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Rent sharing in China:

Magnitude, heterogeneity and drivers*

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1 Introduction

China's emergence in the world economy starting in the 1990s was underpinned by a massive process of labour reallocation delivered by the country's nascent labour market. This paper investigates the functioning of China's labour market focusing on the nature of its wage determination process. In particular, we study the relevance of rent sharing: Is wage determination in China essentially competitive, in the sense that workers of a given skill are paid their market rate, regardless of the financial situation of their firm? Or is it that workers employed at more profitable firms tend to be paid significantly higher wage rates than similar workers at less profitable firms? Our study is one of the first to examine this critical aspect of the labour market of China and the first to do so using comprehensive data.

Our analysis of China's labour market is important given the far-reaching consequences of China's emergence in the world economy, including in the labour markets of developed economies (Autor et al., 2013; Cabral et al., 2018). Our analysis of rent sharing in China is also of particular interest given the country's particular institutional structure. Despite its impressive economic growth over the last decades, many formal labour market institutions that are common in OECD countries are at a much earlier stage of development in China (Song, 2017). These institutions include collective bargaining, independent trade unions, and employment protection law, as well as unemployment benefits and other forms of social protection. For instance, trade unions are indirectly controlled by the government and China's Communist Party, through their affiliation with the single national organisation (ACFTU), and also generally led by firm managers, not blue-collar workers. Unwritten labour contracts - which can increase the flexibility in the adjustment of working conditions by employers - are also common, reflecting the generally limited scope of employment protection law.

These institutional aspects are relevant in our analysis as all of these labour market institutions can strengthen the bargaining power of workers and explain at least part of the significant levels of rent sharing that have been documented in many OECD countries over

the years, under different methodologies and data sets (Abowd and Lemieux, 1993; Blanchflower et al., 1996; Black and Strahan, 2003; Bronars and Famulari, 2001; Arai, 2003; Martins, 2009; Card et al., 2014; Dobbelaere and Mairesse, 2018). The much more limited number of studies that consider the cases of developing or emerging countries include Teal 1996, Bigsten et al. 2003, Knight and Li 2005 and Martins and Esteves 2006. Knight and Li 2005 consider the case of China, using two individual-level cross-section surveys conducted in 1995 and 1999, and find that workers that indicate that their firms had higher levels of profits are paid higher wages.

Our analysis draws on comprehensive panel data covering virtually all manufacturing firms in the country over the critical period of growth of 2000-2007, including World Trade Organisation membership and subsequent growth in international trade. This data set corresponds to an average of 200,000 firms and 54 million workers per year. Earlier studies in the rent sharing literature that also consider firm-level data include Van Reenen 1996, Hildreth and Oswald 2004 and Barth et al. 2016. While one cannot control for changes in the profiles of the workforce of each firm over time with this type of data, our empirical analysis is based on exogenous variation in profits driven by a number of instruments: the profits of other firms of the same industry in other regions, the potentially sizable and variable subsidies awarded by the government to firms, and interactions between lagged firm-level imports and exchange rates. We also control for a number of time-varying variables and firm fixed effects as well for year effects which are allowed to vary very flexibly, by province and two-digit industry pair. Moreover, we consider the robustness of our findings to multiple alternative measures of rents, such as profits before and after taxes or wages, and value added.

Our results indicate that rent sharing is an important attribute of the Chinese labour market. However, our estimates may be at the lower bound of the international evidence. In our main IV estimations, we find elasticities of about 3% and Lester ranges of around 45%. When considering alternative measures of rents (profits before the wage bill), our elasticities and Lester ranges nearly double to 6% and 86%, respectively. In both cases, these elasticities

are significantly smaller than the average estimate of 15% for firm-level studies that is reported by Card et al. 2018 in their review of the rent sharing literature, covering exclusively developed countries.

We also find widespread evidence of rent sharing across the multiple sub-samples we consider as well as a number of interesting exceptions. The subsamples where we do not find evidence of rent sharing are state-owned and foreign firms, firms with a high share of female workers, and firms with a high share of unskilled workers. These exceptions may be explained by the different wage determination rules applied in the public sector, the relevance of transfer pricing and international rent sharing between parents and affiliates of multinational firms, and the differences in bargaining power of workers potentially subject to greater discrimination or workers that can be more easily replaced.

