1-1-2009

Globalization and the Wage-Working Conditions Relationship: A Case Study of Cambodian Garment Factories

Cael Warren
Macalester College

Honors Project

Macalester College

Spring 2009

Title: Globalization and the Wage-Working Conditions Relationship: A Case Study of Cambodian Garment Factories

Author: Cael Warren

PERMISSION TO DEPOSIT HONORS PROJECTS

Please read this document carefully before signing. If you have questions about any of these permissions, please contact Janet Sietmann (x6545) in the Library.

Title of Honors Project: Globalization and the Wage-Working Conditions Relationship: A Case Study of Cambodian Garment Factories

Author's Name: (Last name, first name) Warren, Cael

The library provides access to your Honors Project in several ways:

- The library makes each Honors Project available to members of the Macalester College community and the general public on site during regular library hours.
- Using the latest technology, we make preservation copies of each Honors Project in both digital and microfilm formats.
- Every Honors Project is cataloged and recorded in CLICnet (library consortium OPAC) and in OCLC, the largest bibliographic database in the world.
- **To better serve the scholarly community,** a digital copy of your Honors Project will be made available via the Digital Commons @ Macalester (digitalcommons.macalester.edu.

The DigitalCommons@Macalester is our web based, open access compliant institutional repository for digital content produced by Macalester faculty, students, and staff. It is a **permanent** archive. By placing your projects in the Digital Commons, all materials are searchable via Google Scholar and other search engines. Materials that are located in the Digital Commons are freely accessible to the world; however, your copyright protects against unauthorized use of the content. Although you have certain rights and privileges with your copyright, there are also responsibilities. Please review the following statements and identify that you have read them by signing below. Some departments may choose to protect the work of their Honors students because of continuing research. In these cases the project is still posted on the repository, but content can only be accessed by individuals who are located on campus.

The original signed copy of this form will be bound with the print copy of the Honors Project. The microfilm copy will also include a copy of this form. Notice that this form exists will be included in the Digital Commons version.

I have read the above statement and **agree** to make my Honors Project available to the Macalester College community and to the larger scholarly community in our permanent digital archive the DigitalCommons@Macalester or its successor technology.

Signed 

OR

I **do not want** my Honors Project available to the larger scholarly community. I want my Honors Project available only in the library, **NOT** for interlibrary loan purposes, and **NOT** through the Macalester College Digital Commons or its successor technology.

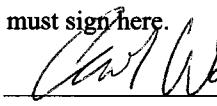
Signed _____

NOTICE OF ORIGINAL WORK AND USE OF COPYRIGHT PROTECTED MATERIALS:

If your work includes images that are not original works by you, you must include permissions from original content provider or the images will not be included in the electronic copy. If your work includes discs with music, data sets, or other accompanying material that is not original work by you, the same copyright stipulations apply. If your work includes interviews, you must include a statement that you have the permission from the interviewees to make their interviews public.

BY SIGNING THIS FORM, I ACKNOWLEDGE THAT ALL WORK CONTAINED IN THIS PAPER IS ORIGINAL WORK BY ME OR INCLUDES APPROPRIATE CITATIONS AND/OR PERMISSIONS WHEN CITING OR INCLUDING EXCERPTS OF WORK(S) BY OTHERS.

All students must sign here.

Signature:  **Date:** 5-4-09

Printed Name: Cael Warren

Globalization and the Wage-Working Conditions Relationship:

A Case Study of Cambodian Garment Factories

Cael Warren

Advisor: Raymond Robertson

5/4/09

Abstract

The wage premiums for firm-level foreign exposure (exporting and foreign ownership) have been well documented in the literature, and their potential sources have been studied in depth. Compensating differentials and efficiency wages are two distinct explanations (with radically different implications for worker welfare) for wage gaps that persist between firms despite controls for firm and worker characteristics. We use a comprehensive dataset of working conditions and wage compliance in Cambodia's exporting garment factories to explore (1) the impact of foreign ownership on wages and working conditions, (2) whether the relationship between wages and working conditions within these exporting factories more closely resembles efficiency wage or compensating differential theory and (3) whether the wage-working conditions relationship differs between domestically owned and foreign-owned firms.

We find that foreign ownership increases compliance on both wages and working conditions, contradicting the contention that higher wages in foreign-owned firms compensate workers for worse working conditions. In addition, we find a robust positive relationship between wages and working conditions in the sample as a whole, suggesting that efficiency wages or a similar theory more accurately explains the behavior of these exporting firms than compensating differentials. This positive relationship is stronger in domestically owned firms than in foreign-owned firms, but the relationship remains positive, fairly large, and statistically significant even in foreign-owned firms. Due to the lack of evidence in support of compensating differential theory, we conclude that both foreign ownership and exogenously imposed improvements in working conditions improve net worker welfare.

Despite the conventional wisdom that foreign-owned factories in developing countries operate as "sweatshops," paying low wages and providing unpleasant work environments, many studies have shown that wages are higher in foreign-owned firms than in their otherwise identical domestically owned counterparts.[1] The literature has also shown that exporting firms pay higher wages than non-exporting firms,[2] lending further support to the notion that working in a "globalized" firm benefits workers. These results are encouraging, but they do not necessarily imply that exposure to foreign markets improves worker welfare overall. If higher wages compensate workers for poor working conditions, workers may be no better off in these firms. If, on the other hand, wages do not decline as working conditions improve, workers may be made better off by working in a foreign-owned or exporting firm. Determining the presence (or absence) of compensating differential relationships in exporting and foreign-owned firms is thus critical to understanding the impact of globalization on workers in developing countries.

The literature consistently reveals positive wage premiums in exporting and foreign-owned factories relative to non-exporting and domestically owned factories, but the source of these wage premiums remains unclear. Using a detailed dataset of exporting factories in Cambodia, this paper explores (1) how wages and working conditions differ between domestically and foreign-owned firms, (2) whether compensating differentials explain the wage changes that occur within the full sample of domestically and foreign-owned exporting firms over time and (3) whether the relationship between wages and working conditions differs between domestically and foreign-owned firms. We find that foreign-owned firms are more compliant than domestically owned firms on both wages and working conditions, suggesting that compensating differentials cannot explain the foreign ownership wage premium in these

[1] See, for example, Aitken et al. (1996), Girma and Görg (2007), and Sjöholm and Lipsey (2006).
[2] Bernard and Jensen (1995), Glick and Roubaud (2006), and Schank et al. (2007) are a few examples.

factories. In addition, good working conditions are positively related to wages within firms, suggesting that improvements in working conditions do not induce firms to reduce wages. This positive relationship is stronger in domestically owned factories, but is also positive, relatively large, and statistically significant in foreign-owned factories. Due to this evidence contradicting compensating differential theory both between domestically and foreign-owned firms and within firms, we move one step closer to the conclusion that both foreign ownership and improvements in working conditions make workers in these factories better off overall.

Firms exposed to foreign markets tend to pay higher wages, even when controlling for a variety of factors. Several studies, in both developing and developed countries, have shown that foreign-owned firms pay higher wages than their domestically owned counterparts, controlling for many firm and worker characteristics. Aitken et al. (1996), Girma and Görg (2007), and Sjöholm and Lipsey (2006), are just a few examples of such studies.[3] Exporting firms also tend to pay higher wages than non-exporting firms, controlling for a variety of firm characteristics. Bernard and Jensen (1995) use plant-level U.S. manufacturing data to show that the wage premium in exporting firms persists despite a variety of controls and plant-level fixed effects.[4] Several other studies have replicated these results in a variety of contexts, from Glick and Roubaud's (2006) study on Export Processing Zones in Madagascar to a study of exporting firms in Germany (Schank et al. 2007). Though a few other studies have failed to show evidence of this relationship, the preponderance of the evidence seems to suggest that exporting firms pay higher wages than non-exporting firms.

Compensating differentials and efficiency wages, two theories with opposite implications for worker welfare, are the literature's dominant explanations for wage gaps that persist between

[3] See Lipsey (2004, 333-382) for a more comprehensive review of the literature on the FDI-wage relationship.

[4] Though the bulk of the wage premium is explained by other firm-level controls like plant size, capital intensity, hours per worker, industry, and location, the premium for exporting firms remains.

firms despite controls for firm characteristics. The evidence supporting the efficiency/fair wage model is extensive, indicating that firms often pay above-market wages to harness productivity gains. Empirical evidence has shown that paying efficiency wages reduces shirking (Cappelli and Chauvin 1991), increases worker effort (Goldsmith et al. 2000), increases worker productivity (Fuess and Millea 2002), and increases the firm's market share through those productivity gains (Konings and Walsh 1994). Arai (1994) finds indirect evidence that firms are using higher wages to reduce shirking, showing that Swedish inter-industry wage differentials are strongly and positively related to levels of worker autonomy. The literature thus suggests the presence of efficiency wage behavior among firms, a sign that higher wages could signal a net improvement in welfare for the workers receiving these higher wages (since the higher wages yield output increases for the firm, thereby eliminating the need for cost-cutting working conditions reductions in response to the wage increases).

Empirical tests of compensating differential theory, meanwhile, have turned up mixed results. While many have found evidence of compensating differentials for accident risk (Cousineau et al. 1992; Marin and Psacharopoulos 1982), occupation- and industry-level work-related mortality risk (Leigh 1991), hard, physical, or stressful work (Duncan and Holmlund 1983; Duncan and Stafford 2002 [1980]) and inconvenient work hours (Duncan and Holmlund 1983; McNabb 1989; Altonji and Paxson 1988), others have found little evidence of compensating differentials for these working conditions and others (Brown 1980; Dorman and Hagstrom 1998; McCrate 2005).[5] In addition to its inconsistent support for compensating differential theory, the literature is also entirely comprised of worker-level studies despite the firm's essential role in determining wages and working conditions. The mixed results in the

[5] A few studies apply compensating differential theory to industry-level export wage premiums (using worker-level data), and they too find little or no evidence of compensating differentials in El Salvador (Robertson and Trigueros-Argüello 2008), Indonesia (Robertson et al. 2008), and Cambodia (Robertson and Neak 2008).

literature may be due in part to this lack of firm-level studies. Nonetheless, the results suggest that workers might gain a net increase in welfare from higher wages, but the higher wages sometimes compensate them for otherwise worse working conditions.

The scarcity of firm-level working conditions data has so far meant that studies of the firm's choice between employing efficiency wages or compensating differentials in worker compensation are very rare. Furthermore, the minimal diversity of working conditions measures available in most datasets, even at the worker level, has prevented a close examination of the full package of wages and working conditions offered. Finally, while many have compared wages in domestically and foreign-owned firms, none have studied whether the higher wages in foreign-owned firms are driven by worse working conditions. This paper, using a comprehensive dataset of working conditions in Cambodia's exporting garment factories from the Better Factories Cambodia (BFC) program, explores this wage-working conditions relationship to evaluate the net impact of foreign ownership and working conditions improvements on worker welfare.

The influence of the Better Factories Cambodia program (described in section three) in these firms provides a unique situation with great empirical potential. While most firm-level studies must rely on various immeasurable or random exogenous shocks for their data variation, BFC provides a common and known shock across firms, applying pressure on all firms to improve working conditions and wage compliance.[6] With this great empirical strength of the dataset, however, come two limitations of note. First of all, the dataset contains only measures of wage compliance, not of worker compensation itself. We therefore use an index of five measures of wage compliance (explained in detail in section three) to proxy for wages. Secondly, because the dataset is entirely comprised of exporting firms, we cannot explore both

[6] This is not to say that the BFC effect is uniform across firms, but we account for the heterogeneity of the BFC effect with firm-level controls for the cumulative number of BFC visits and their frequency.

the exporting and ownership dimensions of the effect of foreign exposure on the wage-working conditions relationship.

