliance in a fashion similar to Table 3. The pattern is nearly identical in terms of the relative magnitude of compliance across categories.

Columns (2)–(4) contain the results of the full regression. The effect of reputation sensitivity is nearly identical to the estimate in Table 5. Physical irreversibility now enters with a coefficient that is about three times larger (–0.075), which is intuitive if our variable is truly capturing the fixed costs of becoming compliant. Some union

variables are now statistically significant. Interestingly, all of the statistically significant union characteristics are negative, suggesting that active and politically affiliated unions are associated with lower propensity to become compliant.

Again, our main variable of interest is public disclosure. In essence, the estimate of the public disclosure variable captures a “difference in difference” estimate of the effect of the policy change. This variable now captures the difference in the rate of change in compliance between the two periods, which removes the “inertia” effect of compliance that affects the estimate of public disclosure in Table 5. The estimate of the impact of public disclosure the choice to become newly compliant (0.248) is now very large, positive, and statistically significant. The estimate of public disclosure increases when factory-specific fixed effects are included (column 3).

Robustness

One concern about these results is that the structure of the sample biases the results upwards. Factories with visits in 2001 or 2002 did not have return visits coded until 2005, and the 2005 visits were coded as the second visit for most of the first-wave factories. To examine the potential bias of this effect, we drop the first wave from the sample and just focus on the 2006:6 to 2007:5 period. Column (4) contains these results. These results suggest that there is little, if any, evidence of bias from including the earlier wave.

One additional concern might be that over time factories that join BFC and our sample enter with higher compliance. This seems to be true for the later period. The effectiveness of the BFC program, of course, depends on improvements in working conditions—possibly more than overall compliance. To compare first-time compliance through visits, Table 7 includes the results from interacting the visit number with the public disclosure period variable. Column (1) shows the results without factory fixed effects. Again the other control variables maintain the same qualitative results. Core labor standards and Union compliance groups have higher average compliance than the other three categories, and Modern Wage Practices averages are higher than the remaining two. Buyer Reputation Sensitivity is correlated with higher first-time compliance, and irreversibility seems to inhibit compliance.

The high initial compliance explains the negative values of the Visit variables. First-time compliance is highest in the first visit. First time compliance is even higher during the period in which factory noncompliance was not publicly disclosed, but when focusing on the improvements in working conditions, which occur during the second and subsequent visits, the large, significant, and positive coefficient on the interaction terms of visits two and three and the public disclosure variable is consistent with the hypothesis that improvement in working conditions (in the form of becoming compliant when not previously compliant) was greater during the period in which noncompliant factory names were publicly disclosed. The large positive values of the second visit interaction term is robust to the inclusion of fixed effects (column (2)) and excluding the first wave (2001–2002), as shown in column (3). The value of the estimated interaction term falls when the first wave is excluded, but the value remains relatively large.

It is also interesting that the interaction of the third period with the public disclosure indicator variable is positive and significant in columns (1) and (2) (although not in column (3)). The magnitude is smaller, suggesting that firms are most likely to make improvements between the first and second visit, which is consistent with Figure 1. There seems to be diminishing marginal returns to visits after the second visit. Note

Table 7. First-time Compliance by Visit

Variables	(1) Full sample	(2) Full sample	(3) 2006:06 to 2007:05
Communication and workplace systems	0.754*** [0.014]	0.713*** [0.024]	1.049*** [0.038]
Occupational safety and health	0.777*** [0.014]	0.737*** [0.024]	1.057*** [0.038]
Modern wage practices	0.818*** [0.014]	0.777*** [0.024]	1.095*** [0.038]
Unions	0.966*** [0.014]	0.924*** [0.024]	1.239*** [0.038]
Core labor standards	0.925*** [0.014]	0.885*** [0.025]	1.166*** [0.038]
Reputation-sensitive buyer	0.044*** [0.005]		
Physically irreversible compliance point	-0.063*** [0.003]	-0.063*** [0.003]	-0.055*** [0.004]
Visit 2	-0.458*** [0.013]	-0.496*** [0.021]	-0.496*** [0.021]
Visit 3	-0.543*** [0.012]	-0.575*** [0.024]	-0.613*** [0.025]
Visit 4	-0.622*** [0.014]	-0.653*** [0.027]	-0.719*** [0.027]
Visit 5	-0.655*** [0.025]	-0.696*** [0.035]	-0.833*** [0.036]
Visit 6	-0.659*** [0.081]	-0.665*** [0.108]	-0.741*** [0.091]
Public	-0.048*** [0.007]	-0.100*** [0.024]	-0.076*** [0.025]
(Visit 2) × Public	0.415*** [0.015]	0.472*** [0.025]	0.276*** [0.041]
(Visit 3) × Public	0.061*** [0.022]	0.117*** [0.036]	-0.051 [0.050]
Geographical Fixed Effects	No	Yes	Yes
Factory Fixed Effects	No	Yes	Yes
Observations	136,012	136,012	89,951