In addition, we conduct a number of additional extensions that allow us to understand better the sources and nature of the rent sharing results above. First, we find that rent sharing is symmetric, in the sense that wages increase when profits increase but can also decrease when profits decrease. This suggests a relevant risk sharing dimension in wage determination. Second, we find that rent sharing is dampened by the presence of rural workers in neighbouring regions, which highlights the role of bargaining and differences across firms in the degree to which incumbent workers can be replaced. Third, minimum wages are found to reduce the magnitude of rent sharing. Imposing wage increases to a large percentage of workers regardless of the specific profitability of the firms makes wages less responsive to profits, in part because such wage floors reduce the scope for risk sharing. Finally, we obtain evidence that labour market concentration (Manning, 2011), measured here by the share of each firm's employment in total manufacturing employment in its local labour market or by employment concentration in the local labour market (Herfindhal index), has a negative relationship with wages (Azar et al., 2017) but a generally positive relationship with rent sharing. These results suggest that employer local labour market power may allow firms to shift more risk to workers, increasing the variable component of their total pay.

In conclusion, despite the still emerging nature of many formal labour market institutions, workers' bargaining power appears to play an important role in shaping China's wage distribution, even if at a lower level than countries that are more developed, both economically and institutionally. Moreover, rent sharing is found to be shaped by both workers' and employers' (local labour market) bargaining power. While workers are able to extract product market surplus from their firms, firms with greater labour market power are also able to pay lower and more variable wages.

The remaining of the paper is as follows: the next section describes the data used, after which Section 3 presents the main results. Sections 4 and 5 study the heterogeneity of our findings across different subsamples and present a number of extensions, respectively. Finally, Section 6 concludes.

2 Data

Our main data source is the Chinese Industry Enterprises Database (CIED). CIED is an annual survey of industrial firms conducted by the National Bureau of Statistics of China (NBSC), including all state-owned industrial enterprises, and non-state-owned enterprises with annual sales of at least five million Chinese yuan (approximately USD 650,000) and employing at least eight workers. These data have already been used in a number of studies, including Hsieh and Klenow 2009 and Bai et al. 2018.

CIED covers 39 two-digit industries, spreading across all 31 mainland China provinces and municipalities. In our analysis, we consider the period of 2000-2007 and all 30 manufacturing sector industries (Upward et al., 2013). Manufacturing firms take up 90% of all enterprises in CIED (Nie et al., 2012). According to Brandt et al. 2012, manufacturing firms in CIED in 2004 accounted for over 90% of total sales and 70% of employment of all manufacturing firms in China in that year.[1]

[1]These statistics are consistent with our own calculations using population data on all manufacturing firms of a Western country, Portugal (QP 2004 data set). In this case, imposing the same sales and number of workers restrictions of CIED would lead to a sample of 81.3% of total manufacturing sales and 75.7% of all

The CIED data set contains two sets of information of each surveyed enterprise. One is the basic information of the enterprises, including firm's identification, name, ownership, opening year, address, number of workers, etc. The second set is the financial data from firms' balance sheets, income and cash flows statements, including gross profits, total wages, fixed assets, gross industrial output, value of inventories, etc. We use this information to follow firms over time, adopting the algorithm and program files of Brandt et al., 2012.

Total wages, which is our main dependent variable, refer to the total remuneration payments (total wage bill) for employees in each firm's possibly multiple establishments during the reporting period (the twelve months of each calendar year). Total wages consist of six parts (hourly wages, piece wages, bonuses, allowances and subsidies, overtime wages, and wages paid in particular cases), all collected into a single variable. We also consider additional information recorded in CIED in the year of 2004 alone, when China's economic census took place. For example, 2004 data reports the number of workers in each firm by gender, education background and job titles, as well as information about trade union status of firms, all of which we explore below.[2]

Our secondary data source is the Chinese Customs Trade Statistics (CCTS), which provides detailed monthly information on the universe of Chinese import and export transactions, conducted by the General Administration of Customs of China (GACC). CCTS records main firm information (firm's name, address, postcode, telephone) and USD values of a firm's import (export) at the eight-digit product level from each source (to each destination) country. (For a detailed description of this data and earlier applications, see Manova and Zhang 2012

manufacturing employment.

