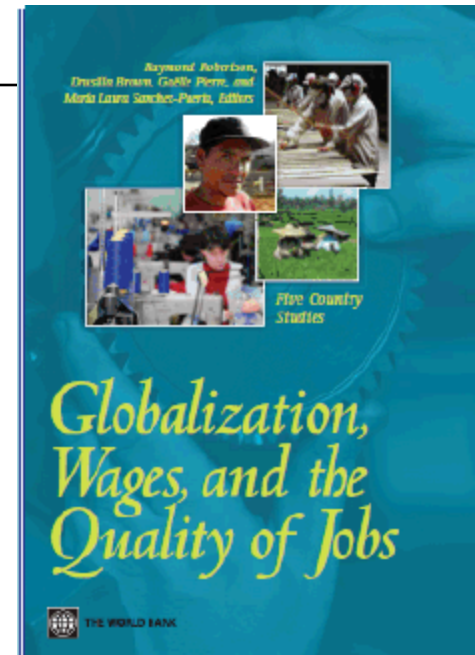# Using Micro Data to Identify Impact of the Better Factories Cambodia Program

Raymond Robertson
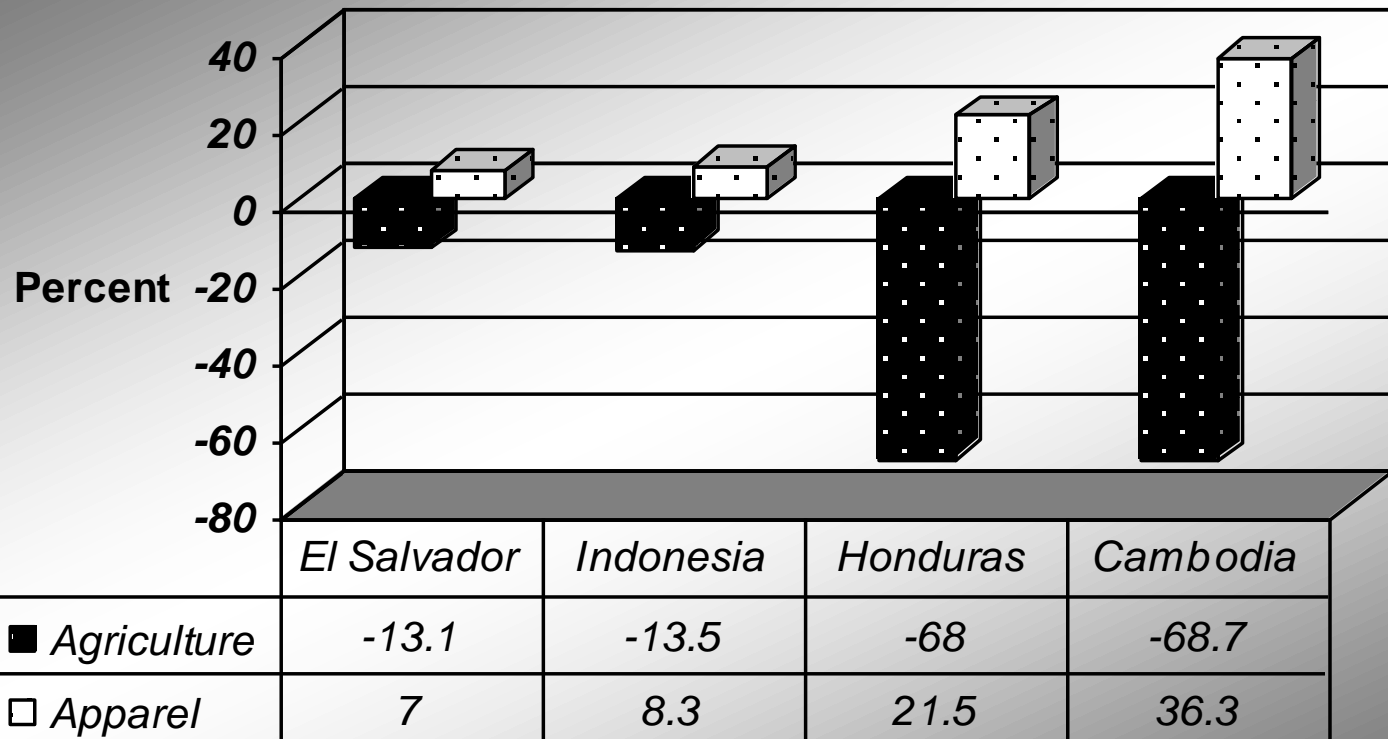
Macalester College

Recent Research

- Recent book analyzes wages and working conditions in Cambodia, El Salvador, Honduras, Indonesia, and Madagascar
- Analysis mixes qualitative and quantitative analysis of working conditions and wages in each country
- Foreign Direct Investment and Exports are concentrated in apparel (garments) in all five countries studied
- One difference across countries: Better Factories Cambodia
- Wage premium highest in Cambodia

•Globalization, Wages, and the Quality of Jobs (2009) Robertson, Raymond; Brown, Drusilla; Pierre, Gaëlle; Sanchez-Puerta, Laura (eds.) World Bank

Wage Differentials: Four Country Studies

	El Salvador	Indonesia	Honduras	Cambodia
■ Agriculture	-13.1	-13.5	-68	-68.7
□ Apparel	7	8.3	21.5	36.3

Sweatshop Economics: Optimal HR Policies in Developing Countries

- Optimality of "Sweatshop" Policies
- Personnel Economics
  - Lazear and Oyer (2007)
  - Lazear and Gibbs (2009)
- What are the effects of improvements in working conditions?
