

The Responsiveness of Firms to Labor Market Changes in China:
Evidence from Micro Level Data

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I. Introduction

The Chinese manufacturing has been facing with significant changes in labor market outcomes in addition to growing prices of other production factors. Since 2003, frequent shortage in unskilled labor has been reported first in coastal areas and then in the rest China. Wages for migrant workers have been increasing quickly, which leads to a convergence between urban local workers and migrant workers (Cai and Du, 2011). This trend of wage growth inevitably raises the labor costs. Even measured by unit labor cost, a ratio between average labor compensation per worker and average output per worker, the labor costs in manufacturing have been growing in recent year, which differ China from the developed countries (Du and Qu, 2012).

The implication of shock on labor costs to economic development is of great importance. A common argument is that growing labor costs stimulate the employers to substitute labor by capital and induce technological change. At the aggregated level, this change is supposed to result in economic upgrading to which the Chinese government has appealed for many years in its official documents.

Although the Chinese government has expected to transform the growth pattern in China from the growth led by production factor accumulation to the growth led by productivity improvement, it would not take place automatically unless some necessary conditions were met. First of all, the market of production factors must signal the scarcity of production factors. In labor market, growing wages for unskilled workers have played the role¹. Second, the firms must be responsive to the price changes when making decisions on production. The purpose of this paper is to look at

¹ This also means that the policy should not distort the prices of other production factors, for example, capital. To a large extent, investment-led growth often accompanies the distortion on price of capital.

how responsive the manufacturing firms are when facing with changing labor market. Meanwhile, the paper also tries to examine whether the skilled and unskilled workers are affected differently when the firms respond to the shock on rising labor costs and fluctuated demand.

In the existing study on the developed country, Bresson et al. (1992) find that when the firms face a shock or demand or on factor costs, they do not adjust employment in a similar way for the various skill levels. To understand whether the technological change is biased toward more or less educated workers requires knowledge on demand elasticity of workers in difference groups. However, most of previous studies estimate the substitution elasticity based on aggregate data that the effects of firm characteristics can not be controlled (Ciccone and Peri, 2005).

The paper is organized as what follows. The next section briefly introduces data. Section 3 discusses the changing labor market situation and describes the firms' response. Section 4 introduces model and specification. Section 5 discusses the main empirical results. The final session draws conclusions.

II. Data

Our data source is a nationally representative survey of 1644 manufacturing firms in China conducted by the Research Department of the People's Bank of China in the fall of 2009. The authors contributed an employment module that included questions on employment changes and the implementation of the new Labor Law. The surveys were conducted in 25 cities located in eight provinces, including 4 coastal provinces (Shandong, Jiangsu, Zhejiang, and Guangdong), one northeast province (Jilin), one central province (Hubei), one northwest province (Shaanxi), and one southwest province (Sichuan). The sampling frame for the PBC national firm survey includes all firms who have ever had credit relationship with any financial institution, which is likely to under-sample very small firms. The average firm employs 499 production workers.

The firm survey collected information on the number of employees at four

points in time: December 2007, June 2008, December 2008, and June 2009. The second comes before the onset of the global economic crisis, the third is at the height of the economic crisis, and the fourth is at a point after the crisis when China's overall employment situation had substantially recovered. Our main interest is on the employment of production workers and skill worker when the manufacturing firms experience shock on demand and labor costs. However, the survey does not include detailed information to measure the skills of workers. In this paper we follow a typical category of production workers and management workers, and take the former as unskilled workers and the latter as skilled workers. For production workers, the survey also collected information on working hours at each point in time, which allow us to measure labor inputs in an alternative way.

III. The Changing Labor Market Outcomes and Firms' Response

It is widely recognized that the Chinese labor market has been changing fast in the past few years. Thanks to demographic changes and fast economic growth, the Chinese labor market is not characterized as a dual labor market any more. With this change, the migrant workers from agriculture to non-agricultural sectors have kept growing but with a declining growth rate in the recent years. Meanwhile, the average monthly earnings for migrant workers have been increasing more rapidly in recent years. The figure 1 shows the indices of employment and real wages for migrant workers since 2001. Over time a concave curve for employment and a convex curve for wage are found in the figure.