[2]A detailed description of total wages can be found at `www.stats.gov.cn/english/`. Note that, although CIED provides rich firm-level information, some variables may be subject to noise, in large part as a result of potential mis-reporting by some firms. Following Cai and Liu 2009 and Feenstra et al., 2014, and guided by the 'General Accepted Accounting Principles' document, we clean the data set and drop firm-year observations according to the following restrictions that we impose: (1) key variables (such as wages, sales, value added, gross output, income tax, net value of fixed assets and inventory) must be greater or equal to zero (and non-missing), while total profits cannot be missing either; (2) the number of workers employed by a firm must not be less than 8 (the minimum imposed by CIED); (3) a firm's identification number cannot be missing and the year must refer to the period 2000-2007; (4) total gross assets must be higher or equal to the liquid assets, the total fixed assets and the net value of the fixed assets; (5) the ratio of value added to sales must be between zero and one; (6) paid-in capital must be greater than zero and its components cannot be less than zero; and (7) total liabilities, total current liabilities, long-term liabilities and welfare cannot be less than zero.

and Manova and Yu 2017, for instance.) While each firm in the CIED and CCTS data has a unique and time-invariant number, these are not the same in the two data sets. We thus use the firms' names, which are available in the two data sets, as the main matching variable to merge these data sets (Tian and Yu, 2013). For a small group of firms with missing names, we further adopt the combination of firms' postcode or address and the last 7 digits of telephone number to identify and link firms in both data sets. We also aggregate the imports (and exports) of each firm by year.

Our final sample is an unbalanced panel that increases from 125,798 firms in 2000 to 299,203 firms in 2007. Tables B1 and B2 report additional information about the data and its size. There are on average over 200,000 firms and nearly 54 million workers per year. This figure compares with total employment (including farming activities) of about 740 million workers per year. There are more then 450,000 different firms in total (for instance, 113,764 firms are present in one year only), of which nearly 40,000 firms are present in all eight years covered.[3]

Nominal variables are converted to 2007 real values. We use the CPI as the price deflator of wages and labour costs, the GDP deflator for gross profits, net profits, value added, exports, imports and subsidies, and the Price Index of Investment in Fixed Assets for the average balance of net fixed assets. All these price indices are collected from the National Bureau of Statistics of China (NBSC). For gross output, we adopt the output deflator from Brandt et al. 2012. Based on the information on firms' ownership registered type and firms' registered capital, we group firms into four categories: state-owned firms, collective-owned firms, private firms and foreign-owned firms, the latter group including firms from Hong Kong, Macao, and Taiwan (HMT). We also consider the regional distribution of firms in terms of three main

[3]Total employment in the sector increased by over 58%, which is mostly driven by the growth of the number of firms (over 100%) as continuing firms increase their employment by 8.5%. Part of the increase in the number of firms and workers over the period is driven by the increased coverage of the data set from 2004, following the census conducted in that year. Tables B1 and B2 also describe the subsets of importing firms, defined here as firms that import a non-zero share of their output in a given year. We find that almost one third of the workers in the data are employed by export or import firms although the numbers of export firms and import firms only account for 10% of all firms each year.

geographical areas.[4]

2.1 Descriptive Statistics

Table 1 presents our key summary statistics, based on our full sample of 1.6 million firm-year observations over the period 2000-2007. The mean of our key variable, average annual wages per worker per firm-year, is 14.7 thousand yuan. When including welfare payments (health, childcare and unemployment allowances provided by the firm), average labour costs increase to 16.7. 'Gross profits per worker (after the wage bill)' correspond to total profits, after subtracting wage payments but including (not subtracting) profit tax payments, divided by the number of workers. This is the main explanatory variable used in our empirical analysis. It is measured in millions of 2007 yuan and its average in our sample is of 18.5 thousand yuan.[5]

In our sample, firms employ an average of 254 workers, although the dispersion of this variable is particularly high (standard deviation of 928). Firms' age is on average 10.4 years. Average capital per worker is 82.5 thousand yuan while average gross output per worker is 391.4 thousand yuan. Nearly 13% of the firms receive public subsidies, which correspond to an average of one thousand yuan per worker (across all firms). As to our international trade variables, average exports (imports) per worker are 31 (20) thousand yuan.

We find that more than half of all firms in the data are private. Only 8% are State-owned,

[4]Specifically, the registered type codes of state-owned firms include 110, 141, 143 and 151; the registered type codes of collective-owned firms are 120, 130, 142 and 149; private firms refer to firms' registered type codes are 171, 172, 173, 174 and 190; for foreign-owned firms, the registered type codes are 210, 220, 230, 240, 310 320, 330 and 340. For the firms whose registered type code is 159 or 160, we categorized them according to the largest ownership share in registered capital. The provinces in each area are the following: 1) Eastern area - Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan; 2) Central area - Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, and Huna); and 3) Western area - Chongqing, Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Xinjiang, Tibet, and Yunnan.