Notes: Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. “Geo” fixed effects represent the region of factory ownership (Cambodia, China, Asia (excluding China), Europe (including Australia and the United States), and other). Public is a binary variable equal to one during periods when BFC disclosed noncompliance and zero otherwise. The union controls in Tables 5 and 6 were included in the regression but are not reported in this table.

that it is impossible to compare the effects of visits after the third visit because there are no observations for four or more visits during the disclosure period (Table 4).

5. Conclusions

Working conditions in developing countries are often characterized as sweatshops. Improving these conditions requires an understanding both of the factors that lead to sweatshop-creating choices by firm managers and that have the greatest impact on the

decision to improve these conditions. We present a novel factory-level dataset from Cambodia to identify mechanisms that induce innovation in labor management practices which are more humane and potentially more efficient.

Following the introduction of labor law enforcement by the ILO's Better Factories Cambodia program, we find broad improvement in working conditions among firms both with and without a reputation sensitive buyer. Factories with a reputation sensitive buyer have higher average compliance than other factories. Other factors expected to affect the decision to comply, such as the irreversibility of an investment in improvement, are shown to be consistently negatively correlated with improvements in working conditions. Our main focus, of course, is the importance of public disclosure on compliance. After the elimination of public disclosure of factory-level noncompliance, the rate of improvement in compliance slowed and, for some factories, declined. Even for factories and compliance points with falling compliance measures, however, compliance did not return to the baseline even after the threat of public disclosure was eliminated.

These findings are consistent with several hypotheses concerning labor law enforcement and the adoption of humane labor management practices in apparel factories. First, third party enforcement complements and enhances code compliance efforts by reputation sensitive buyers. More importantly, however, Better Factories Cambodia also improved compliance with international labor standards and local labor law in factories lacking a reputation sensitive buyer. Such factories typically have a low buyer-level reputational pay-off to compliant behavior and, thus, free-ride on the market-level reputation created by highly compliant factories supplying reputation sensitive buyers. That is, BFC appears to have improved compliance even among firms lacking a factory-level benefit from a reputation for compliance.

Factory-specific public disclosure of noncompliance appears to be the mechanism by which BFC controlled free riding by factories that lacked a reputation sensitive buyer on the market-level reputational externalities generated by compliant factories. For, when public disclosure of noncompliance was terminated at the end of 2006, average compliance by factories lacking a reputation sensitive buyer declined absolutely and relative to the compliance record of other factories.

However, these factories did not regress to the baseline level of compliance even though no one other than factory management was aware of the factory's record of noncompliance. Thus, enforcement activities may have induced factories to experiment in human resource management innovations that are both more humane and more efficient. Our findings are particularly consistent with evidence from the experimental literature concerning the use of payment of wages to induce work effort.

Overall, the results of this paper take advantage of a simple policy experiment. The change in policy regarding disclosure seems to be consistently and strongly correlated with factories' decisions to comply. These results are consistent with Polaski (2006)'s contention that public disclosure is a key element explaining the early successes of Better Factories Cambodia and Brandeis's contention that "sunlight" is an effective incentive for compliance with widely accepted community standards.

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Notes

1. More information about the Better Factories program can be found at <http://www.betterfactories.org/>.
2. Of these 405 questions, 62 show no variation across both factory and visit. These questions are dropped from the analysis.