The growing wages for unskilled workers indicate the increasing scarcity of labor, which form a shock on labor costs in labor intensive sectors. In contrast to some other large economies, the unit labor cost in manufacturing sector has grown faster in China since 2004 when China is believed reaching the Lewis turning point. As indicated in table 1, the unit labor cost in manufacturing has grown one sixth from 2004 to 2009 for China, 4.1% for the U. S., 14.1% for Germany, and 4.8% for Korea. In the same period, the unit labor cost for Japan even decreased 3.7%. Although China

still has obvious advantage with labor costs in absolute level, the fast growing labor costs will shrink this advantage and reduce China's competitiveness in tradable sectors if the firms do not adjust their technology properly.

The trend of labor market changes is also reflected in our sampled firms. As noted earlier, the survey was conducted in the fall of 2009 when China has already recovered from the global financial crisis. However, the wage growth has not been interrupted even during the crisis. Figure 2 displays the monthly real wages (including bonus) for both skilled and unskilled workers at four time point we surveyed. In 2007, before the crisis, the average monthly wages were RMB 1358 for unskilled workers and RMB 1842 for skilled workers. In 2009, the wages have been increased to RMB 1462 and RMB 2005 respectively. This trend differs from some developed countries that labor costs have declined during the crisis, as evidenced by the data of 2010 in table 1.

With increasing labor costs and negative shock on demand, the descriptive statistics indicates that the firms did respond to these changes by adjusting labor inputs. In our survey we asked the working hours of production workers at each time point in addition to employment for both production workers and managers as well. Figure 3 presents the indices of working hours and employment for production workers if taking 2007 as base year. The figure shows that the firms have quicker adjustment in working hours than in employment. In the mid of 2008, the average employment of production workers was 99.3 per cent of the 2007 while the average working hours was 98.3 per cent. When hit by the global financial crisis, the average working hours were quickly down to 95.2 per cent in mid-2008 and were kept at a similar level of 95.6 per cent in mid-2009. This implies that the adjustment in total working hours was completed right after the crisis. When looking at the employment, it reduced to 97.8 per cent in mid-2008 and kept going down to 96.5 per cent in mid-2009. In some sense, the difference of adjustment in labor inputs between hours and employment could be explained by the rigidity of labor regulation that is observed by the other study using the same data set as this paper (Park, et al., 2012).

In fact, it is of interest to observe if firms with different characteristics respond

differently. For example, the small and medium sized enterprises behave differently from the big firms as indicated in table 2. As the table shows, the small firms increase their employment for both skilled workers and unskilled workers. With increasing size the firms tend to have less net changes in employment and the largest firms even reduce employment.

IV. Model and Specification

To get estimators we are interested, a typical labor demand function is applied to this study. The skilled workers and unskilled workers are taken as two types of labor inputs so that we estimate the labor demand equation for these two types of workers separately. The detailed model is as what the following equation describes.

$$\ln L_{it}^j = \alpha_0 + \alpha_1^j \ln Q_i^* + \alpha_2^j \ln w_{i,t-1}^j + \beta_1^{j,k} \text{sect}_{it}^k + \beta_2^{j,l} \text{own}_{it}^l + \beta_3^j \text{age}_{it} + \beta_4^j \text{ept}_{i,t-1} + D_p + D_t + \varepsilon_{it}^j \quad (1)$$