[5]All variables are deflated to 2007 yuan. Using 2018 exchange rates, the average annual salary corresponds to USD 2,138. As to inequality, in 2004, the ratio of (employment-weighted) wage percentiles was 4.06 (percentile 90 divided by percentile 10), 2.13 (p90/p50) and 1.89 (p50/p10). The average of 'Gross profits per worker (before the wage bill)', which may reflect a better measure of potential rents to share with workers (Martins, 2009), is naturally higher, at 34 thousand yuan. 'Net profits per worker' is equal to the 'Gross profits per worker (after...)' except that the firms' profit taxes are subtracted. In this case, the average is of 15.6 thousand yuan. Average value added per worker is much higher, at 109.1 thousand yuan. All variables have similar descriptive statistics when weighting by firm size (see the bottom of Table 1), although means tend to be slightly higher, as expected.

while 14.3% are collectively owned[6] and 21.6% are foreign owned. Most firms are located in the Eastern Area, while only 16% and 9.6% are in the Central and Western Areas, respectively. As indicated above, we also observe an increasing number of firms over time: for instance, as many as 18.7% of firm-year observations refer to 2007 while less than 10% are observed in each year of the period 2000-2002.[7]

Before presenting our econometric results, we also examine the data visually. Figure 1 presents the mean wages and profits of all firms in each industry, considering the intermediate year of 2004 alone (Table B7 lists the industry codes used). We find evidence of a very strong positive correlation between these two variables, which is suggestive of the presence of rent sharing in the Chinese labour market. Figure 2 takes this analysis one step forward, by plotting instead the real growth rates of both variables over the period 2000-2007. Again we find evidence of a positive correlation between wages and profits, with the possible exceptions of the four industries with profit growth rates of over 600%. It is also noteworthy that the real growth rates of wages over this eight-year period are always above 50% and in many cases above 100%. In the particular case of profits, most industries present growth rates above 200%.

3 Main results

Following the suggestive *prima facie* evidence of rent sharing above, we now examine the relationship between wages and profits econometrically. We consider the context of a bargaining model between employers and workers (Blanchflower et al., 1996) and estimate different ver-

[6]Collectively-owned firms are industrial enterprises where the means of production are owned collectively, including urban and rural enterprises invested by collectives and some enterprises which were formerly owned privately but have been registered in industrial and commercial administration agency as collective units through raising funds from the public.

[7]This is described in greater detail in Table B1, where we present the number of firms in each year (125,798 in 2000 and 299,203 in 2007, for instance) as well as the number of workers over the same period (42 million in 2000 and 66 million in 2007) and the average firm sizes (which decline from 331 workers in 2000 to 221 in 2007). In an appendix, Table B1 also presents the number of importing firms and their workforce size in each year, which exhibit even higher growth over the period. Furthermore, Table B2 presents the distribution of the number of years in the data of each firm, where we find that as many as 39,294 firms are present in all eight years.

sions of the following equation:

$$Wage_{it} = \beta_1 Profit_{it} + \beta_2 X_{it} + \alpha_i + \gamma_{jt} + \varepsilon_{it}, \quad (1)$$

where $Wage_{it}$ is the logarithm of the average wage per worker of firm i in year t, $Profit_{it}$ is a measure of profits per worker of firm i in year t (including or not profit taxes and wages, or value added), α_i is a firm fixed effect, and γ_{jt} is a set of year effects, potentially varying for each pair of (31) provinces and (30) industries. The key parameter is β_1, which indicates the semi-elasticity of wages with respect to profits.

The equation also includes a vector of control variables (X_{it}), which reflect a set of firm characteristics that may have a direct impact on wages: the logarithm of number of workers, the logarithm of capital per worker (capital intensity) - computed from the net value of fixed assets (Yi and Linhui, 2015) -, the age of the firm, and a foreign-ownership dummy variable. These variables may capture differences across firms and over time in worker characteristics, and may also be correlated with profits, so that their inclusion leads to more conservative estimates of rent sharing.