Instead, we explore the impact of foreign ownership within this sample of exporting firms in three steps. First (in section four), we identify the positive effect of foreign ownership on both wages and working conditions in these firms, controlling for other observable firm characteristics. This finding contributes to the limited literature on the source of the foreign ownership wage premium, but says nothing about how the firms choose combinations of wages and working conditions over time, particularly in response to a shock. We therefore examine the wage-working conditions relationship within firms over time, revealing the firm's choice between the compensating differentials and efficiency wages approaches to worker compensation. In section five, we explore this wage-working conditions relationship within the entire sample of foreign-exposed (exporting) firms.[7] In section six, we examine how that wage-working conditions relationship differs by the dimension of foreign exposure for which our dataset contains variation – ownership. Before we proceed with the empirical results, however, we will lay out a firm-level theoretical framework to illustrate the contrasting predictions of the compensating differential and efficiency wage models, and then describe the dataset used to evaluate these theoretical predictions.

2. Conceptual Framework

To illustrate the contrasting predictions of the wage-working conditions relationship presented by the theories of compensating differentials and efficiency wages, we apply a basic isoquant production framework that is based on five assumptions. First, firms respond rationally

[7] This component says nothing about the *effect of* foreign exposure, but examines firm behavior in selecting combinations of wages and working conditions within a unique dataset of foreign-exposed firms.

to an exogenously imposed positive shock to working conditions.[8] Second, firms differentiate themselves according to output quality, as demonstrated specifically in exporting firms by Mandel (2008). Third, firms can improve output quality by eliciting more effort from workers. Fourth, workers will put forth more effort if they receive greater compensation, which is comprised of combinations of wages and working conditions. Finally, workers are willing to trade off wages and working conditions as inputs in their "production" of effort for the firm.

There are many combinations of wages and working conditions that a firm can offer to elicit each intended level of quality/effort from workers. Because workers trade off wages and working conditions in their effort production function, wages and working conditions are negatively related within a given level of quality/effort. A graphical depiction of the firm's problem is illustrated in Figure 1. A firm aiming to elicit a low level of effort might operate anywhere on the Low Effort isoquant. One such firm, starting at some combination of wages and working conditions represented by point P, has two broad options for the path it takes in wages/working conditions space when an exogenous improvement in working conditions is imposed. It can reduce wages in response to the higher costs of improving working conditions (move down along the Low Effort isoquant to point N) or it can hold wages constant or even increase them (move to the High Effort isoquant, to point M). Moving along a given effort curve represents the wage-working conditions tradeoff, or the compensating differential relationship. A shift to a higher effort curve, meanwhile, illustrates the essence of efficiency wage theory:

[8] This theoretical analysis considers an exogenous improvement in working conditions as prompted by the Better Factories Cambodia program. The conclusions would be the same if we considered an exogenous improvement in wages and its impact on working conditions, because this analysis considers the impact on either wages or working conditions of the firm's marginal choice to improve the other form of compensation. In other words, for each improvement in either wages or working conditions made by the firm, this model considers the two possible effects (negative or nonnegative) on the other form of compensation.

increasing total worker compensation can be profit-maximizing for the firm when it produces greater worker effort.

As a result, the relationship between wages and working conditions within firms over time can reveal their choice between a compensating differentials approach (which holds worker welfare constant despite changing compensation mixes) and alternative approaches such as efficiency wages (which improve worker welfare). The next section describes the data that we will use to explore this wage-working conditions relationship in Cambodian garment factories.

3. Data

3.1 Data Source

The data come from the Better Factories Cambodia (BFC) program of the International Labor Organization. Designed to improve working conditions in Cambodian factories by addressing the problem of imperfect information, this program aims to inform buyers about the conditions in the factories from which they purchase garments. To do so, BFC monitors working conditions in all Cambodian garment factories during unannounced visits, sending Cambodian monitors into factories to complete a survey assessing the factory's compliance on a variety of working conditions and wage requirements. To avoid monitor bias, each monitoring team contains at least two people, and the same team rarely assesses the same factory twice. After the factory's second BFC visit, BFC publishes the firm's name and progress on improving working conditions in an annual synthesis report, which they share with the factories' buyers.

As the Cambodian government has mandated that all exporting garment factories consent to this monitoring program, it eventually reached all such factories. The original wave of visits in 2001-2002 reached 119 factories with the first survey created for BFC. For the three years following the visits to these original factories, monitors conducted visits using less formal

techniques and did not carefully record results, so data are unavailable for this three-year period. The next 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 an average of once every eight months. Through July 2008, this panel dataset contains 363 factories and 1154 factory-visit observations, of which 295 factories have more than one visit (for a total of 1086 observations).

The theoretical framework calls for variables representing wages, working conditions, and the standard determinants of wages within firms such as size, age, and ownership (Brown and Medoff 1989; Brown and Medoff 2003). Because wages themselves are unavailable in the dataset, an index of five measures of compliance on wage law (explained below) will serve as a proxy for wages. The dataset contains approximately 130 measures of working conditions, which we aggregate in different ways to represent working conditions empirically. Firm controls include firm age (in months), firm size (measured as the total number of workers) and the percentage of workers in a union, all of which should predict higher wage compliance. We also control for the variation in the BFC effect using measures of the cumulative number of BFC visits and their frequency. Finally, specifications in section six will include a control for foreign ownership.

3.2 Construction of Index Variables

The dataset includes approximately 130 compliance variables, all on a 0/1 compliance/ noncompliance scale. The compliance questions from which these variables originate, matched between the original and IMS surveys, are listed in Appendix A. To make these useful for analysis, we group these variables into twenty-seven subcategories, which we then group into the broader categories shown in Table 1. We generate compliance rates for each category as the

simple average of compliance across the questions in the category, normalized to a scale of 100. *Wages*, for example, contains five compliance questions[9], so a *wages* value of 60 means that the factory was compliant on three of the five wage payment questions during that visit. We generate all other indices in the same way, though the rest contain more questions, ranging from 15 to 34 in the disaggregated working conditions measures. The most complicated index is *Working Conditions,* which contains all of the other non-wage indices shown in Table 2, and is the measure of working conditions used in this paper unless specified otherwise.

3.3 Summary Statistics

The working conditions covered by the survey range from occupational safety and health (OSH) to freedom of association and collective bargaining (FACB) to maternity leave and other benefits. The categories of working conditions and the summary statistics of their compliance rates, along with some basic firm characteristics and the breakdown of ownership groups, are shown in Table 2. The average factory is almost five years old and employs about 1200 workers. Of the 363 factories, 284 have received at least two BFC visits and have complete data for the necessary firm controls. Visits typically fall about ten months apart, but the time between visits varies widely due to a gap in the dataset (explained below). The vast majority of the sample (95%) is foreign-owned, with 65% owned by China, 25% owned by other Asian countries, and only 3% owned by Western countries.

The mean level of working conditions compliance in the sample was about 86%, meaning that the average factory visited between 2001 and 2008 was found to be noncompliant on about 14% of measures. The mean level of wage compliance is higher (92%), but it also varies more widely. Rates of compliance on the smaller working conditions categories range from the

[9] The five compliance variables included in the *Wages* index are whether the firm paid the proper minimum wage, overtime wage, night wage, holiday wage, and wage during weekly time off (Sunday).

relatively low 78% on OSH2 to the relatively high 92% for Internal Relations and FACB. Figure 2 shows changing compliance rates over time across all factories. The trend for all compliance measures is generally positive over time, with a marked improvement in compliance between the first two periods and a more gradual upward movement after that. The dramatic increase after the first period is unsurprising given that the gap between these two periods is approximately three years, during which monitors conducted visits but collected no data. All compliance variables move fairly well together, though the occupational safety and health (OSH) variables level off at noticeably lower compliance rates than the others.

Finally, Table 3 illustrates the varying levels and changes of wage and working conditions compliance by different ownership groups. Foreign-owned factories are more compliant on both wages and working conditions and also improve more rapidly by both measures than their domestic counterparts. Non-Chinese Asian owners are most compliant on wages, while Chinese owners are least so among the FDI groups. Non-Chinese Asian-owned factories also improve wages at a higher rate than the others, and are slightly more compliant on working conditions overall. Factories owned by Western countries improve working conditions at the fastest rate in the sample, excluding the group for which ownership was not known.

4. FDI's Impact on Wages and Working Conditions

For a basic idea of one aspect of globalization's effect on the welfare of workers in these garment factories, we first explore the impact of foreign ownership on wages and working conditions. We begin by estimating Equation **(1)**, shown below:

$$Wages_{it} = ß_0 + ß_1(Firm\ Size_{it}) + ß_2(Firm\ Age_{it}) + ß_3(\%Union_{it}) + ß_4(FDI_{it}) + \varepsilon_{it} \quad \textbf{(1)}$$

where t is measured in visits, i is the firm, *Wages* is an index variable as described above, *Firm Size* is the number of workers employed by the firm, *Firm Age* is measured in months, *%Union*

is the percentage of workers in a union, and FDI is a dummy variable equal to one if the firm is not Cambodian-owned. The results, shown in the first column of Table 4, indicate a relatively large and statistically significant (at the 10% level) effect of FDI on wage compliance, with wage compliance about 9 percentage points higher in foreign-owned factories than in domestically owned factories. These results confirm findings elsewhere in the literature of higher wages in foreign-owned firms, so long as we assume wage compliance to be an effective proxy for wages.

The positive effect of foreign ownership on wages does not, however, guarantee that workers in foreign-owned firms are better off than those in domestically owned firms. We therefore also examine the effect of foreign ownership on the index of working conditions, running Equation **(1)** with *Working Conditions* (the aggregated index as described above) as the dependent variable. The second column of Table 4 presents the results, which show a strong and statistically significant effect of foreign ownership on working conditions compliance. While foreign ownership has a smaller effect on working conditions (about a 4-percentage-point increase) than on wages, the coefficient is still fairly large and statistically significant at the 1% level. Since foreign ownership appears to have a strong and statistically significant impact on both wages and working conditions, these results suggest that higher wages (represented by greater wage compliance) in foreign-owned firms do not serve as compensating differentials for worse working conditions.

5. Wages and Working Conditions Within Firms Over Time

The positive effect of foreign ownership on wages and working conditions separately says little about how firms choose combinations of wages and working conditions, but this firm choice is vital to workers' welfare outcomes. Understanding the impact of changing working conditions on wage compliance within firms, especially in response to an exogenous shock like

the implementation of Better Factories Cambodia, can help reveal whether such programs have a net positive impact on workers. We therefore now consider the relationship between wages and working conditions within firms over time in the full sample of exporting garment factories.

5.1 Estimation Issues

While the small number of time periods mitigates the risk of serial correlation or nonstationarity, the wide diversity of the firms makes heteroskedasticity likely. Results of a Breusch-Pagan/Cook-Weisberg test confirm this suspicion. The empirical results that follow report heteroskedasticity-corrected standard errors to address this issue. In addition, multicollinearity could be a concern. Diagnostic analysis suggests only mild multicollinearity,[10] so we will proceed, acknowledging that there are some moderate correlations between explanatory variables, especially when we disaggregate working conditions.