The left hand side variable, $\ln L_i^j$ is the logarithm of employment in firm i where j denotes the type of the workers, production workers or management workers ($j=1$ for unskilled workers and 2 for skilled workers). The right hand side variables include $\ln Q_i^*$ logarithm of planned value added, $\ln w_{i,t-1}^j$ the lag of logarithm of monthly salary for production or management workers, and a group of observable firm characteristics that approximate the production technology in each firm. sect_{it}^k is a set of dummies of the sub-sectors to capture the variations of technology across sub-sectors in manufacturing. own_{it}^l is a set of ownership dummies controlling for the potential technology differences among firms with different ownerships. The firm's age (age_i) controls for vintage effects in the firm's technology as well as for differences in firm efficiency as discussed by Jovanovic (1982) and Liu and Tybout (1996). D_p is the dummies indicating the locality of the firms and capture the factors affecting choice of technology and associating with location. $\text{ept}_{i,t-1}$ is whether the firm is exporter in the previous period to capture the impacts that employer may

expect differently during the period of global financial crisis. The provincial dummies may also capture the local labor market characteristics. ε_i^j is the error term. D_t denotes the period, which controls for time-specific shocks that are common to all the firms, for instance, the negative shocks of global financial crisis on demand.

The other aspect of adjustment of interest is the substitution between skilled and unskilled workers. To observe this effect, we modify the equation 1 by looking at the impacts on relative wages between skilled and unskilled workers on the relative demand for the two types of workers. The other regressors in equation 2 are the same as those in equation 1.

$$\ln(S/U)_{it} = \alpha_0 + \alpha_1 \ln Q_i^* + \alpha_3 \ln(w^s / w^u)_{i,t-1} + \beta_1^k \text{sect}_{it}^k + \beta_2^l \text{own}_{it}^l + \beta_3 \text{age}_{it} + \beta_4 \text{ept}_{i,t-1} + D_p + D_t + \varepsilon_{it} \quad (2)$$

The appropriate specification depends on the source of the error term in equation (1). There are several potential sources of error. The first source of error arises from fluctuation in output as a result of unforeseen fluctuations in demand, like negative shock on demand from global financial crisis, factor supplies, or reporting errors. In our survey, four of eight provinces locate in coastal areas where the most export-oriented firms concentrate. Therefore, the fluctuations around planned output could be an important source of bias in our study. As we see from equation (1), the appropriate output variable included is the planned output $\ln Q_i^*$. In the case that the firm does not respond these random shocks, the observed output may not be a good measurement on which the employment decisions are based.

The second source of error is firm heterogeneity, which can arise from the nonobservability of some key inputs in the production process. In this study, we try to eliminate this firm heterogeneity by controlling for the firm characteristics as discussed above. To correct for firm-specific heterogeneity, time-difference estimators might be a choice. While the time-difference transformation corrects one potential problem, Griliches (1986) and Griliches and Hausman (1986) point out that it can exaggerate the bias due to measurement error by reducing the amount of systematic variation in the data. The bias is likely to be more severe the shorter the time differences used. In this case, the time span is as short as half year. In addition,

we would lose a substantial amount of observations from our sample if the strategy of time-difference is used. It is obvious that the estimators based on the selected sample are subject more serious problem of bias.

In addition to implement the estimation through instrument variables, GMM estimation is also reported in the next section to get robust estimators in the heterogeneous sample.

Furthermore, the estimator is subject to simultaneity problems when profit-maximizing firm jointly chooses both output and labor inputs (Griliches and Mairesse, 1995). Roberts and Skoufias (1997) argue that elasticities estimated using microdata are less likely than aggregate studies to suffer from simultaneity bias because the supply of labor to a single firm can be viewed as perfectly elastic and the endogeneity of wages at the firm level is not a problem. Even though, to avoid the endogeneity of wages we enter the lag of wage into the equation.

As a result of output measurement error, OLS estimator will tend to bias the responsiveness of employment to both wage and output changes.

To correct the possible correlation between the observed output and the error term, we utilize instrument variable estimators. This requires an instrument that is correlated with the planned output but uncorrelated with the random fluctuations to the output. To satisfy the requirement, we use the log of net value of fixed asset of the firm in 2007 and its squared term as instruments.

V. Results

The OLS, 2SLS, and GMM estimators are reported in table 3, table 4, and table 5. when using the instrumental strategy, the validity of the instrumental variable (IV) estimation hinges on two main assumptions: i) exogeneity of instruments with respect to dependent variable; and ii) relevance of the instruments (correlation with the instrumented variable). There are several tests which are conducted to determine the validity and adequacy of the instruments we used. The test statistics are reported

in table 6.