Table 2 reports our first set of estimates, always based on gross profits after the wage bill, i.e. total profits (per worker) from which wages have been subtracted but profit taxes have not. This type of profits can be argued to deliver somewhat lower estimates of rent sharing when compared to its 'before the wage bill' equivalent (Martins, 2009). The first specification considers only year fixed effects, while the second adds the control variables mentioned above (number of workers, capital, firm age, and a foreign-ownership indicator). The third specification also considers firm fixed effects, while the fourth uses (7,440) 'crossed' fixed effects, defined as a fixed effects for each combination of a year (8 cases), a two-digit industry (30) and a province (31), instead of a simple set of year fixed effects common across the country. These firm plus 'crossed' fixed effects models pick up all time-invariant (observed or unobserved) differences across firms plus all business cycle effects or systematic shocks

that vary over time for each industry-province pair. Finally, specification 5 adopts the same specification as 4 except that observations are weighted using the number of workers in each firm-year. The number of observations is 1.6 million without firm fixed effects and 1.49 million with firm fixed effects (the latter case drops observations of firms that appear only once in the data).

We find in all specifications significant and positive effects of profits upon wages. The profits coefficients range between .226 (specification 4) and .772 (specification 1). In our most detailed specification and including employment weights, we find a coefficient of .456. Using these figures, we also compute the wage-profit elasticities (by multiplying the rent sharing coefficient by mean profits) and Lester ranges (the product of the elasticity by four times the standard deviation of profits, divided by the mean profits (Lester, 1952)). The latter statistic indicates that, in our preferred specification (5), workers that would hypothetically move from low-profit to high-profit firms (two standard deviations below and above mean profits, correspondingly) would see their wages increase by 13%. Even when not weighting the data we find significant Lester ranges of 8%.

It is also interesting to note the coefficients of some of the remaining variables: We find that firm size (number of workers) depresses average wages, particularly when accounting for firm fixed effects, while capital per worker has the opposite effect. The former result is mostly likely a composition effect, as new hires will necessarily have less experience in the firm and may be less qualified as well and thus earn lower wages than incumbent colleagues, thus driving their firms' mean wages down. Again, it is important to note that, given the large pool of available rural labour (estimated over this period at between 100 to 150 million workers (Cai, 2008)), most firms are facing virtually flat labour supply curves. Foreign firms pay also significantly higher wages, although this premium is reduced to 5% or less when controlling for firm fixed effects, i.e. when focusing on foreign acquisitions or divestments (Hijzen et al., 2013).

It is well known that the variation in profits across firms or within firms over time may not

be exogenous. For instance, firms with more skilled workers may tend to have higher profits, thus generating a positive bias in rent sharing estimates. Similarly, firms that happen to have a positive shock on their profits may also then hire more skilled and expensive workers, again leading to a positive rent sharing bias. Efficiency wages, in which firms obtain higher productivity from offering higher wages, may also generate spurious rent sharing estimates. We address this concern by considering different instrumental variables. The first one is the average profits per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The average is weighted by each firm's employment. The rationale for this instrument is that other firms in the same industry and year are likely to have similar profits, as they will be subject to similar product-market demand-side shocks. However, those external profits are not likely to influence directly the wages of an individual firm, other than through the effects of firm's own profits. An exception may arise when labour supply to the sector is inelastic, in which case the labour demand shock may generate an equilibrium wage response (Card et al., 2018). However, this is not likely to be very relevant in the case of China, especially over the period covered, given the large pool of rural labour keen to take jobs in the manufacturing sector and the external shock related to WTO membership in December 2001.

The second instrument we consider is the value of public subsidies that each firm receives in each year, which amount on average to one thousand yuan per worker per firm-year, as indicated in Table 1). These subsidies are awarded on a largely discretionary basis by the government, although they appear to favour larger and capital-intensive firms, but not necessarily specific sectors or specific types of firm ownership. Given their significant size, these subsidies will contribute positively towards the profitability of the firm while again should have no direct effect on wages other than through rent sharing. Finally, our third instrument is based on international trade shocks. It is defined as the product of the total imports of the firm in the previous year by the exchange rate (US dollars per yuan) in the current year. The rationale is that the higher the value of imports of the firm, the

stronger the positive (negative) impact of a domestic currency appreciation (depreciation) on the firm's profits. Again, while this international trade/exchange rate shock should influence profitability, it should have no direct effect upon wages other than through rent sharing.[8]

Table 3 - bottom panel - presents our first-stage results, first considering each instrument in isolation and finally the three instruments together. We find that all instruments are significant and have the expected positive signs, both when considered alone and when considered jointly. The F-statistics are always extremely high, at 150 or above, and other tests of instrument validity are also passed. When considering the instrumented rent sharing estimates - upper panel -, focusing on our models with all control variables and fixed effects, we find that the rent sharing coefficients increase considerably and remain highly significant, as well as the resulting elasticities and Lester ranges. (The number of observations is smaller in the specifications with the imports instrument as the lag structure implies that we lose at least one observation of each firm.) Lester ranges are of at least 40%, increasing to 89% when considering the international trade instrument and to 45% when considering the three instrumental variables together. Elasticities are of at least 2% and nearly 3% when using the three instruments in the first stage.