Finally, the potentially simultaneous determination of wages and working conditions means that OLS estimation could yield biased coefficients, since the simultaneity leads to a correlation between the *Working Conditions* variable and the error term. To effectively address this simultaneity bias, we would ideally instrument for *Working Conditions* with some variable unrelated to *Wages* and use Two-Stage Least Squares to estimate the coefficients. Unfortunately, variables theoretically correlated with *Working Conditions* but not with *Wages* are unavailable in the dataset. Understanding that we cannot currently address the simultaneity bias, we can more carefully consider its effects on the coefficients. Since traditional economic theory predicts a tradeoff between wages and working conditions, the simultaneity should cause the *Working Conditions* variable to be negatively correlated with the error term. As a result, OLS should actually attribute *less* than the true effect to the *Working Conditions* coefficient. The

[10] Among the simple correlation coefficients between categories, however, no coefficient exceeds 0.6, though one exceeds 0.5. The remainder of the correlation coefficients are less than 0.25. A test of the Variance Inflation Factors indicates only mild multicollinearity, with a maximum VIF of 1.6.

simultaneity thus biases our coefficients downward, making us more likely to observe compensating differential relationships between wages and working conditions. As we will show next, however, this bias does not eliminate the robust positive wage-working conditions relationship in these firms.

5.2 Initial Results

To identify the path the firm follows in wage-working conditions space over time, we use a difference-in-difference approach, regressing the change in wage compliance on the change in working conditions compliance. We begin by estimating Equation **(2)** below, where *t* is measured in visits, *i* is the factory, *Wages* and *Working Conditions* are indices as described above, *Firm Size* is in number of workers, *Firm Age* is in months, *%Union* is the percentage of workers in a union, *Visit* is the number of visits completed (including the *t*'th visit), and *Time* is the number of days since the last BFC visit to the factory.

$$\Delta Wages_{it} = ß_0 + ß_1(\Delta Working\ Conditions_{it}) + ß_2(\Delta Firm\ Size_{it}) + ß_3(Firm\ Age_{it}) + ß_4(\Delta \%Union_{it}) + ß_5(Visit_{it}) + ß_6(\Delta Time_{it}) + \varepsilon_{it} \qquad \textbf{(2)}$$

Regression results for Equation **(2)**, shown in the first column of Table 5, illustrate a fairly strong positive relationship between working conditions and wage compliance in these firms. The statistically significant coefficient of 0.872 indicates that, when the change in working conditions compliance improves by ten percentage points, the change in wage compliance improves by almost nine percentage points.[11] In other words, improving working conditions translates almost one-for-one into improving wage compliance. This pattern emerges despite our controls for the firm age, firm size, unionization in the firm, number of BFC visits to the factory, and amount of time since the last BFC visit. Explanatory power of the regression is

[11] Recall that both wages and working conditions are measured in indices of compliance, generated in such a way that a one-unit increase amounts to a one percentage point improvement in compliance.

low, however, with an overall R-squared of only 0.07, and the controls are all statistically insignificant (though correctly signed)[12] when we use heteroskedasticity-corrected standard errors. Nonetheless, these results indicate that, controlling for the theoretically essential firm characteristics, wages and working conditions are positively related.

These results contradict the contention of compensating differential theory that wages and working conditions should move opposite one another within firms. The observed positive relationship between working conditions and wage compliance implies that these firms can improve their outcomes by increasing their total compensation mix to workers (moving from the Low Effort to the High Effort isoquant); if this were not the case, the firm's rational behavior would lead to a negative relationship between wages and working conditions. It appears, therefore, that the efficiency wage model, which predicts simultaneous improvements in wages and working conditions (presumably) to inspire greater worker effort, captures the behavior of these exporting firms better than the compensating differentials model. While we cannot contrast these results with those of non-exporting factories, we can say that, within this sample of foreign-exposed firms, higher wages do not signal worse working conditions or vice versa.

5.3 Robustness

To evaluate the robustness of the large and significant working conditions coefficient, we use a variety of alternative specifications and sample alterations, the results of which we will discuss in this subsection. First of all, given the subjective nature of the data collection and the discrete (0/1) nature of the compliance measures, the data could contain monitor-based variation as different monitors draw different lines between compliance and noncompliance. We therefore include a set of monitor dummy variables, equal to one if the monitor was present in the factory

[12] The *Visit* variable carries an unexpectedly negative sign, but splitting the sample into the original factories and the more recent entries into the program (below) explains this unexpected result.

for that visit. The results of including this set of dummy variables are shown in column two of Table 5. The dummy variables' coefficients (not shown) are all statistically insignificant, and the main effect of their inclusion is to increase the magnitude of the (still statistically insignificant) *Visit* variable. The coefficient on *Working Conditions* increases slightly, and remains statistically significant at the 1% level. The variation in monitors in the sample appears not to affect the strong wages-working conditions relationship.

While unionization is a theoretically essential determinant of wage compliance, the data used to generate the unionization variable are imperfect, and including this variable reduces the sample by 160 observations. We therefore test whether these data imperfections or sample limitations are somehow driving the strong relationship between wages and working conditions. Column three of Table 5 shows the results of Equation **(2)** with unionization excluded. The *Working Conditions* coefficient falls slightly, to 0.79, in response to this change, but remains relatively large and statistically significant at the 1% level. Excluding each of the other firm-level controls individually (not shown) has even less of an effect on the *Working Conditions* coefficient and the other coefficients in the regression.[13]

It is also possible that wages and working conditions move together simply because both have improved over time, due to increasing standards globally and especially due to the effect of BFC's presence. Though we control for the variation in the BFC effect using the number of visits and the time since the last visit, the global improvement over time may only be captured in a continuous time variable. We therefore include *Time* in the next specification, the results of which are shown in column four of Table 5. The coefficient on the *Time* variable is positive but statistically insignificant, and its inclusion actually slightly increases the *Working Conditions*

[13] Excluding *Firm Size* had the largest effect among these, reducing the *Working Conditions* coefficient to 0.85 (still statistically significant at 1%) and having almost no effect on the other coefficients.

coefficient. Wages and working conditions may be improving together over time, but taking out the time effect does not reduce the strength of the wage-working conditions relationship.

Given the large gap in the dataset (explained briefly in section 3.1), we suspect that there may be differences between the factories present in the first wave of visits in 2001-2002 and the factories that entered the program when the new "IMS" system was launched in late 2005. Columns five and six of Table 4 therefore estimate Equation **(2)** separately for these two groups of factories. While the *Working Conditions* coefficient remains virtually unchanged, these two columns reveal some interesting differences between these two groups of factories. The effect of the amount of time between visits is zero in the original factories, but negative and statistically significant (as expected) among the IMS factories. The number of visits has the expected positive effect among the original factories, but its coefficient is relatively large, negative, and statistically significant for the IMS factories. [14] Surprisingly, given these other differences between the two groups, the *Working Conditions* coefficient is almost the same for each sample as for the sample as a whole. Combining these two groups appears not to mask any hidden negative relationship between wages and working conditions.

The aggregated *Working Conditions* variable, generated as an index of 130 different individual measures of working conditions, conceals a lot of variation among different types of working conditions. Another interesting test of the results' robustness, therefore, is to disaggregate the *Working Conditions* variable into six broad categories (those shown in Table 1 and Figure 2). Replacing the aggregated *Working Conditions* variable in Equation **(2)** with these

[14] This contrast suggests a potentially nonlinear relationship between visits and wage compliance over time, since the original factories are earlier in the sample, but adding a visits-squared term (results not shown) yielded statistically insignificant coefficients on the *Visit* variables and had no effect on the *Working Conditions* coefficient. It seems that, despite the differences between these two groups of factories, the specification for the sample as a whole does not improve with changes to the way the *Visit* variable is specified. We also generated a dummy variable equal to one if the factory was one of the original factories, included that in the whole-sample regression, and also included that dummy interacted with the *Visit* variable. The *Working Conditions* coefficient was unaffected, and the other variables' coefficients were statistically insignificant.

six disaggregated variables yields Equation **(3)** below, the results for which are shown in column one of Table 6.

$$\Delta Wages_{it} = ß_0 + ß_1(\Delta OSH1_{it}) + ß_2(\Delta OSH2_{it}) + ß_3(\Delta Benefits_{it}) + ß_4(\Delta Core/WT_{it}) + ß_5(\Delta Internal\ Relations_{it}) + ß_6(\Delta FACB_{it}) + ß_7(\Delta Firm\ Size_{it}) + ß_8(Firm\ Age_{it}) + ß_9(\Delta\%Union_{it}) + ß_{10}(Visit_{it}) + ß_{11}(\Delta Time_{it}) + \varepsilon_{it} \quad \textbf{(3)}$$

With the disaggregated working conditions variables, the control variables remain insignificant and of the same signs as in the previous specifications, and the R-squared value increases slightly to 0.096. Three of the six working conditions variables – *Benefits, Internal Relations,* and *Core Standards/Working Time* – carry statistically significant and positive coefficients, and only one (statistically insignificant) negative coefficient emerges, on one of the two *Occupational Safety and Health (OSH)* variables. The significant coefficients are all around 0.24, meaning that a ten percentage point change in each of these variables relates to about a 2.4 percentage point change in wage compliance. These results are consistent with the aggregated results shown in Table 5, and also strongly suggest that wages and working conditions are at least nonnegatively (and often positively) related.

To verify these results' robustness, we ran all of the specification and sample changes listed above (for the aggregated *Working Conditions* variable) with this group of disaggregated variables, and the results are shown in columns two through six of Table 6. As with the aggregated *Working Conditions* variable, the specification changes yielded little change in the coefficients, especially the statistically significant ones. The most striking difference is the contrast between the results in the original factories and the IMS factories; only one of the measures (*Benefits*) is statistically significant at the 10% level in the original factories, while *Internal Relations* and *Core Standards/Working Time* are both statistically significant in the IMS

factories. The coefficients' positive signs generally remain throughout these specifications,[15] lending further support to the efficiency wages theory of firm behavior in these factories.

6. Foreign Ownership and the Wage-Working Conditions Relationship

6.1 Initial Results

To determine how wages and working conditions are differently related in foreign-owned factories than in domestically owned ones, we add an FDI dummy variable and that dummy interacted with *Working Conditions (WC)* to Equation **(2)** to get Equation **(4)** below:

$$\Delta Wages_{it} = ß_0 + ß_1(\Delta WC_{it}) + ß_2(\Delta Firm\ Size_{it}) + ß_3(Firm\ Age_{it}) + ß_4(\Delta\%Union_{it}) + ß_5(Visit_{it}) + ß_6(\Delta Time_{it}) + ß_7(FDI_{it}) + ß_8(FDI_{it}*\Delta WC_{it}) + \varepsilon_{it} \qquad \textbf{(4)}$$

With this specification, the coefficient on the *Working Conditions* variable represents the relationship between wages and working conditions in domestically owned firms, while the interaction term's coefficient represents the marginal impact of foreign ownership on that relationship. Adding $ß_1$ and $ß_8$, therefore, gives the total impact of working conditions on wages in foreign-owned factories. Initial results for Equation **(4),** shown in the first column of Table 7, look very similar to those in Table 5. R-squared remains low at 0.084, and most controls' coefficients remain statistically insignificant and small. Interestingly, the *Working Conditions* variable maintains a positive and statistically significant coefficient, and its magnitude nearly triples, indicating that the positive relationship between wages and working conditions is stronger in the domestically owned factories than in the sample as a whole. In these domestically owned factories, when *Working Conditions* improve by ten percentage points, wage compliance improves by about 24 percentage points, a very large effect.