  - Are HR improvements increasing costs or increasing efficiency?
  - Changes in working conditions and probability of survival

Three (current) Steps

- Identifying sweatshop conditions
- Identifying how changes are made
- Identifying the effects of these changes (probability of closure)

Theory

- Identifying, implementing efficiency-enhancing innovations costly (Brown et al, 2009)

- Factories resist innovations demonstrated to increase productivity (Bloom and Van Reenen, 2007; Falk et al, 2006; Freeman and Kleiner, 2005; Lazear and Oyer 2007)

- Model managers as optimizing agents
  - Firms will sort (information, ability)
  - External shock provides identification

Data: Better Factories Cambodia

- Initiated 2001, ILO
- Enterprise Assessments against a set of standards: Core Labor Standards and Cambodian labor law
- Private reports of findings to factories and principle customers
- Public reports of summary findings
- Apparel firms exporting to the United States required by Cambodian law to participate.
- U.S. used reports when setting apparel export quota prior to 2005.
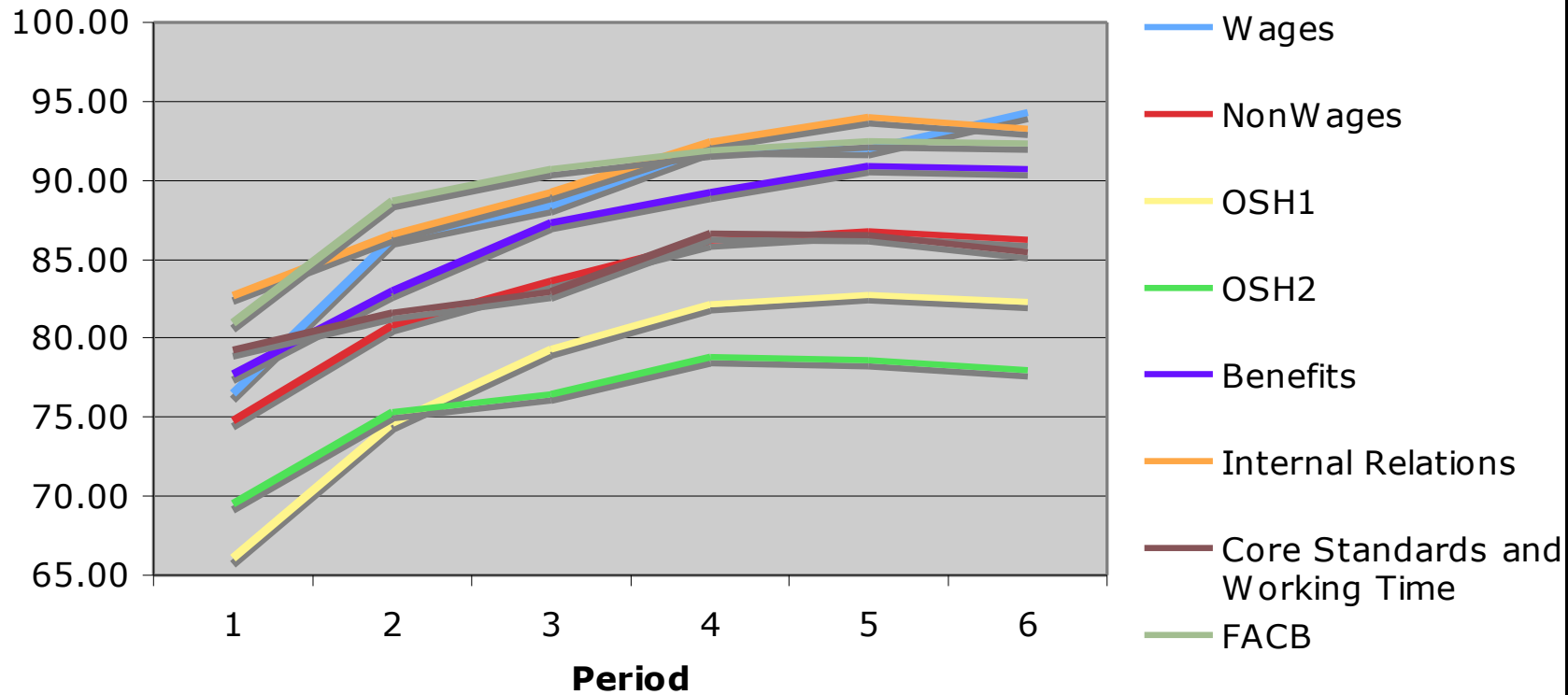
Better Factories Cambodia