First, the Sargan test is to test the over-identifying restrictions. The null hypothesis of this test is that the two instruments are valid. As shown in table 6, the Sagan test statistics can not reject the null hypothesis, which supports our selection of instruments.

The second concern about the validity of the instruments is whether the instruments are only weakly identified in our specification. According to Stock et al. (2002), various procedure are available for detecting weak instruments in linear IV model by looking at several statistics in the first-stage regression: The first-stage F-statistics must be greater than a threshold. As a rule of thumb F must be bigger than 10; The first-stage t-statistics as a rule of thumb must be greater than 3.5; The first stage R^2 , greater than 30 percent. In table 6 the results for the two equations meet or are closed to these conditions. The first stage F statistics for all the equations are greater than 50. The first stage R^2 is 0.28. In addition, Cragg-Donald Wald F statistics reject the null hypothesis of weak identification, as shown in table 6, which means that our instruments are not weakly identified.

Third, the under-identification of LM test is to tell whether the equation is identified, i.e., that the excluded instruments are relevant, meaning correlated with the endogenous regressors, here the observed output of the firm. The Anderson LM statistics rejects the null hypothesis that the equation is under-identified, which means that the selected instrument is correlated with the instrumented variable.

The coefficients of interests here are α_r^j ($r=1, 2, 3$; $j=1, 2$). They are labor demand elasticity with respect to output and own-wage, and the elasticity of relative demand between skilled and unskilled workers respectively. The GMM estimation gives the same coefficients with slightly different standard errors. All the coefficients are statistically significant. Table 7 summarizes the main estimates of interests from both the OLS and the IV as well. As we see, the OLS underestimates the employment responsiveness to output changes and the direction of response to wage is inconsistent with theory and most empirical results (Hamermesh, 1993). These results suggest that

output measurement error is a significant source of bias in OLS estimates of the wage and output elasticities. Therefore, our discussion is based on IV estimators.

According to IV estimates, the employment elasticity to output is 0.78 for unskilled workers (negligible difference between employment and hour measures) and 0.75 for skilled workers. Our results imply that both skilled and unskilled employment increases with the size of firm increases. In contrast, as moving toward larger firms, measuring by output, employment of skilled labor increases at slightly slower rate than unskilled labor.

The own-price elasticity is -0.40 for unskilled workers and -0.53 for skilled workers. A higher price elasticity in magnitude for skilled labor implies that an equal proportional increase in the costs of each type of worker result in a larger decline in the employment of skilled workers. This result indicates that the Chinese economy is still dominant by the labor intensive industry and the demand for unskilled workers is more robust. Such observation is consistent with the facts in the Chinese labor market where the manufacturing sectors are suffering from more and more serious shortage of unskilled workers and increasing wages. For example, in 2011 the average monthly salary for migrant workers increased 15% in real term than previous year. This trend will certainly reduce the employment demand for unskilled workers.

The elasticity of substitution between skilled and unskilled workers is around 0.26. This implies that a 1% increase in the relative wage of skilled workers reduces relative demand by 0.26%. Or a 1% increase in the relative supply of skilled workers reduces their relative wages by 3.9%.

Ciccone and Peri (2005) estimate long-run substitutability between more and less educated workers using the aggregated data in the U.S. and give substitution elasticity around 1.5. They also summarize the other results from various studies and the substitution elasticity ranged from 1.31 to 2.00. In contrast, the magnitude of substitution elasticity in this study is quite small. The difference could be explained by several reasons. First, all the other studies examine long-run substitution between more and less educated workers. In the long run, the firms are allowed to adjust their technology in a more flexible way, which leads to a large substitution elasticity.

Second, although in general the managers are more educated than the production workers, our definition is not a direct measure in skills. This may cause some bias in estimation even we are not clear about the direction of bias. Third, the small elasticity of substitution may be related to the technological structure that the labor intensive industries still dominate the Chinese manufacturing.