[15] Other than the tiny and statistically insignificant negative sign that appears on the *OSH* measure that had carried a positive coefficient in the other specifications.

The negative coefficient on the *FDI x Working Conditions* interaction term, meanwhile, suggests that marginal impact of foreign ownership on the wage-working conditions relationship is negative. The total effect of working conditions on wages in foreign-owned factories is positive and statistically significant at the 1% level, but the effect is much smaller (an 8-percentage-point increase in wages for a 10-percentage-point improvement in working conditions) than that in domestically owned factories. Given that compliance on both wages and working conditions is higher in foreign-owned firms, the smaller positive relationship in these firms is unsurprising; beyond some high level of compliance, additional improvements in wage and/or working conditions compliance become less feasible and the marginal effort returns on these improvements may diminish.

6.2 Robustness

Columns two through six of Table 7 show results for a variety of different specifications and sample changes, most of which are identical to those reported in section four. As before, the *Working Conditions* coefficient changes little with the varying specifications, and the FDI and interaction coefficients generally remain fairly stable as well. Columns two and three of Table 7 present results with the unionization variable excluded (which increases the sample but has almost no effect on the magnitude or significance of the coefficients of interest) and the factories of unknown ownership excluded (which reduces the sample but also has very little effect on the coefficients).[16] The pattern of positive wage-working conditions relationships in all firms (but a stronger effect of working conditions on wages in domestically owned factories) remains through these specifications.

[16] We had reason to believe that these six factories of unknown ownership were foreign-owned, but because we could not be certain, their exclusion was warranted as a test of robustness.

The positive relationship remains when we control for the monitors that visited the factory (column four of Table 7), but the marginal negative effect of foreign ownership becomes statistically insignificant in this specification. These results correspond interestingly with the results shown in columns five and six of Table 7, in which we split the sample into the original and IMS factories. In the IMS factories, the statistical significance of the foreign ownership impact on the wage-working conditions relationship disappears, but the impact of foreign ownership is much stronger in the original factories. Because there was incomplete overlap in monitors between the two time periods, some monitors are present only for the first set of visits to the original factories, so the monitor controls in the results presented in column two of Table 7 could be capturing the same effect as the contrast between columns four and five – a distinct marginal effect of foreign ownership between these two samples. These results continue to confirm the positive wage-working conditions relationship in both domestically and foreign-owned firms, but present a potential caveat to the conclusion that foreign ownership reduces the strength of the wage-working conditions relationship in these firms.

6.3 Disaggregated Working Conditions and FDI

The results presented in Table 7 focus on working conditions and FDI variables that are both aggregated for simplicity, but given the detailed data we have available, we can also disaggregate these variables into their components. First, as shown at the end of section 5.3, we can disaggregate the *Working Conditions* variable into six groups of working conditions. Replacing the *Working Conditions* variable with these six smaller variables and interacting each of these smaller variables with FDI yields the results shown in Table 8. The results serve to clarify somewhat the difference between the wage-working conditions relationship in domestically owned factories (the stand-alone working conditions coefficients in the first

column) and the relationship in foreign-owned factories (the total effect coefficients in the third column). In domestically owned factories, *Internal Relations* and *Core Standards/Working Time* are significantly positively related to wages, while we find some evidence of compensating differentials in the statistically significant negative coefficient on *FACB (*Freedom of Association and Collective Bargaining). In foreign-owned factories, we find no evidence of compensating differentials, but we find weak positive relationships of wages with *Core Standards/Working Time* and *FACB.* Consistent with the results with the aggregated *Working Conditions* variable, we generally find foreign ownership to weaken but not eliminate the positive effect between wages and working conditions.

The differing effect of *FACB* in the two groups is an interesting exception to this general finding, especially because it is the only working conditions measure for which we find statistically significant evidence of a compensating differential relationship. Surprisingly, given the consistently weaker positive wage-working conditions relationship in foreign-owned firms, we find this isolated evidence of compensating differentials in *domestically owned* firms. In this case, foreign ownership has a large positive impact on the wage-working conditions relationship, an impact large enough to produce a total working conditions effect that is statistically significant and positive. This interesting result certainly warrants further exploration of the relationship between Freedom of Association/Collective Bargaining and wages, but we will leave this task for future research.

The impact of FDI on wages might vary by the source of the FDI in addition to varying by the category of working conditions considered. The results in Table 9 explore this possibility by grouping the foreign-owned factories into Chinese, Other Asian, Western, and Unknown. As before, working conditions (measured again as the aggregate *Working Conditions* variable) are

significantly positively related to wage compliance in domestically owned factories. The interaction term coefficients, meanwhile, illustrate that the effect of foreign ownership on the wage-working conditions relationship differs by the source country. Interestingly, Chinese-owned firms are the only ones to carry the statistically significant positive wage-working conditions relationship that we have found throughout this paper, while Western-owned firms are the only ones to exhibit a negative (though statistically insignificant) total effect of working conditions on wages. These results, too, lead to more questions about the source of the foreign ownership effect on the wage-working conditions relationship, questions that may be addressed in future research.

7. Conclusion

We have shown, first of all, that compliance on both wages and working conditions is higher in foreign-owned factories, contradicting the compensating differentials explanation for foreign ownership wage premiums. Furthermore, in this sample of Cambodian exporting garment factories as a whole, wages and working conditions are positively related, supporting an efficiency wages explanation of why some firms pay higher wages than others and indicating that workers are made better off overall by working in factories that pay them higher wages. This positive wage-working conditions relationship, while smaller in foreign-owned firms, also suggests that both domestically and foreign-owned firms in this sample have responded to a positive working conditions shock by increasing the worker compensation package overall, thereby shifting their effort curves out. This finding implies that programs like Better Factories Cambodia can push for improvements in working conditions without inducing a reduction in wage compliance, so such programs might increase overall worker welfare.

This body of research, however, is by no means complete. We present only a single-sector, single-country, single-dimension case study of globalization's effect on the wage-working conditions relationship. As the ILO's Better Work program extends the Better Factories Cambodia model to other developing countries, further research can address this question on a multi-country scale across sectors and including non-exporting firms for broader applicability of results. The BFC dataset itself also contains the potential for further research to expand our understanding of the wage-working conditions relationship. First of all, the interesting findings above of differing wage-working conditions relationships between working conditions measures and source countries provides an excellent opportunity for additional understanding of this complex issue. Meanwhile, while the BFC categorizations of working conditions make the most sense in the way they affect workers, they may not accurately reflect the cost analysis in the firm (for example, Occupational Safety and Health measures are grouped together but the costs of improving these measures can vary widely). Alternate categorizations of the working conditions measures might therefore give a clearer picture of the wage-working conditions relationship and how it varies among different measures. Finally, assessing the pair-wise relationships between a variety of different working conditions measures with one another could also reveal more about how firms make decisions in their provision of working conditions for workers. While this sort of analysis is beyond the scope of this paper, it is well within the means of this rich dataset.

Acknowledgements

I would like to sincerely thank Raymond Robertson for his thoughtful contributions to this paper's evolution, in addition to four years of invaluable academic and life advising. There are no words generous enough to describe my gratitude for his enormously positive influence on this paper, my education, and my life. I'd also like to thank Sarah West, whose impact on this paper extends well beyond her helpful feedback. Without her advice and support over the past year, neither this paper nor I would be where we are today. Finally, thank you to Paul Glewwe and Karine Moe, whose unique perspectives and insightful comments helped me explore the topic in ways I'd never considered.

References

Aitken, Brian, Ann Harrison, and Robert E. Lipsey. 1996. Wages and Foreign Ownership: A Comparative Study of Mexico, Venezuela, and the United States. *Journal of International Economics* 40, no. 3-4:345-371.

Altonji, Joseph G., and Christina H. Paxson. 1988. Labor Supply Preferences, Hours Constraints, and Hours-Wage Trade-Offs. *Journal of Labor Economics* 6, no. 2:254-276.

Arai, Mahmood. 1994. An Empirical Analysis of Wage Dispersion and Efficiency Wages. *Scandinavian Journal of Economics* 96, no. 1:31-50.

Bernard, Andrew B., and J. B. Jensen. 1995. Exporters, Jobs, and Wages in US Manufacturing - 1976-1987. *Brookings Papers on Economic Activity.*

Brown, Charles, and James L. Medoff. 2003. Firm age and wages. *Journal of Labor Economics* 21, no. 3:677-697.

Brown, Charles. 1980. Equalizing Differences in the Labor-Market. *Quarterly Journal of Economics* 94, no. 1:113-134.

Brown, Charles, and James Medoff. 1989. The Employer Size-Wage Effect. *Journal of Political Economy* 97, no. 5:1027-1059.

Cappelli, Peter, and Keith Chauvin. 1991. An Interplant Test of the Efficiency Wage Hypothesis. *Quarterly Journal of Economics* 106, no. 3:769-787.

Cousineau, Jean-Michel, Robert Lacroix, and Anne-Marie Girard. 1992. Occupational Hazard and Wage Compensating Differentials. *Review of Economics and Statistics* 74, no. 1:166-169.

Dorman, Peter, and Paul A. Hagstrom. 1998. Wage Compensation for Dangerous Work Revisited. *Industrial and Labor Relations Review* 52, no. 1:116-135.

Duncan, Greg J., and Bertil Holmlund. 1983. Was Adam Smith Right after All? Another Test of the Theory of Compensating Wage Differentials. *Journal of Labor Economics* 1, no. 4:366-379.

Duncan, Greg J., and Stafford, Frank P. 2002 [1980]. Do Union Members Receive Compensating Wage Differentials? In *The Economics of Labor Unions. Volume 1*, edited by Alison L. Booth. Cheltenham, U.K. and Northampton, Mass.: Elgar Reference Collection. International Library of Critical Writings in Economics, vol. 147.

Fuess, Scott M., and Meghan Millea. 2002. Do Employers Pay Efficiency Wages? Evidence from Japan. *Journal of Labor Research* 23, no. 2:279-292.

Girma, Sourafel, and Holger Gorg. 2007. Evaluating the Foreign Ownership Wage Premium Using a Difference-in-Differences Matching Approach. *Journal of International Economics* 72, no. 1:97-112.

Glick, Peter, and Francois Roubaud. 2006. Export Processing Zone Expansion in Madagascar: What Are the Labour Market and Gender Impacts? *Journal of African Economies* 15, no. 4:722-756.

Goldsmith, Arthur H., Jonathan R. Veum, and William A. Darity. 2000. Working Hard for the Money? Efficiency Wages and Worker Effort. *Journal of Economic Psychology* 21, no. 4:351-385.

Konings, Jozef, and Patrick P. Walsh. 1994. Evidence of Efficiency Wage Payments in UK Firm Level Panel-Data. *Economic Journal* 104, no. 424:542-555.

Leigh, J. P. 1991. No Evidence of Compensating Wages for Occupational Fatalities. *Industrial Relations* 30, no. 3:382-395.