We also replicate the analysis above using an alternative measure of profits, gross profits before the wage bill, in Table 4. As predicted, we now find typically higher rent sharing estimates, in which Lester ranges (elasticities) are of at least 60% (4%) and as large as 86% (6%) when considering our three instruments at the same time. When considering a broader measure of wages, including welfare costs supported by the firm, we find even higher measures of rent sharing - Table 5.

[8]See also Park et al. 2010, which uses a similar IV approach in the case of China, but based on exports, and Macis and Schivardi 2016 that find that exporting firms pay wage premiums, in the context of a currency devaluation episode in Italy. In our case, we did not find significant effects from interactions between exports and exchange rates, in contrast to the case of imports. This result may be driven in part by the limited variation of the exchange rate of the yuan in the first years of our sample period given the exchange rate policy of the Chinese government at that time.

4 Heterogeneity

Having established our main results, of significant levels of rent sharing in the Chinese labour market, we now test their robustness and potential drivers by considering different groups of firms, defined as a function of their characteristics and the characteristics of their workers. Our first analysis, presented in Table 6, compares unionised and non-unionised firms. As in all other results in this section, we draw on IV models (with all three instruments) and the more conservative 'gross profits after wages' measure of rents. We draw on the information about the presence or not of a trade union in the firm in 2004 (the only year in which it is available) to classify firms as unionised or non-unionised, assuming that such 2004 status is unchanged in all other earlier and later years. (As we still drop observations from firms that are not in our data in 2004, we examine a smaller data set, but still with over 440,000 firm-year observations.) We find that unionised firms exhibit slightly higher levels of rent sharing, with a bigger point estimate (1.355 vs 1.247) and Lester range (48% vs 42%) but virtually equal elasticities.

We interpret this small difference between the two firm types not only as a consequence of our potentially noisy measure of unionisation but also as a reflection of the relatively weak bargaining power of unions in China and their proximity to the interests of employers and government. Indeed, all unions are affiliated with the ACFTU (All China Federation of Trade Unions), which is controlled by the government. Previous evidence on this issue provides contrasting views. For instance, Yao and Zhong 2013, who examine a cross section of over 1,200 firms in China in 2006, finds that unionization is significantly associated with higher hourly wages (as well as lower hours and a higher likelihood of pension coverage). On the other hand, Budd et al. 2014 finds that union density does not affect average wage levels in China while Anwar and Sun 2015 finds positive effects but only in some industries. It is also important to take into account that recent causal studies from developed countries challenge previous observational evidence indicating positive union effects, at least on productivity (Lee

and Mas, 2012; Liu, 2010). At the firm level, unions are often headed by management staff, not by (blue-collar) workers.

Our second robustness check compares labour- and capital-intensive industries. We expected that workers bargaining power will be stronger in capital-intensive industries, where labour costs will tend to represent a lower share of total costs while labour-related disruption can be more costly to employers. We find that this is indeed the case, but only for non-public-owned firms (domestic private- and foreign-owned firms) - Table 7. However, in public-owned firms, rent sharing is actually higher in labour-intensive firms than capital-intensive firms. When pooling the two types of firms, we find that the contribution from public-owned firms dominates and rent sharing is actually stronger in labour intensive firms (results available upon request).

Table 8 compares rent sharing across four types of firm ownership (State-, collective-, private- and foreign-owned firms). Here we find significant effects only in the cases of private- and collective-owned firms. As already indicated in our descriptive statistics, the former are the largest group, accounting for over half a million firm-years. These results indicate that, on average, State-owned firms do not engage in rent sharing, as we had already noted in the case of capital-intensive sectors. This lack of rent sharing is perhaps because of greater human resource management reliance on fixed pay schemes or product pricing policies that lead to low levels of rents that could then be shared with workers. On the other hand, the lack of rent sharing in the case of foreign firms may appear more surprising, at least because their HRM practices could be expected to involve significant levels of variable pay. These findings may be explained by rent sharing that is a function largely of the profits of the multinational parents and not necessarily or mostly of the profits of the affiliate in China (Martins and Yang, 2015). Particularly in a context of transfer pricing, the host economy profitability of the multinational firms may be only loosely related to the actual profitability of the affiliate.

