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Abstract

Auditing by a downstream firm of a Chinese supplier does not affect that the supplier's blue-collar employees' wages, probability of belonging to a union, or likelihood of working overtime. However, auditing makes it more likely that rural migrant workers receive pensions, business medical insurance, and unemployment insurance.

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Auditing by a downstream firm of a Chinese supplier does not affect that the supplier's blue-collar employees' wages, probability of belonging to a union, or likelihood of working overtime. However, auditing makes it more likely that rural migrant workers receive pensions, business medical insurance, and unemployment insurance.

Keywords: customer auditing; welfare; labor standards; union; hours; benefits

JEL Classification: J8

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We examine whether downstream firms' auditing affects Chinese firms' adherence to labor standards and other measures of blue collar workers' well-being. We find no evidence that auditing affects adherence of labor standards, but auditing does increase the likelihood that the most disadvantaged workers—rural migrants—receive pensions and medical and unemployment insurance.

Most previous studies found that corporate auditing had limited effects on labor standards (e.g., Barrientos and Smith, 2007; Chan and Siu, 2007; Egels-Zandén, 2007; Locke et al., 2007; Locke and Romis, 2009). Most earlier studies looked at only a few firms at a time and used relatively few measures of compliance. This paper is the first to investigate the effects of corporate auditing on a large number of Chinese suppliers using many (seven) measures of labor standards and workers' welfare.

Data

We use data from the Private Sector Survey of China (the data and a detailed description are available online at China Survey Data Network, www.chinasurveycenter.org/csdn_en). The survey was designed by China Center for Economic Research at Peking University. The National Bureau of Statistics of China conducted the survey.

The sample covers 12 Chinese cities from across the country. These cities were chosen to be representative of various types of cities within in China (Shen and Yao, 2006): Beijing and Chongqing are provincial-level cities; Changchun, Shijiazhuang, Xi'an are provincial capitals; Wujiang and Shunde are county-level cities; and the rest are prefectural-level cities.

Roughly 100 enterprises with annual sales income greater than 5 million yuan were randomly sampled within each city. Only "industry" (mainly manufacturing) firms were surveyed. The data set are self-reported survey responses by a manager from 1,267 enterprises for 2005 and accounting information for 2000-2005.

Model Specification

We examine how seven measures of blue-collar workers' rights and well-being vary with auditing by downstream firms, type of enterprise, industry, and city. Our seven dependent variables include whether workers belong to a union; whether they work overtime; their average wage; and whether they receive a pension, government-sponsored medical insurance, business medical insurance, and unemployment insurance.

Freedom of association is an important labor standard in International Labor Organization (ILO) Core Conventions, as well as in various codes of conduct. However, whether Chinese workers have these rights in reality is debatable. Our union variable is a dummy that equals one

if the firm has any unions. In our sample, 69% of the firms have trade unions, a share that is close to the national average 70% (NTU, 2006).

Chinese labor law stipulates that laborers shall work for no more than 8 hours a day and no more than 44 hours a week on average and extra pay is due for overtime work. However, these hours limits are not strictly enforced and overtime premiums were not paid to roughly half of the employees who worked overtime on weekdays (ILO 2007). Our overtime dummy is one if average working hours per week is greater than 44 hours (51% of the firms), and zero otherwise. We use logit for the union and overtime analyses.

Our wage measure is the logarithm of the average hourly earnings, which is about 5.4 yuan (80¢), with a standard deviation of 2.5 yuan. We use ordinary least squares for the wage equation.

The survey indicates whether the various social insurance programs cover urban workers and migrant workers separately, so we have two regressions for each type of insurance. Coverage is reported in five groups or categories, where each group represents a 20% range. A firm in the first group has a coverage rate between 0 and 20%, on in the second group has a coverage range between 20% and 40%, and so forth. We estimate these equations using grouped regressions.

Our primary independent variable is whether any of the firm's customers audit its compliance with labor standards. Although customer auditing was originally conducted by

Western firms, more recently, domestic firms have also audited. About 44% of the enterprises are audited, roughly half by foreign and half by domestic customers.¹

The literature on labor auditing suggests various additional factors may affect labor welfare. We include firm size, type of ownership, industry, and city. Firm size is measured by the logarithm of average number of employees in 2005. About 60% of the sample firms are small firms (fewer than 299 employees), 27% are medium size (300-1,999 workers), and 13% are large firms (2,000 or more workers).

There are four types of ownerships: Domestic Private Enterprises (DPEs), State Owned Enterprises (SOEs), Hongkong-Macao-Taiwan-Invested Enterprises (HMTs), and (other) Foreign-Invested Enterprises (FIEs). DPEs account for nearly 70% of firms, while SOEs, HMTs, and FIEs each have roughly 10% shares.

We divide the firms into eight industries according to Industrial Classification and Codes for National Economic Activities of China and International Standard Industrial Classification: mining and quarrying (1.1% of the sample); manufacture of food products and beverages (9.8%); manufacture of textiles, wood, leather and wearing apparel (14.6%); manufacture of paper and paper products, office and accounting products (4.0%); manufacture of chemicals, chemical

¹ We treat this variable as exogenous because we know little about the customers and have no obvious instruments. Thus, its coefficient should be interpreted as indicating association rather than causality.

products, rubber and plastic products (17.6%); manufacture of metals and non-metallic mineral products (15.5%); manufacture of equipments (34.8%); and electricity, gas and water supply (2.6%). City dummies are included to capture significantly economical, demographical and geographical differences among the sample cities.