Lipsey, R. E. 2004. *Home- and host-country effects of foreign direct investment.* Edited by RE Baldwin, L. A. Winters. Stockholm, SWEDEN ed.

Mandel, Benjamin R. 2008. *Heterogeneous Firms and Import Quality: Evidence from Transaction-Level Prices.* September 2008: Economics Dept., University of California Davis.

Marin, Alan, and George Psacharopoulos. 1982. The Reward for Risk in the Labor-Market - Evidence from the United-Kingdom and a Reconciliation with Other Studies. *Journal of Political Economy* 90, no. 4:827-853.

McCrate, Elaine. 2005. Flexible Hours, Workplace Authority, and Compensating Wage Differentials in the US. *Feminist Economics* 11, no. 1:11-39.

McNabb, Robert. 1989. Compensating Wage Differentials: Some Evidence for Britain. *Oxford Economic Papers, N. S.* 41, no. 2:327-338.

Robertson, Raymond E., and Neak, Samsen. 2008. *The Effects of Globalization on Working Conditions: Cambodia.* Working Paper ed. World Bank.

Robertson, Raymond E., et al. 2008. *Globalization and Working Conditions: Evidence from Indonesia.* Working Paper ed. World Bank.

Robertson, Raymond E., and Trigueros-Argüello, Alvaro. 2008. *The Effects of Globalization on Working Conditions: El Salvador 1995-2005.* Working Paper ed. World Bank.

Schank, Thorsten, Claus Schnabel, and Joachim Wagner. 2007. Do Exporters Really Pay Higher Wages? First Evidence from German Linked Employer-Employee Data. *Journal of International Economics* 72, no. 1:52-74.

Sjoholm, Fredrik, and Robert E. Lipsey. 2006. Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data. *Economic Development and Cultural Change* 55, no. 1:201-221.

Table 1: Contents of Aggregated Working Conditions Variables

Wages (5)	Minimum Wage, Premium Wages for Night Work, Overtime, Holiday Work, and Work on Weekly Time Off
Working Conditions (127)	OSH1, OSH2, Benefits, Internal Relations, Core Standards and Working Time, FACB (see below)
OSH1 (34)	Occupational Health and Safety 1: Health Facilities; Water and Toilet; Temperature, Ventilation, Noise, and Lighting; Machine Safety; Safety of Operations and Workplace Motion
OSH2 (19)	Occupational Health and Safety 2: Assessment, Recording, and Reporting; Emergency Preparedness; Chemical Safety
Benefits (16)	Holiday, Annual, and Special Leave; Worker's Compensation; Maternity Leave and Benefits
Internal Relations (15)	Information about Wages, Internal Regulations, Contracts, Internal Disputes
Core Standards and Working Time (21)	Child Labor, Discrimination, Forced Labor, Discipline, Overtime, Regular Hours, Weekly Rest
FACB (22)	Freedom of Association and Collective Bargaining: Collective Agreements, Unions, Strikes, Liaison Officers, Shop Stewards

Notes: Number of questions contained in the index shown in parentheses. Listed contents of *Wages* variable are all individual questions, while listed contents of all other variables are groups of questions.

Table 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Firm Age (Months)	628	58.29	31.70	7.00	182.00
D. Firm Age	628	10.12	10.35	3.00	61.00
Firm Size (# Workers)	628	1215.81	1105.75	16.00	7512.00
Δ Firm Size	628	38.34	301.91	-1351.00	3052.00
% Union (% Workers)	628	40.64	32.17	0.00	136.16
Δ % Union	628	5.18	24.58	-102.55	102.32
Visit (#)	628	3.07	0.96	2.00	7.00
Time Difference (Days)	628	308.82	315.54	91.00	1877.00
Wage Compliance (%)	628	91.91	18.10	0.00	100.00
Δ Wage Compliance	628	2.29	16.60	-80.00	80.00
Working Conditions Compliance (%)	628	85.74	6.47	62.99	97.64
Δ Working Conditions	628	1.78	4.96	-14.17	35.43
OSH1 Compliance (%)	628	81.41	10.63	32.35	100.00
Δ OSH1	628	2.05	7.87	-26.47	73.53
OSH2 Compliance (%)	628	78.15	12.52	36.84	100.00
Δ OSH2	628	0.96	11.43	-36.84	47.37
Benefits Compliance (%)	628	89.27	9.17	50.00	100.00
Δ Benefits	628	2.33	8.14	-25.00	50.00
Worker Relations Compliance (%)	628	92.63	8.66	53.33	100.00
Δ Worker Relations	628	2.72	8.18	-26.67	40.00
Core/Working Time Compliance (%)	628	85.49	7.75	52.38	100.00
Δ Core/WT	628	1.27	8.36	-28.57	33.33
FACB Compliance (%)	628	91.93	5.11	72.73	100.00
Δ FACB	628	1.53	6.17	-18.18	36.36
West FDI	628	0.03	0.16	0.00	1.00
China FDI	628	0.65	0.48	0.00	1.00
Asia FDI	628	0.25	0.43	0.00	1.00
Unknown FDI	628	0.02	0.15	0.00	1.00
All FDI	628	0.95	0.22	0.00	1.00

Table 3: Wage and Working Conditions Compliance by FDI

Variable	Obs	Mean (All Visits)	Std. Dev.	Min	Max	Mean (Visit 1)	Mean (Visit 4-5)
Wage Compliance (%)	628	91.91	18.10	0.00	100.00	83.39	95.10
Wage Compliance (%) in Domestic Factories	61	80.00	30.11	0.00	100.00	74.00	86.67
Wage Compliance (%) in All FDI	596	92.52	16.91	0.00	100.00	84.07	95.43
Wage Compliance (%) in West FDI	17	94.12	11.76	60.00	100.00	84.00	100.00
Wage Compliance (%) in China FDI	407	91.20	19.00	0.00	100.00	82.78	93.88
Wage Compliance (%) in Other Asia FDI	157	95.54	10.77	20.00	100.00	87.5	99.00
Wage Compliance (%) in Unknown FDI	15	94.67	9.15	80.00	100.00	83.33	97.50
Δ Wage Compliance	628	2.29	16.60	-80.00	80.00	5.56	1.51
Δ Wage Compliance in Domestic Factories	41	2.93	29.85	-80.00	100.00	3.16	0.00
Δ Wage Compliance in All FDI	596	2.45	15.94	-80.00	80.00	5.72	1.57
Δ Wage Compliance in West FDI	17	2.35	6.64	0.00	20.00	4.00	5.00
Δ Wage Compliance in China FDI	407	2.16	17.06	-80.00	80.00	5.64	0.63
Δ Wage Compliance in Other Asia FDI	157	3.06	13.43	-20.00	80.00	5.56	3.73
Δ Wage Compliance in Unknown FDI	15	4.00	17.24	-20.00	60.00	13.33	2.50
Working Conditions Compliance (%)	628	85.74	6.47	62.99	97.64	80.16	87.32
Working Conditions Compliance (%) in Domestic Factories	61	80.16	7.89	64.57	93.70	76.97	83.99
Working Conditions Compliance (%) in All FDI	596	85.98	6.28	62.99	97.64	80.39	87.45
Working Conditions Compliance (%) in West FDI	17	86.48	5.75	77.95	96.85	81.81	88.78
Working Conditions Compliance (%) in China FDI	407	85.27	6.50	62.99	97.64	79.84	86.81
Working Conditions Compliance (%) in Other Asia FDI	157	87.57	5.59	72.44	96.85	81.71	89.07
Working Conditions Compliance (%) in Unknown FDI	15	87.93	4.27	80.31	92.91	79.27	87.50
Δ Working Conditions	628	1.78	4.96	-14.17	35.43	3.50	0.69
Δ Working Conditions in Domestic Factories	41	2.36	5.66	-12.60	14.17	2.65	1.49
Δ Working Conditions in All FDI	596	1.69	4.87	-14.17	35.43	3.55	0.66
Δ Working Conditions in West FDI	17	2.04	4.32	-7.87	11.02	3.46	1.18
Δ Working Conditions in China FDI	407	1.65	5.14	-14.17	35.43	3.20	0.62
Δ Working Conditions in Other Asia FDI	157	1.95	4.43	-7.87	15.75	4.20	0.72
Δ Working Conditions in Unknown FDI	15	3.25	6.86	-3.94	19.69	7.22	0.59

Table 4: Regression Results – FDI and Wages/Working Conditions

	Wages	Working Conditions
FDI	9.248 (5.605)*	4.258 (1.507)***
Firm Age (Months)	0.101 (0.026)***	0.079 (0.009)***
Firm Size (# Workers)	0.002 (0.001)**	0.001 (0.000)***
Unionization (% Workers)	0.037 (0.023)	0.009 (0.008)
Constant	72.218 (5.500)***	74.331 (1.536)***
Observations	959	959
Factories	294	294

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq. 1 with wages (column 1) and working conditions (column 2) as the dependent variables.

Table 5: Regression Results – Aggregated Working Conditions

	1	2	3	4	5	6
Firm Age (Months)	0.007 (0.021)	0.020 (0.021)	-0.011 (0.024)	0.010 (0.022)	-0.030 (0.054)	0.039 (0.028)
Δ Firm Size (# Workers)	0.004 (0.003)	0.004 (0.003)	0.003 (0.002)	0.004 (0.003)	0.008 (0.006)	0.001 (0.003)
Δ Unionization (% Workers)	0.041 (0.033)	0.041 (0.033)		0.042 (0.034)	0.034 (0.077)	0.040 (0.036)
Visit #	-0.397 (0.722)	-1.176 (0.774)	-0.120 (0.714)	-0.647 (0.859)	2.086 (1.674)	-1.885 (0.887)**
Time Between Visits	-0.002 (0.004)	-0.007 (0.005)	0.001 (0.003)	0.000 (0.007)	0.000 (0.006)	-0.030 (0.011)***
Δ Working Conditions	0.872 (0.203)***	0.896 (0.213)***	0.792 (0.170)***	0.877 (0.206)***	0.882 (0.390)**	0.860 (0.235)***
Time (Years)				0.678 (1.551)		
Constant	1.498 (2.056)	-5.684 (29.097)	1.574 (1.942)	-1,359.91 (3112.736)	-3.096 (8.203)	9.527 (3.494)***
Observations	628	628	788	628	170	458
Factories	284	284	295	284	74	210

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq.2 (column 1), Eq. 2 with monitor controls (2), Eq. 2 with unionization excluded (3), Eq. 2 with a continuous time variable (4), Eq. 2 for original factories only (5), and Eq. 2 excluding the original factories (6).