VI. Conclusions

Taking advantage of firm survey data in Chinese manufacturing sector, this paper examine the firm response to recent labor market changes. Some main elasticities are estimated through labor demand function.

The demand elasticity with respect to output is 0.78 for unskilled workers and 0.75 for skilled workers. This result shows that the labor demand elasticity with respect to output is quite substantial. In other words, growing manufacturing will keep create jobs and increase the labor scarcity that has taken place in China.

The own-wage elasticity is -0.40 for unskilled workers and -0.53 for skilled workers. In his comprehensive review, Hamermesh (1993) summarizes the studies on wage elasticity. Comparing to those results, this study shows that the Chinese firms are quite responsive to recent labor market changes, which imply that technological changes will take place as the wages keep rising.

The effect of substitution between skilled and unskilled workers exists. This implies that, if the unskilled workers are relatively more expensive to the skilled workers, it will encourage the firms' demand for skilled workers.

From the perspective the policy, to promote the economic upgrading in China, the labor market institutions and industrial policies must encourage the firms to be responsive to the signals from production factor market. For example, a tendency of more regulated labor market institutions may increase the rigidity of labor market and impede the firms' adjustment in technology. If this is the case, China will bear the price of economic slowdown in the future.

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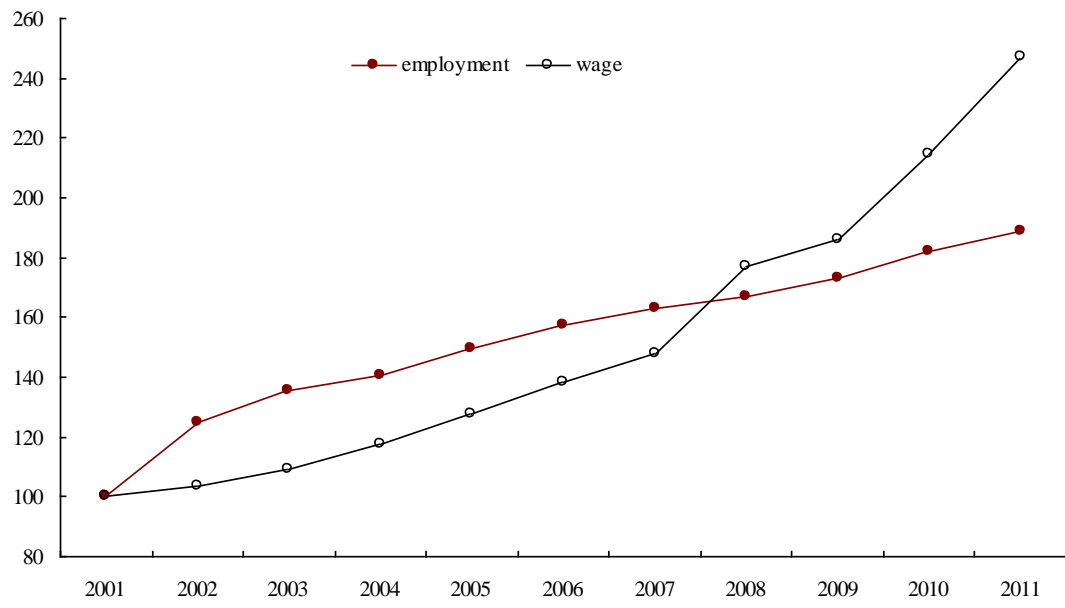


Figure 1 the employment and wage indices for migrants (2001=100)