Results

Customer auditing does not have a statistically significant effect on the union dummy, overtime dummy, or the log hourly earnings, as Table 1 shows.

Table 1

	Union	Overtime	Wage
Auditing	0.027 (0.160)	0.208 (0.147)	-0.007 (0.022)
Size	0.534* (0.077)	-0.246* (0.063)	0.063* (0.009)
SOE	1.513* (0.478)	-1.196* (0.321)	0.184* (0.041)
HMT	-0.273 (0.277)	-0.608* (0.275)	0.039 (0.041)
FIE	-0.040 (0.247)	-0.422 (0.231)	0.072* (0.034)
Number of observations ²	973	1,011	991
LR χ^2	198.38	230.720	-
Pseudo-R ²	0.164	0.165	-
F-statistics	-	-	20.40
\bar{R}^2	-	-	0.311

* Cannot reject the null hypothesis of no effect at the 5% level.

² Due to missing data, we had to drop roughly 200 observations in each regression. However, the missing observations are not systematic correlated with any observed variable (both those in the regressions and others in the data set).

Larger firms take better care of their workers. Holding other variables at their means, a 1% increase in size (number of employees) is associated with about a 10% higher probability that the firm has a union, a 6% lower probability of overtime work, and a 6.5% increase in the wage.

Ownership structure also matters. Compared to the base group of private firms (DPEs), state-owned enterprises (SOEs) are statistically significantly more likely to have trade unions, less likely to require overtime, and pay higher wages; HMTs are less likely to require overtime; and FIEs pay higher wages. Many of the industry and city dummies (not reported in the table to save space) are statistically significant.

Outsiders criticize China for its institutional discrimination against peasants and rural-urban migrants. In accordance with China's Household Registration System, people in rural areas effectively have fewer rights to work than people in urban areas. Even though migrants are typically engaged in the most painstaking, tiring, and dangerous occupations, the majority of them have limited access to social insurances and other benefits in urban areas.

Table 2 presents the results of the grouped regressions on social insurances coverage for migrant and urban workers. (The industry and city dummy coefficients are not presented to save space.) Customer auditing is statistically significantly associated with higher levels of social insurance coverage of migrant workers. Pension coverage is 5.4% higher, business medical insurance coverage is 8.8% higher, and unemployment insurance coverage is 8.2% higher.

Customer auditing is associated with an 8% increase of business medical insurance coverage of urban workers.

Table 2

	Pension		Government Medical Insurance		Business Medical Insurance		Unemployment Insurance	
	Migrant	Urban	Migrant	Urban	Migrant	Urban	Migrant	Urban
Auditing	0.054*	0.019	0.040	0.019	0.088*	0.080*	0.082*	-0.001
	(0.021)	(0.019)	(0.023)	(0.021)	(0.022)	(0.023)	(0.023)	(0.021)
Size	0.033*	0.028*	0.043*	0.029*	0.023*	0.018	0.056*	0.047*
	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.008)
SOE	0.080	0.141*	0.122*	0.191*	-0.023	0.004	0.126*	0.181*
	(0.042)	(0.035)	(0.045)	(0.038)	(0.045)	(0.046)	(0.047)	(0.038)
HMT	0.071	0.065	0.030	0.053	0.076	0.094*	0.081*	0.110*
	(0.038)	(0.034)	(0.040)	(0.038)	(0.040)	(0.042)	(0.040)	(0.038)
FIE	0.155*	0.093*	0.164*	0.122*	0.090*	0.090*	0.126*	0.141*
	(0.033)	(0.029)	(0.034)	(0.032)	(0.033)	(0.035)	(0.034)	(0.032)
Number of observations	884	942	833	887	751	778	836	903
LR χ^2	239.64	245.83	243.3	267.64	108.22	93.83	235.02	345.78
McKelvey-Zavoina pseudo-R ²	0.244	0.238	0.260	0.268	0.139	0.117	0.252	0.327

* Cannot reject the null hypothesis of no effect at the 5% level.

Other experiments

We conducted a variety of other experiments and robustness checks. First, if we merge the rural and urban sample and re-estimate Table 2 for all blue-collar workers, the only statistically significant effect of customer auditing is for business medical insurance. Thus, it is possible that our lack of results on unions, overtime, and wage in Table 1 may be due to our lack of separate measures for rural and urban workers.

Second, we find, by including interaction dummies between customer auditing and various measures (in separate experiments), that the effectiveness of auditing does not vary by whether

the customer is foreign or domestic; the customer is large or small; or the type of ownership of the supplier.

Third, a potential problem in our analyses is that customer auditing may affect the size of firms, particularly if it increases the cost of labor. We re-estimated the models by either leaving out firm size or using the number of employees in 2000 (since 85% of the sample reported that customer auditing started after 2000). The results with respect to customer auditing did not change. Fourth, when we added a measure of the firm's capital, the auditing coefficients were essentially unchanged.

Conclusions

Chinese firms whose customers audit their labor standards do not differ from other suppliers in terms of having a trade union, requiring overtime work, or paying a high wage. However, in audited firms, rural migrants are statistically significantly (and economically significantly) more likely to receive a pension, business medical insurance, and unemployment insurance; and urban workers are statistically significantly more likely to receive business medical insurance. Thus, our findings suggest that auditing may primarily affect the most down-trodden workers in a firm.

These results do not necessarily imply a casual relationship. It is possible that customers that audit "cherry pick," selecting firms that are already in compliance. However, if so, auditing firms have not found suppliers that are fully in compliance with labor standards.

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