Table 6: Regression Results – Disaggregated Working Conditions Variables

	1	2	3	4	5	6
Firm Age (Months)	0.005 (0.021)	0.018 (0.022)	-0.008 (0.024)	0.007 (0.022)	-0.028 (0.052)	0.036 (0.027)
Δ Firm Size (# Workers)	0.003 (0.002)	0.004 (0.003)	0.003 (0.002)	0.003 (0.002)	0.008 (0.005)	0.001 (0.003)
Δ Unionization (% Workers)	0.045 (0.032)	0.047 (0.031)		0.046 (0.033)	0.044 (0.069)	0.044 (0.036)
Visit #	-0.161 (0.722)	-0.91 (0.781)	0.043 (0.716)	-0.388 (0.853)	1.974 (1.642)	-1.423 (0.894)
Time Between Visits	-0.002 (0.004)	-0.006 (0.005)	0.001 (0.003)	0.001 (0.007)	-0.001 (0.007)	-0.031 (0.011)***
Δ OSH1	0.130 (0.148)	0.185 (0.151)	0.071 (0.117)	0.132 (0.149)	-0.042 (0.285)	0.203 (0.163)
Δ OSH2	-0.028 (0.065)	-0.057 (0.064)	-0.022 (0.062)	-0.027 (0.065)	0.033 (0.131)	-0.033 (0.073)
Δ Benefits	0.229 (0.106)**	0.246 (0.105)**	0.309 (0.094)***	0.230 (0.106)**	0.407 (0.224)*	0.143 (0.110)
Δ Internal Relations	0.247 (0.109)**	0.223 (0.106)**	0.172 (0.104)*	0.247 (0.110)**	0.260 (0.244)	0.238 (0.114)**
Δ Core Standards /Working Time	0.242 (0.086)***	0.255 (0.087)***	0.220 (0.074)***	0.244 (0.086)***	0.092 (0.198)	0.292 (0.088)***
Δ FACB	0.146 (0.139)	0.147 (0.133)	0.163 (0.117)	0.145 (0.140)	0.242 (0.280)	0.077 (0.133)
Time (Years)				0.612 (1.544)		
Constant	0.563 (2.053)	-0.625 (26.705)	0.691 (1.946)	-1,226.78 (3098.433)	-3.107 (7.996)	8.653 (3.587)**
Observations	628	628	788	628	170	458
Number of Code	284	284	295	284	74	210

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq. 3 (column 1), Eq. 3 with monitor controls (2), Eq. 3 with unionization excluded (3), Eq. 3 with a continuous time variable (4), Eq. 3 for original factories only (5), and Eq. 3 excluding the original factories (6).

Table 7: Regression Results – Aggregated FDI and Working Conditions

	1	2	3	4	5	6
Firm Age (Months)	0.007 (0.021)	-0.008 (0.024)	0.014 (0.023)	0.019 (0.021)	-0.014 (0.049)	0.039 (0.028)
Δ Firm Size (# Workers)	0.003 (0.003)	0.003 (0.002)	0.004 (0.003)	0.004 (0.003)	0.007 (0.005)	0.001 (0.003)
Δ Unionization (% Workers)	0.039 (0.033)		0.038 (0.033)	0.040 (0.032)	0.054 (0.070)	0.039 (0.036)
Visit #	-0.479 (0.717)	-0.220 (0.711)	-0.659 (0.729)	-1.177 (0.775)	1.352 (1.643)	-1.885 (0.889)**
Time Between Visits	-0.002 (0.004)	0.002 (0.003)	-0.003 (0.004)	-0.006 (0.005)	0.001 (0.006)	-0.031 (0.012)***
Δ Working Conditions	2.314 (0.863)***	2.110 (0.711)***	2.318 (0.856)***	2.172 (0.967)**	5.092 (1.949)***	1.197 (0.575)**
FDI	5.425 (4.080)	3.573 (3.763)	5.288 (4.013)	5.061 (3.954)	20.181 (13.276)	-0.237 (2.814)
FDI*Δ Working Conditions	-1.509 (0.871)*	-1.405 (0.732)*	-1.528 (0.867)*	-1.339 (0.981)	-4.432 (1.950)**	-0.350 (0.624)
Total Effect of WC in FDI	0.804 (0.206)***	0.705 (0.177)***	0.790 (0.211)***	0.833 (0.218)***	0.660 (0.343)*	0.847 (0.245)***
Constant	-3.605 (4.160)	-1.832 (3.987)	-3.039 (4.092)	-10.050 (29.535)	-22.191 (15.377)	9.927 (4.715)**
Observations	628	788	613	628	170	458
Factories	284	295	278	284	74	210

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq.4 (column 1), Eq. 4 with unionization excluded (2), Eq. 4 excluding the six factories of unknown ownership (otherwise categorized as FDI) (3), Eq. 4 with monitor controls (4), Eq. 4 for original factories only (5), and Eq. 4 excluding the original factories (6).

Table 8: Regression Results - Disaggregated Working Conditions

Type of WC	Δ Working Conditions	ΔWC*FDI	Total Effect of WC in FDI
OSH1	-0.004 (0.348)	0.184 (0.379)	0.180 (0.155)
OSH2	0.014 (0.163)	-0.057 (0.178)	-0.043 (0.069)
Benefits	0.717 (0.459)	-1.247 (0.337)***	0.137 (0.100)
Internal Relations	1.384 (0.324)***	-0.565 (0.469)	0.152 (0.102)
Core Standards/ Working Time	1.196 (0.491)**	-0.969 (0.499)*	0.227 (0.085)***
FACB	-1.994 (0.537)***	2.231 (0.540)***	0.237 (0.130)*

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq. 3 with disaggregated working conditions variables. Coefficients for controls not shown due to their similarity to those presented in Table 6.

Table 9: Regression Results - Disaggregated FDI

Ownership	Δ Working Conditions	ΔWC*FDI	Total Effect of WC in FDI
West FDI	2.314 (0.867)***	-2.651 (0.956)***	-0.337 (0.413)
China FDI	2.314 (0.867)***	-1.376 (0.889)	0.939 (0.251)***
Other Asian FDI	2.314 (0.867)***	-1.996 (0.886)**	0.318 (0.256)
Unknown FDI	2.314 (0.867)***	-0.944 (1.386)	1.370 (1.105)
Domestic Factories	2.314 (0.867)***		

* significant at 10%; ** significant at 5%; *** significant at 1%

Robust standard errors in parentheses. Regression results for Eq. 3 with disaggregated FDI variables. Coefficients for controls not shown due to their similarity to those presented in Table 6.

Figure 1

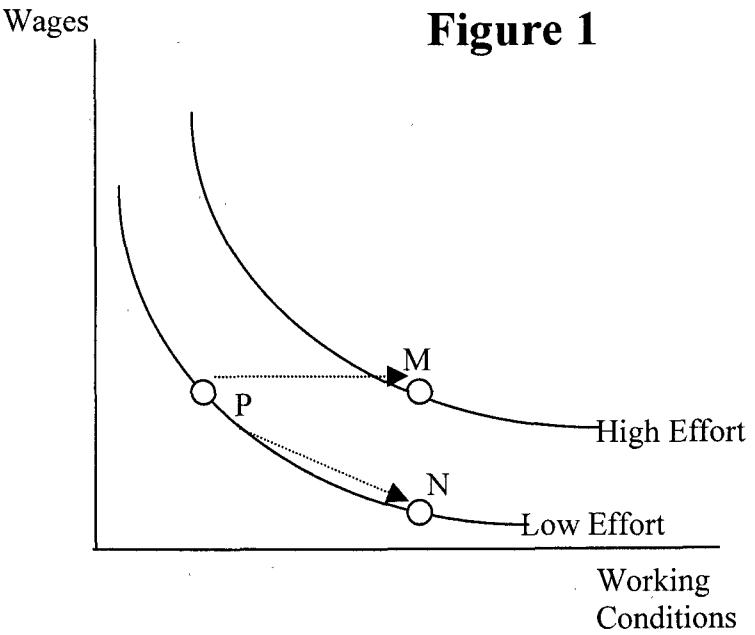
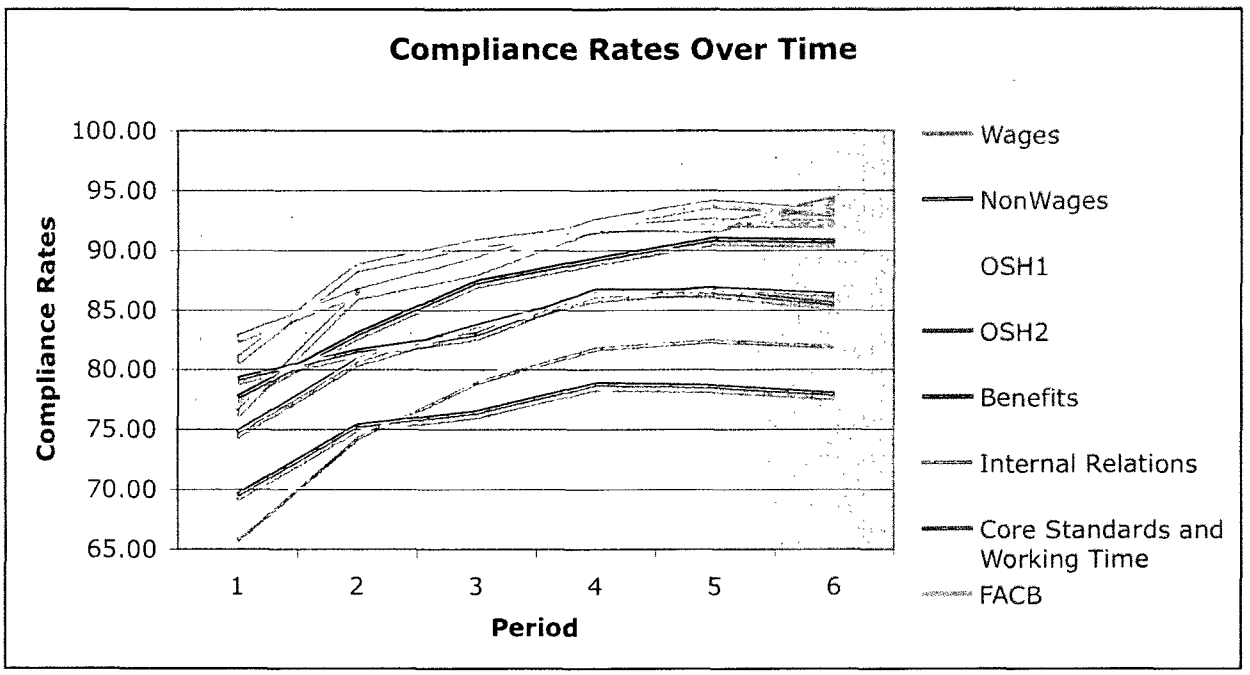


Figure 2



Notes: Compliance rates shown are means across factories by period. Periods are defined as follows.
Pd1: 06/2001-10/2002 **Pd2:** 12/2005-07/2006 **Pd3:** 08/2006-01/2007
Pd4: 02/2007-07/2007 **Pd5:** 08/2007-12/2007 **Pd6:** 01/2008-07/2008

Appendix A: Wage and Working Conditions Survey Questions

Category	SubCategory	Q #	IMS Question	Original Question
Benefits	Compensation for Accidents/ Illnesses	35300	(212. Does management compensate workers correctly for work-related accidents and illnesses?) What types of compensation owed to workers has management failed to pay correctly?	Do workers receive any of the following forms of compensation for work related accidents/illnesses?
Benefits	Compensation for Accidents/ Illnesses	35302	costs for medication, treatment and hospitalization	costs for medical care and hospitalisation
Benefits	Compensation for Accidents/ Illnesses	35303	annuity for permanently disabled workers (20% or more disabled)	an annuity for fatal accidents or permanent disability to the worker or his/her beneficiaries
Benefits	Compensation for Accidents/ Illnesses	35304	supplementary compensation for permanently disabled workers who require constant care	supplementary compensation for permanently disabled workers who require constant care
Benefits	Compensation for Accidents/ Illnesses	35305	funeral costs	costs for funerals and survivors' pension
Benefits	Holidays/Annual Leave/Special Leave	9400	Work on holidays is not:	(20a. Are workers aware of their official holidays as determined by MOSALVY? 20b. If yes, do they work on these days?)
Benefits	Holidays/Annual Leave/Special Leave	9401	voluntary	If yes, have they voluntarily agreed to do so?
Benefits	Holidays/Annual Leave/Special Leave	10300	Does management post the list of public holidays in the factory?	Are workers aware of their official holidays as determined by MOSALVY?
Benefits	Holidays/Annual Leave/Special Leave	10400	Does management give workers who have worked one year or more any annual leave at all (paid or unpaid) or any annual leave compensation?	Is paid annual leave given? (Art. 166)
Benefits	Holidays/Annual Leave/Special Leave	10500	Does management give workers at least 18 days of paid annual leave each year?	If yes, does this amount to one and a half days per month for continuous service?
Benefits	Holidays/Annual Leave/Special Leave	11100	Do workers get 7 days of paid special leave?	What is the maximum amount of special leave days a worker can take per year?
Benefits	Holidays/Annual Leave/Special Leave	11600	Is the annual leave deducted only from the same year during which the worker took special leave?	If the worker has taken all his/her annual leave, does the employer deduct the special leave taken from the workers' annual leave for the next year?
Benefits	Maternity Benefits	12700	Do women workers get at least 90 days of maternity leave?	Do women workers receive maternity leave of 90 days? (Art. 182)
Benefits	Maternity Benefits	12800	Do women workers who have worked for more than one year get paid for maternity leave?	Have workers that receive no wages during maternity leave been inservice for a period of one uninterrupted year?