Figure 2 Monthly Wages for Production Workers and Management Workers

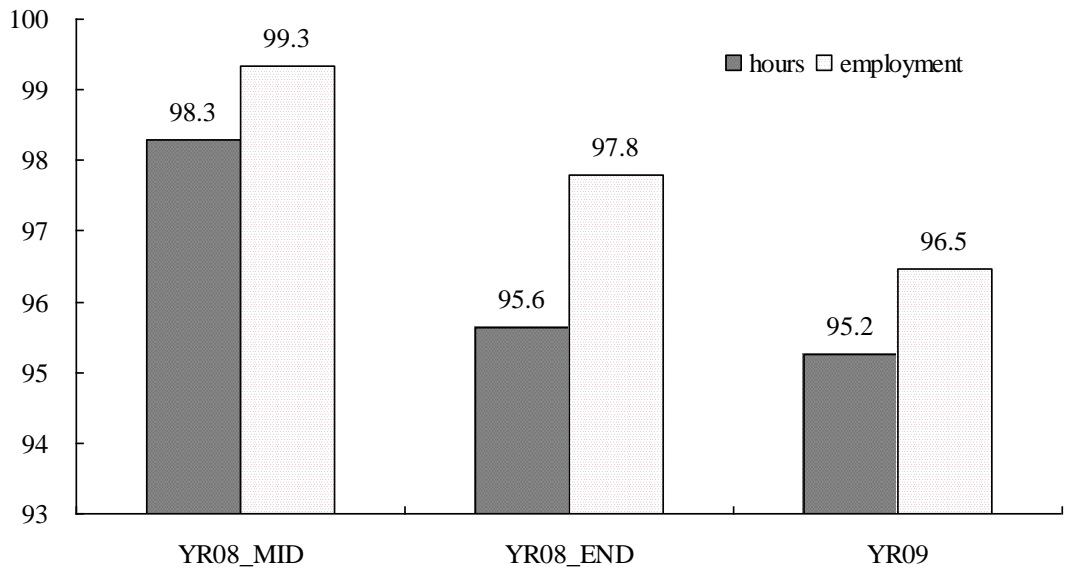


Figure 3 The Adjustment of Employment and Working Hours for Production Workers
(2007=100)

Table 1 The Unit Labor Costs in Manufacturing in Selected Countries

	China	U. S	Germany	Japan	Korea
2004	0.191	0.607	0.749	0.571	0.578
2005	0.205	0.598	0.727	0.541	0.599
2006	0.207	0.599	0.698	0.530	0.590
2007	0.202	0.586	0.686	0.502	0.584
2008	0.223	0.626	0.739	0.495	0.586
2009	0.223	0.632	0.855	0.55	0.606
2010	-	0.579	0.782	-	-

Table 2 Employment adjustment by initial employment size

Size share in 2007	Skilled Workers	Unskilled Workers
The Smallest Quartile	0.039 (0.197)	0.053 (0.230)
Quartile 2	0.035 (0.152)	0.031 (0.160)
Quartile 3	0.029 (0.171)	0.006 (0.181)
The Largest Quartile	-0.003 (0.183)	-0.028 (0.185)

Table 3 labor demand equation for unskilled workers

VARIABLES	(1)	(2)	(3)	(4)
	IV	OLS	IV	OLS
	lu	lu	lhr	lhr
log(value added)	0.776*** (0.038)	0.133*** (0.006)	0.775*** (0.038)	0.133*** (0.006)
lag of log(unskilled wages)	-0.403*** (0.139)	0.360*** (0.066)	-0.372*** (0.140)	0.390*** (0.066)
lag of exporter	0.005 (0.098)	0.549*** (0.046)	0.008 (0.098)	0.551*** (0.046)
firm age	0.004 (0.004)	0.026*** (0.002)	0.003 (0.004)	0.026*** (0.002)
Sector-Consumer Products	0.358*** (0.133)	0.314*** (0.066)	0.385*** (0.133)	0.341*** (0.066)
Sector-Raw Materials	0.242* (0.127)	0.207*** (0.063)	0.254** (0.127)	0.219*** (0.063)
Sector-Capital & Equipment	0.144 (0.138)	0.124* (0.068)	0.166 (0.138)	0.146** (0.069)
Sector-Other	0.270 (0.182)	0.169* (0.090)	0.284 (0.182)	0.183** (0.091)
Ownership-Private	0.255 (0.214)	-0.302*** (0.104)	0.261 (0.214)	-0.296*** (0.105)
Ownership-Joint/Ltd/Other	0.224 (0.204)	-0.208** (0.100)	0.232 (0.204)	-0.200** (0.101)
Foreign	0.683*** (0.233)	0.017 (0.113)	0.692*** (0.233)	0.027 (0.114)
end-2008	0.135 (0.088)	0.063 (0.043)	0.137 (0.088)	0.065 (0.044)
mid-2009	-0.311*** (0.093)	-0.033 (0.045)	-0.324*** (0.093)	-0.046 (0.046)
Zhejiang	0.124 (0.176)	0.232*** (0.087)	0.137 (0.177)	0.245*** (0.088)
Jiangsu	-0.128 (0.181)	-0.142 (0.089)	-0.116 (0.182)	-0.130 (0.090)
Guangdong	0.437** (0.185)	0.691*** (0.091)	0.485*** (0.185)	0.739*** (0.092)
Shandong	-0.018 (0.179)	0.670*** (0.086)	-0.005 (0.179)	0.682*** (0.087)
Jilin	1.918*** (0.266)	-0.016 (0.120)	1.915*** (0.266)	-0.017 (0.121)
Hubei	0.075 (0.205)	-0.074 (0.101)	0.081 (0.205)	-0.069 (0.102)
Shaaxi	1.361***	0.546***	1.379***	0.565***