We now turn to our analysis of different samples based on worker characteristics. In Table 9 we compare firms with above or below median percentages of female workers (using again

the information from 2004 data to classify firms in the remaining years). This median is of 27.8%, reflecting the greater share of male workers in the manufacturing sector. We find striking differences between the two groups: while rent sharing for firms with high shares of male workers is large, with an elasticity of 3.9% and a Lester range of 55%, we do not find evidence of significant rent sharing in the case of firms with above-median shares of female workers. These results are consistent with evidence for other (developed) countries (Black and Strahan, 2003, Nekby, 2003, Martins, 2009). These may reflect multiple factors, including gender discrimination, childcare, skills, mobility costs, or willingness to bargain over pay.

Table 10 considers differences in workers' skill. We expect that rent sharing will be stronger across firms with more skilled workers, which tend to be less easily replaceable and thus will have stronger bargaining power. Indeed, we find that statistically significant rent sharing can only be found for firms with above-median skilled workforces. This median corresponds to firms in which the percentage of skilled workers, with any form of technical title, is above 4.1%, a low figure that reflects the low-skill-labour intensive nature of most manufacturing in China. In above-median firms, the wage-profit elasticity is of 3.4% and the Lester range is 51%. In firms with below-median skilled workforces, the profits coefficient is still large but imprecise enough not to be significant even at the 10% level, although with an elasticity of 2% and a Lester range of 34%, considerably smaller than the case of above-median skill firms.

In our final robustness checks, we redo our main analysis, based on the full sample and again using IV methods, but considering different net profits (i.e. subtracting taxes) and value added measures. The results are presented in Tables A1 and A2 (net profits, using OLS and IV), Table A3 (gross profits before the wage bill, using OLS) and Tables A4 and A5 (value added, using OLS and IV). We find in all cases estimates of rent sharing similar or above those of our main results. In an appendix, we also present additional evidence considering multiple subsamples along other margins of differentiation. Tables B3, B4, B5, and B6 consider the cases of firm size (samples split at the median of 104 workers), firm age (median of 7 years),

regions and workers' schooling (median of 9.5 years). Again in most subsamples we find significant rent sharing and Lester ranges of 25% or above. The exceptions are the cases of small firms and firms with less schooled workers, the latter result being consistent with the findings presented above on workers' skill.

5 Extensions

5.1 Asymmetric effects

In an additional analysis and contribution to the rent sharing literature, we consider the role of rent sharing when firms experience different changes in their profits. While rent sharing is typically perceived as a positive mechanism for workers, as it increases their wages when profits increase, it can also be regarded as a negative contribution to their welfare if rent sharing means that wages are cut at periods in which profits fall or become negative. For instance, Juhn et al. 2018 finds evidence that firms in the U.S. insulate workers from idiosyncratic shocks. Similarly, Guiso et al. 2005 find that firms in Italy provide insurance to their workers against temporary but not permanent shocks. Ideally from the workers' perspective, rent sharing would involve some degree of asymmetry, whereby wages increase when profits increase but wages do not decrease when profits fall. The opposite case could be regarded as that of 'risk sharing' (Bigsten et al., 2003), in which firms share their risk with their workforce. The desirability of such asymmetry from the workers' perspective is particularly strong taking into account the potential psychological cost from wage cuts, as discussed in the downward wage rigidity literature. Collective bargaining typically delivers such asymmetric arrangements, as wage floors are pushed up during boom periods but tend to not decline during downturns, at least in nominal terms. In other words, this asymmetric arrangement - wage increases when rents increase but wage stability when rents fall - could be regarded as a stronger form of rent sharing (of greater benefit for workers), involving wage insurance, even if the resulting rent sharing estimates are smaller than in the case of full

symmetry.

We analyse this question by considering three groups of firm(-years): those which exhibit declines in gross profits by 10% or more compared to the previous year; those whose gross profits vary between -10% and +20% compared to the previous year; and those whose gross profits increase by more than 20%.[9] Under the case of full symmetric rent sharing, we would expect similar coefficients in the three groups of firm-years. Under the case of asymmetric rent sharing, rent sharing would be positive when firms experience increases in their profits but zero when firms undergo decreases in profits. While theoretically possible, we do not expect a third case in which there is rent sharing only when profits fall, implying wage decreases during those times but no wage increases when profits increase.