Benefits	Maternity Benefits	13000	Can women do light work for two months after returning from maternity leave?	Do women do light work for a period of two months after their maternity leave?
Benefits	Maternity Benefits	13200	Does management give workers one hour of paid time off for breast-feeding?	Is time-off for breastfeeding provided for workers that have given birth less than one year ago?
Benefits	Maternity Benefits	13600	Does management pay the childcare costs of women employees?	If there is no day care centre for children older than 18 months, does the employer pay female workers for the charges for placing their children a day care centre?
Benefits	Maternity Benefits	34900	Do women receive the proper pay/benefits for maternity leave?	Do women receive the proper pay/benefits for maternity leave?
Core Standards and Working Time	Child Labor	28800	Have monitors verified the employment of workers below age 15?	Is there any indication of employment of children below the age of 12?
Core Standards and Working Time	Child Labor	28800		Is there any indication of employment of children between the ages of 12 and 15?
Core Standards and Working Time	Child Labor	29100	Does management keep a register of workers who are under age 18?	Does the employer keep a register of employed children below the age of 18?
Core Standards and Working Time	Discipline/ Management Misconduct	19300	Does management, including line supervisors, treat workers with respect?	Is there evidence of indecent behaviour by employers/managers?
Core Standards and Working Time	Discipline/ Management Misconduct	34701	(70. Does management make any unauthorized deductions from workers' wages?) What does management deduct? disciplinary fines	What deductions are made from wages? Fines for misconduct/discipline (Art. 28)
Core Standards and Working Time	Discipline/ Management Misconduct	44700	Are workers subject to unwelcome conduct of a sexual nature (physical contact, spoken words, or conduct that creates an intimidating or humiliating work environment)?	Is there evidence of sexual harassment?
Core Standards and Working Time	Discrimination	28100	Does management dismiss pregnant workers or force them to resign?	Is there evidence that women have been fired for becoming pregnant?
Core Standards and Working Time	Discrimination	28400	Does management discriminate against workers during hiring, employment, or termination based on their race, colour, sex, religion, creed, ancestry, social origin, or political opinion?	Is there any indication that any worker has suffered disadvantages because of his/her race, colour, sex, creed, religion, political opinion, birth, national extraction, or social origin: at the time of recruitment? During

				employment? At termination of employment?
Core Standards and Working Time	Discrimination	44300	Does management dismiss workers or change their employment status or seniority during maternity leave?	Have women been fired during maternity leave or at a date when the end
Core Standards and Working Time	Forced Labor	28500	Is there any evidence of forced (involuntary) labour?	Is there any evidence of work being undertaken: (see IMS 361 below)
Core Standards and Working Time	Forced Labor	36100	In what form is forced labour is occurring?	Is there any evidence of work being undertaken:
Core Standards and Working Time	Forced Labor	36105	labour as punishment for holding views different from mainstream political thought	as punishment for holding views different from management?
Core Standards and Working Time	Forced Labor	36106	labour as a means of labour discipline	as a means of labour discipline?
Core Standards and Working Time	Overtime	8500	Is overtime voluntary, exceptional, and limited to 2 hours per day?	
Core Standards and Working Time	Overtime	8600	Overtime is not:	
Core Standards and Working Time	Overtime	8601	voluntary	If yes, have workers voluntarily agreed to do so?
Core Standards and Working Time	Overtime	8602	exceptional	If yes, is this for exceptional and urgent jobs?
Core Standards and Working Time	Overtime	8603	limited to 2 hours per day	If yes, on average how many hours per week?
Core Standards and	Overtime	8900	Does management get permission from the Labour Inspector before workers work	if yes, has the employer requested MOSALVY for such overtime to be taken?

Working Time			overtime?	
Core Standards and Working Time	Overtime	10200	Does management provide transportation or a place to sleep for workers who finish work between 22:00 and 05:00?	If yes, are workers that work anywhere between 2200 and 0500 provided with a place to sleep when they finish?
Core Standards and Working Time	Overtime	10200		If no, are these workers provide with transportation when they finish?
Core Standards and Working Time	Regular Hours/Weekly Rest	7600	Are normal working hours more than 8 hours per day, 6 days per week?	What are the normal hours of work? (Art.137)
Core Standards and Working Time	Regular Hours/Weekly Rest	7700	Does management give workers at least 24 consecutive hours off per week?	Is there a weekly rest break of at least 24 consecutive hours?
Core Standards and Working Time	Regular Hours/Weekly Rest	8000	Has management obtained the required authorizations from the labour ministry? (For rotating weekly rest days)	(Has weekly time off ever been suspended?) If yes, and in case of rest by rotating staff, have the necessary authorisations been obtained?
Core Standards and Working Time	Regular Hours/Weekly Rest	8100	Does management keep an up-to-date list showing each worker's schedule for weekly time off?	If yes, and in case of rest by rotating staff, is a special list indicating the names of workers and their time off being kept and updated?
Core Standards and Working Time	Regular Hours/Weekly Rest	9900	Does management get permission from the Labour Inspector before suspending the weekly break?	(19a. Has weekly time off ever been suspended?) If yes, is the required authorisation obtained prior to suspension?
FACB	Collective Agreements	17400	If there is no collective agreement, did the parties inform the labour inspector about the collective dispute(s), so the dispute(s) could be conciliated?	If yes, but there is no collective agreement, did the parties notify the labour inspector for conciliation?
FACB	Collective Agreements	19600	Is the collective agreement at least as good for workers as the Labour Law?	If yes, how do the provisions compare with the Labour Code?
FACB	Collective Agreements	19900	Has management registered the collective agreement with the labour ministry?	If yes, has it been properly registered (Art. 4 Prakas 197/98)
FACB	Collective Agreements	20100	Has management posted the collective agreement in the workplace?	If yes, has the registered CA been posted throughout the establishment?
FACB	Liaison Officer	16600	Has management appointed a liaison officer?	Has an independent and neutral liaison officer been appointed/recruited by the employer? (SARACHOR NO. 21/SRC/MOSALVY, 1999)

FACB	Liaison Officer	16700	Did management consult with workers before appointing the liaison officer?	If yes, were workers' consulted prior to the appointment?
FACB	Liaison Officer	16800	Did management inform workers about the appointment of the liaison officer?	If yes, has the appointment been announced to the workers?
FACB	Liaison Officer	16900	Has management notified the labour ministry about the appointment of the liaison officer?	If yes, has MOSALVY been notified of the appointment?
FACB	Liaison Officer	17000	Do workers have easy access to the liaison officer?	If yes, do workers have easy access to the liaison officer?
FACB	Shop Stewards	16100	Did the (last) election for shop stewards comply with all legal requirements?	
FACB	Shop Stewards	16300	Does management provide the shop stewards with everything required?	Has the employer provided the shop stewards with an office, meeting room, working materials and poster-displaying site?
FACB	Shop Stewards	16300		Does the employer allow each shop steward two hours per week to perform his/her task while maintaining normal wages and benefits?
FACB	Shop Stewards	16400	Does management get permission from the labour ministry before dismissing shop stewards?	Have any shop stewards or candidates for shop stewards been dismissed from his/her work/function (a) from the employer (from his/her work)?
FACB	Shop Stewards	16400		Was this authorized by the labour inspector?
FACB	Shop Stewards	16500	Have the shop stewards been consulted and given their written opinion on redundancy?	Have the shop stewards been consulted and given their written opinion on redundancy? (Art. 284)
FACB	Strikes	43100	Did management punish any workers for participating in the strike?	Did the employer impose any sanctions on workers participating in any strike? (A. 333)
FACB	Strikes	43400	Did management reinstate all workers after the strike?	Were all workers reinstated in their jobs at the end of a strike?
FACB	Strikes	43600	Did management pay the striking workers' wages during the strike?	If yes, did the employer pay the wages of the strikers for the duration of the strike?
FACB	Unions	30400	Can workers freely form and join trade unions of their choice?	Is there any indication that workers are prevented from forming or joining a trade union of their own choosing? (C. 87/98)
FACB	Unions	30500	Has management discriminated against any worker because of the worker's union membership or union activities?	Is there any indication that any worker has suffered disadvantages because of his/herunion membership or union activities: (see IMS 364 below)

FACB	Unions	38900	Does management interfere with workers or unions when they draw up their constitutions and rules, hold elections, or organize their activities, administration or finances?	Have workers/trade unions been prevented from: (see IMS 390 below)
FACB	Unions	41500	Are workers free not to join the union(s)?	Is there any indication that workers are threatened/coerced to join a trade union?
FACB	Unions	41600	Has management taken steps to bring the union(s) under its control?	Is there any indication that the employer has done things to bring the union under the employers' control or domination?
FACB	Unions	41700	Is any worker's job dependent on the worker not joining a union?	Is there any indication that the workers' job is dependent on not joining a trade union?
Internal Relations	Contracts/Hiring	1600	Do workers have to pay someone to get a job?	Is there any indication that workers had to pay someone to
Internal Relations	Contracts/Hiring	2200	Do the employment contracts specify the terms and conditions of employment?	If yes, does it stipulate the terms of employment?
Internal Relations	Contracts/Hiring	34706	(70. Does management make any unauthorized deductions from workers' wages?) What does management deduct? the cost of a bond or guarantee to get or keep the worker's job	What deductions are made from wages? Job placement fee
Internal Relations	Disputes	17700	Has management implemented the conciliation agreement?	If yes, was the agreement implemented?
Internal Relations	Disputes	18300	Did management implement the arbitration award?	If yes, was the award implemented immediately?
Internal Relations	Disputes	19000	Did management implement conciliation agreements (if any)?	If yes, was the agreement implemented?
Internal Relations	Information about Wages	5100	Has management posted minimum wage information in the workplace?	Has the minimum wage been posted in the workplace and in payment and recruitment offices? (Art. 109)
Internal Relations	Information about Wages	5300	Does management provide clearly written pay slips to workers?	Do workers get a record of wages paid to them?
Internal Relations	Information about Wages	5500	Do workers understand the calculation of wages?	If yes, do they understand the wage calculations?
Internal Relations	Internal Regulations	100	Does the factory have internal regulations?	Does the enterprise have internal regulations? (Art. 23 and Notice 9/97)
Internal Relations	Internal Regulations	200	Do the internal regulations comply with the labour law?	If yes, do they comply with the labour law?
Internal Relations	Internal Regulations	300	Were worker representatives consulted on the internal regulations when they were written or amended?	If yes, were workers consulted on the internal regulations?
Internal Relations	Internal Regulations	400	Have the internal regulations been posted in the workplace?	If yes, have internal regulations been communicated to workers?