	(0.204)	(0.098)	(0.204)	(0.099)
Constant	2.636***	1.057**	4.476***	2.900***
	(0.982)	(0.480)	(0.983)	(0.484)

Observations	3,585	3,585	3,585	3,585
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Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4 labor demand equation for skilled workers and relative demand

VARIABLES	(1)	(2)	(3)	(4)
	IV	OLS	IV	OLS
	ls	ls	lnsu	lnsu
log(value added)	0.752*** (0.038)	0.120*** (0.006)	-0.034*** (0.012)	-0.011*** (0.004)
lag of log(skilled wages)	-0.530*** (0.126)	0.293*** (0.059)		
lag of log(skilled wages/unskilled wages)			-0.258*** (0.053)	-0.273*** (0.053)
lag of exporter	0.073 (0.097)	0.590*** (0.046)	0.067** (0.032)	0.047 (0.031)
firm age	0.009** (0.004)	0.032*** (0.002)	0.006*** (0.001)	0.005*** (0.001)
Sector-Consumer Products	0.020 (0.131)	-0.018 (0.066)	-0.345*** (0.044)	-0.346*** (0.044)
Sector-Raw Materials	0.180 (0.125)	0.128** (0.063)	-0.079* (0.042)	-0.081* (0.042)
Sector-Capital & Equipment	0.159 (0.136)	0.116* (0.068)	-0.007 (0.045)	-0.010 (0.045)
Sector-Other	0.610*** (0.180)	0.458*** (0.090)	0.311*** (0.060)	0.312*** (0.060)
Ownership-Private	-0.082 (0.211)	-0.625*** (0.105)	-0.335*** (0.071)	-0.312*** (0.070)
Ownership-Joint/Ltd/Other	-0.035 (0.201)	-0.450*** (0.100)	-0.254*** (0.068)	-0.236*** (0.067)
Foreign	0.511** (0.230)	-0.156 (0.114)	-0.180** (0.077)	-0.154** (0.076)
end-2008	0.112 (0.087)	0.043 (0.043)	-0.023 (0.029)	-0.021 (0.029)
mid-2009	-0.302*** (0.092)	-0.040 (0.046)	0.009 (0.031)	-0.001 (0.030)
Zhejiang	0.317* (0.174)	0.354*** (0.088)	0.150*** (0.058)	0.140** (0.057)
Jiangsu	-0.154 (0.179)	-0.194** (0.090)	-0.046 (0.060)	-0.048 (0.060)
Guangdong	0.473** (0.184)	0.553*** (0.093)	-0.023 (0.062)	-0.031 (0.062)
Shandong	-0.168 (0.177)	0.553*** (0.087)	-0.125** (0.059)	-0.150*** (0.058)
Jilin	2.051*** (0.263)	0.186 (0.120)	0.136 (0.089)	0.211*** (0.080)
Hubei	0.174	0.037	0.100	0.105