○ Monitoring begins in 2001
○ In 2008 a team from Macalester coded
monitoring reports

Visit	2001	2002	2005	2006	2007	2008	Total
1	85	34	7	187	30	20	363
2	0	0	18	121	136	20	295
3	0	0	0	48	185	22	255
4	0	0	0	0	80	108	188
5	0	0	0	0	12	39	51
6	0	0	0	0	0	2	2
Total	85	34	25	356	443	211	1,154

Working Conditions

Compliance Rates Over Time

Notes: Compliance rates shown are means across firms 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

Identifying HR systems

- Use compliance points and cluster analysis
  - Sort firms into four clusters based on early compliance patterns
  - Calculate the transition probabilities across periods between groups
  - Extrapolate to get long-run convergence
- Results suggest a divergence in firms

Cluster Analysis Results

Group	Period 1 Mean Compliance Rate	First-Period Distribution	Long-Run Probability
1	74.432	0.541	0.336
2	75.344	0.149	0.169
3	76.407	0.189	0.222
4	79.966	0.122	0.273

Are Wages and Working Conditions Substitutes or Complements?

○ Wages may compensate for poor conditions

○ Efficiency wage story suggests otherwise

○ Compare changes between wage and non-wage compliance

○ Results suggest wage and non-wage measures are complements

Working Conditions and Closures

- Identification come from crisis
- Identify link between probability of closure and changes in different measures of working conditions
- Results may reveal information about underlying costs of changes in different measures

Preliminary Results

(Negative coefficients indicate survival is more likely)

Change in Working Conditions Visits 1-4	Estimate	St. Error.
Regular Hours/Weekly Rest	-0.682	(0.275)*
Emergency Preparedness	-0.569	(0.252)*
Payment of Wages	-0.542	(0.221)*
Machine Safety	-0.492	(0.227)*

Summary of other results

- Changes in most other measures have little to zero effect on probability of closure
- Some measures increase the probability of closure
- Results are similar when using closure in pre-crisis years
  - Endogeneity?
  - Consistent with learning effects

Conclusions

- Improvements in working conditions set Cambodia apart from other countries

- Lack of evidence that Cambodia is disproportionally suffering as a result of these changes

- Future research seeks to identify optimal combinations of improvements in working conditions.