Internal Relations	Internal Regulations	500	Are the internal regulations legible?	If yes, what language?
Internal Relations	Internal Regulations	500		If yes, are they placed in a proper and accessible place (such as work place, application room) and kept clean and legible?
Internal Relations	Internal Regulations	600	Have the internal regulations been approved by a labour inspector?	If yes, have internal regulations been signed off by a labour inspector?
OSH1	Health/First Aid	13400	Does the factory have a functioning and accessible nursing room?	Is a nursing room provided in or near the enterprise (for those enterprises employing 100 or more women, art 186)?
OSH1	Health/First Aid	22400	Are there enough properly stocked first-aid boxes in the workplace that are easily accessible to workers?)	Is a properly stocked first aid kit available?
OSH1	Health/First Aid	22500	Does management provide periodic first aid training to workers?	Is there a trained person available to provide first aid?
OSH1	Health/First Aid	22600	Does the factory have an infirmary? (if factory has less than 50 workers, tick N/A)	Does the enterprise (if employing more than 50 workers) have a permanent infirmary? (A. 242)
OSH1	Health/First Aid	22700	Does the infirmary have enough beds?	(Information was given in the comment space for question 74)
OSH1	Health/First Aid	22900	Does the infirmary have enough medicine and medical equipment?	Is the infirmary equipped to provide emergency care?
OSH1	Health/First Aid	23100	Do workers have to pay for medicine or treatment provided by the infirmary?	Is it [treatment by the infirmary] subject to an restrictions/fees?
OSH1	Machine Safety	25400	Are the machines well maintained?	Are machines regularly maintained?
OSH1	Machine Safety	25600	Are proper guards installed on all dangerous moving parts of machines and power transmission equipment? (not including needle guards)	Are proper guards attached to all dangerous moving parts of machines and power transmission equipment?
OSH1	Machine Safety	25700	Are electrical wires and switches properly installed?	Are electrical wires and switches safe and in good condition?
OSH1	Machine Safety	25800	Are electrical wires and switches well maintained?	Are electrical wires and switches regularly maintained?
OSH1	Machine Safety	26000	Are transformers or earth leakage devices used when there is a danger of shock?	Are transformers or earth leakage devices used when there is a danger of shock?
OSH1	Machine Safety	26100	Are workers trained to use machines and equipment safely?	Are workers trained in the proper/safe use of machines and equipment?
OSH1	Temperature/ Ventilation/ Noise/Light	24800	Is the workplace free of reflection and glare?	Is lighting free of reflection and glare?
OSH1	Temperature/ Ventilation/ Noise/Light	24900	Are light fittings in good condition?	Are light fittings in good condition?

OSH1	Temperature/ Ventilation/ Noise/Light	25200	Is hearing protection provided to all workers who need it?	Is hearing protection provided to all workers who need it?
OSH1	Temperature/ Ventilation/ Noise/Light	26500	Are heat levels in the factory acceptable?	What are the results of the temperature measurements taken throughout the factory premises?
OSH1	Temperature/ Ventilation/ Noise/Light	26600	Does the factory have adequate ventilation and air circulation?	Is adequate ventilation provided to all workers throughout the factory?
OSH1	Temperature/ Ventilation/ Noise/Light	26800	Are dust levels in the factory acceptable?	What are the results of the dust measurements taken throughout the factory premises?
OSH1	Welfare Facilities	13789	Does management provide safe drinking water?	Does the workplace have an adequate supply of safe drinking water?
OSH1	Welfare Facilities	13789	Does management provide enough drinking water?	Does the workplace have an adequate supply of safe drinking water?
OSH1	Welfare Facilities	13789	Are there enough drinking water stations?	Does the workplace have an adequate supply of safe drinking water?
OSH1	Welfare Facilities	14400	Does management unreasonably restrict workers from drinking water?	Are there any restrictions on drinking water?
OSH1	Welfare Facilities	14500	Does the factory have the number of toilets required?	Does the factory have the number of toilets required?
OSH1	Welfare Facilities	15000	Are the toilets cleaned regularly?	Are toilet facilities regularly cleaned?
OSH1	Welfare Facilities	15100	Are the toilets close to the workplace?	Are toilet and washing facilities close to the work area?
OSH1	Welfare Facilities	15200	Is enough soap and water available near the toilets?	Is soap and water available for washing?
OSH1	Welfare Facilities	15300	Does management unreasonably restrict workers from using the toilets?	Are there any restrictions on toilet use?
OSH1	Workplace Operations	26970	Is the workplace clean?	Are all work areas and access paths kept tidy and clean?
OSH1	Workplace Operations	26970	Is the workplace tidy?	Are all work areas and access paths kept tidy and clean?
OSH1	Workplace Operations	27100	Are access paths wide enough to allow for two-way traffic?	Are access paths wide enough to allow two-way traffic?
OSH1	Workplace Operations	27200	Are access paths free of obstruction?	Are all work areas and access paths free of obstruction and hazards?
OSH1	Workplace Operations	27300	Is the surface of transport routes even and not slippery?	Is the surface of transport routes even and not slippery?
OSH1	Workplace Operations	27400	Can workers easily reach switches, controls, tools and materials?	Are switches, tools, controls and materials placed within easy reach of workers?
OSH1	Workplace Operations	27500	Do workers have enough equipment for carrying heavy or bulky materials?	Are workers provided with push-carts and other wheeled devices for carrying heavy or bulky materials
OSH1	Workplace Operations	27600	Do workers who work sitting down have adjustable chairs with backrests?	Are seated workers provided with chairs with a sturdy backrest?

OSH1	Workplace Operations	28000	Do workers have to bend over or raise their hands to work because the work height is not adequately adjusted?	Is work height adjusted to the needs of individual workers to avoid bending postures or high hand positions?
OSH2	Assessment, Recording, Reporting	20200	Does the factory have a written health and safety policy?	Does the enterprise have a written policy or guidelines on OSH?
OSH2	Assessment, Recording, Reporting	20400	Is the health and safety policy written in Khmer?	If yes, Is the policy written in Khmer?
OSH2	Assessment, Recording, Reporting	20600	Do workers and supervisors understand the health and safety policy?	If yes, is the policy known to all workers and supervisors?
OSH2	Assessment, Recording, Reporting	20700	Has management posted safety and health information in Khmer (e.g., posters and signs) in the workplace?	Are safety posters/notices displayed?
OSH2	Assessment, Recording, Reporting	20700		If yes, are they written in Khmer?
OSH2	Assessment, Recording, Reporting	20800	Does management keep a record of work-related accidents and illnesses?	Does the enterprise keep a record of accidents?
OSH2	Assessment, Recording, Reporting	20800		Does the enterprise keep a record of work-related illnesses?
OSH2	Assessment, Recording, Reporting	20900	Does management regularly provide a summary report of work-related accidents and illnesses to the relevant authorities?	Does the enterprise notify the relevant authorities of work related accidents/illnesses? (Art. 1 Prakas 58/98)
OSH2	Assessment, Recording, Reporting	20900		If yes, do they do so within the required 24 hours of the accident/illness?
OSH2	Assessment, Recording, Reporting	35200	Has management failed to take steps to ensure workers' occupational health and safety?	
OSH2	Chemicals	23500	Does management keep an inventory of all chemicals stored at the workplace?	Is there an inventory kept of all chemicals on the work site?
OSH2	Chemicals	23600	Does management have safety data sheets for chemicals used at the workplace?	Are safety data sheets held for chemicals kept on site?
OSH2	Chemicals	23700	Do workers understand the content of the safety data sheets?	Are workers aware of and understand the content of such data sheets?
OSH2	Chemicals	23900	Are chemicals properly stored in a separate area of the workplace?	Are chemicals properly stored?
OSH2	Chemicals	24100	Does the factory have satisfactory exhaust ventilation in areas where chemicals are used?	Has exhaust ventilation been installed in areas where chemicals are in use?
OSH2	Chemicals	24100		Could exhaust ventilation be improved?
OSH2	Chemicals	24300	Does management train workers who work with chemical substances how to use them safely?	Are workers exposed to dangerous substances trained in the handling of these substances?

OSH2	Chemicals	24600	Do workers who need it use the protective clothing and equipment that is provided?	Do workers who need it actually use this [protective] clothing/equipment?
OSH2	Emergency Preparedness	21300	Are procedures in place to handle emergencies (e.g., fire, explosion, natural disaster)?	Are procedures in place to handle emergencies (such as fire, explosion, natural disaster)?
OSH2	Emergency Preparedness	21400	Are managers, supervisors and workers aware of these procedures?	Are managers, supervisors and workers aware of these procedures?
OSH2	Emergency Preparedness	21500	Does the factory hold regular emergency drills?	If yes, are regular emergency drills held?
OSH2	Emergency Preparedness	21789	Are all emergency exit doors clearly marked?	Are emergency exits clearly marked, accessible and unlocked?
OSH2	Emergency Preparedness	21789	Are all emergency exit doors unlocked during working hours, including overtime?	Are emergency exits clearly marked, accessible and unlocked?
OSH2	Emergency Preparedness	21789	Are all emergency exit doors accessible?	Are emergency exits clearly marked, accessible and unlocked?
OSH2	Emergency Preparedness	22100	Are there enough regularly serviced fire extinguishers within easy reach of workers?	Are fire extinguishers within easy reach of workers?
OSH2	Emergency Preparedness	22100		Are fire extinguishers regularly serviced?
Wages	Payment of Wages	6100	Does management pay all workers at least the correct minimum wage for ordinary hours of work?	(a) Which category/categories of workers receive less than 45US$ a month? (b) If any, how much do these workers receive?
Wages	Payment of Wages	6200	Does management pay all workers 150% of their normal pay for overtime work performed on a normal workday before 22:00?	(16a. Is overtime worked?) If yes, at what hourly rate of pay/for which hours?
Wages	Payment of Wages	6300	Does management pay all workers double for work at night (between 22:00 and 05:00)?	(17a. Do any workers work between the hours of 2200 and 0500?) If yes, what is the hourly rate of pay during those hours?
Wages	Payment of Wages	6400	Does management pay all workers double their normal pay for work during weekly time off (Sunday)?	If yes, what is the hourly rate of pay for working on a weekly day off?
Wages	Payment of Wages	6500	Does management pay all workers one day's pay in addition to their normal daily wage when they work on public holidays?	(20a. Are workers aware of their official holidays as determined by MOSALVY? 20b. If yes, do they work on these days?) If yes, what is the rate of pay? (Art. 4 Prakas 77/98)