	(0.202)	(0.101)	(0.068)	(0.068)
Shaaxi	1.522***	0.773***	0.179***	0.211***
	(0.201)	(0.099)	(0.068)	(0.066)
Constant	2.287**	0.029	-1.236***	-1.368***
	(0.900)	(0.448)	(0.117)	(0.096)
Observations	3,585	3,585	3,585	3,585

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5

VARIABLES	(1) lu	(2) lhr	(3) ls	(4) lnsu
log(value added)	0.776*** (0.042)	0.775*** (0.042)	0.752*** (0.043)	-0.034*** (0.013)
lag of log(unskilled wages)	-0.403*** (0.143)	-0.372*** (0.144)		
lag of log(skilled wages)			-0.530*** (0.131)	
lag of log(skilled wages/unskilled wages)				-0.258*** (0.056)
lag of exporter	0.005 (0.101)	0.008 (0.101)	0.073 (0.100)	0.067* (0.035)
firm age	0.004 (0.004)	0.003 (0.004)	0.009** (0.004)	0.006*** (0.002)
Sector-Consumer Products	0.358*** (0.128)	0.385*** (0.129)	0.020 (0.125)	-0.345*** (0.046)
Sector-Raw Materials	0.242* (0.131)	0.254* (0.132)	0.180 (0.129)	-0.079* (0.044)
Sector-Capital & Equipment	0.144 (0.130)	0.166 (0.130)	0.159 (0.127)	-0.007 (0.047)
Sector-Other	0.270 (0.209)	0.284 (0.211)	0.610*** (0.207)	0.311*** (0.066)
Ownership-Private	0.255 (0.204)	0.261 (0.205)	-0.082 (0.198)	-0.335*** (0.077)
Ownership-Joint/Ltd/Other	0.224 (0.200)	0.232 (0.201)	-0.035 (0.195)	-0.254*** (0.074)
Foreign	0.683*** (0.237)	0.692*** (0.238)	0.511** (0.230)	-0.180** (0.085)
end-2008	0.135 (0.088)	0.137 (0.089)	0.112 (0.087)	-0.023 (0.029)
mid-2009	-0.311*** (0.090)	-0.324*** (0.091)	-0.302*** (0.089)	0.009 (0.031)
Zhejiang	0.124 (0.219)	0.137 (0.219)	0.317 (0.218)	0.150** (0.061)
Jiangsu	-0.128 (0.213)	-0.116 (0.213)	-0.154 (0.210)	-0.046 (0.060)
Guangdong	0.437** (0.221)	0.485** (0.221)	0.473** (0.224)	-0.023 (0.064)
Shandong	-0.018 (0.210)	-0.005 (0.210)	-0.168 (0.209)	-0.125** (0.061)
Jilin	1.918*** (0.382)	1.915*** (0.383)	2.051*** (0.368)	0.136 (0.092)

Hubei	0.075 (0.221)	0.081 (0.222)	0.174 (0.221)	0.100 (0.070)
Shaaxi	1.361*** (0.247)	1.379*** (0.247)	1.522*** (0.243)	0.179** (0.070)
Constant	2.625** (1.026)	4.466*** (1.029)	2.287** (0.956)	-1.236*** (0.132)
Observations	3,585	3,585	3,585	3,585

Table 6 Summary of test statistics for 2SLS

	Unskilled	Skilled	S/U
F statistics at the first stage	57.03***	57.40***	21.35***
R ² at the first stage	0.242	0.244	0.10
Under-Identification Test:	421.53***	363.58***	449.27***
Anderson LM statistic			
Weak Identification Test:	424.01***	402.24***	446.64***
Cragg-Donald Wald F statistic			
Sargan Over-identification test	Exactly identified	Exactly identified	Exactly identified

Table 7 Summary of Elasticities

		Unskilled		Skilled
		Employment	Hours	
Output	OLS	0.133	0.133	0.120
	IV	0.776	0.775	0.752
Own-Wage	OLS	0.360	0.390	0.293
	IV	-0.403	-0.372	-0.530