Table 11 presents our results. We find evidence of similar rent sharing effects across the three types of changes in profits, with coefficients of between 1 and 1.2 in the three cases, even if these are far more precisely estimated in the case of increases in profits. The coefficient is not significant in the case of stable profits, which will be driven by the limited variation in the regressor that follows from sample construction. Elasticities vary somewhat, because of the different profit means across subsamples. However, Lester ranges are again very similar, ranging between 36% and 39% across subsamples. We therefore interpret these findings as supportive of the case of symmetric rent sharing, which can be taken to be equivalent to risk sharing. In other words, we find evidence that wages increase when profits increase but also decrease when profits fall.

5.2 Rural labour

In our second extension, we consider the role of rural labour in rent sharing. The availability of large numbers of workers in rural areas keen to take better-paying jobs in manufacturing can be an important force shaping rent sharing. Under a bargaining perspective, the greater the

[9]To be able to better study the relationship between the changes in profits and the changes in wages, we consider both the before and after years of each firm in each type of change above. For instance, a firm classified in the group of increases in profits in year t because its profits in that year are at least 20% higher than in year $t-1$ will have both its t and $t-1$ observations included in the sample that examines rent sharing in periods of profits growth.

number of these workers, the weaker the bargaining power of incumbent workers in factories, as they can be more easily replaced, and the smaller the rent sharing that incumbent workers would consequently enjoy.

To test the hypothesis above, we collect data on the rural employment in urban areas. We were able to obtain these data from the China Labour Statistics Yearbook for the Jiangsu province alone, during the same period of 2000-2007. We then match this information about rural employment with our main data set, considering six-digit county codes, so that we can relate wage determination in the manufacturing sector, including rent sharing, with the relevance of rural employment in each same region. As Jiangsu is the second largest province in the country in terms of employment and firms, we still obtain a large sample, with over 140,000 firm-years.

Our estimations are based on similar specifications as in our benchmark analyses, except that we add two additional regressors: the level of rural employment and an interaction between that variable and the gross profits of each firm. In both specifications considered, based on year or crossed fixed effects (the latter defined here as year dummies that can vary across two-digit industries), we find - Table 12 - that the interaction variable above is negative and significant. In other words, as expected in our discussion above, rent sharing is found to be dampened by the nearby presence of large numbers of rural workers. We interpret these results as additional evidence that at least part of the mechanism driving our estimates of rent sharing is the relative bargaining power of employers and workers.

5.3 Minimum wages

Can minimum wages represent a form of mandated rent sharing and to that extent explain at least part of our evidence in Section 3? Minimum wages were first introduced in seven provinces in China in 1994, covering not more than 130 cities by the end of 1995 (Huang et al., 2014). Their setting sought to take into account the specific conditions faced in each labour market. Given their decentralised nature, if the setting of minimum wages is influenced by the

profitability of firms in each region, then they could indeed shape rent sharing. Differentiated minimum wages could even play some of the role of collective bargaining extensions, in which non-unionised firms and workers are also required to comply with the terms of collective agreements, including their minimum wages (Martins, 2014), in this case in a context in which collective bargaining is still in its early stages of development.

To investigate this potential alternative explanation for our benchmark findings, we collected the monthly minimum wages for 2,855 counties across the country between 2004 and 2007, accounting for 96.4% of the total number of counties in China. This data collection was achieved by browsing various government web sites, policy documents, statistical bulletins and official newspapers. When collecting the data, we also took into account that, according to the minimum wage regulations issued by China's Department of Labour and Social Security, the minimum wage standard generally adopts the forms both of a monthly minimum wage and an hourly minimum wage. Moreover, as we also collected the specific dates (month and year) of the implementation of the changes in minimum wages, which may occur at different times in the year and or more than once in a year, we compute the annual average minimum wages by weighting each minimum wage by the number of months in which it was in force during the year. This (weighted) average minimum wage is then matched to our main data set using each firm's six-digit county code and observation year.[10]

Some descriptive statistics of the resulting data set are presented in Table 13. We find that the average annual real minimum wages (across counties and years) is of 5.1 thousand yuan, while the average wages is of 14.3 thousand yuan. The resulting average firm-level Kaitz ratio (defined as the ratio between the applicable minimum wage in the county where the firm is located and the mean wage of the firm) is 51.6%, a relatively large number. However, when

[10]See also Gan et al., 2016 for a recent study of the impact of minimum wages in China. The wages of firms were also subject to a 'wage guidance system' determined by the labour department of each province, depending on the situation of the local economy (Holz, 2014). Under these not necessarily binding guidelines, firms were required in some cases to increase wages of their workers between lower and upper baselines (e.g. 5 and 20%), varying by province and year. Moreover, state-owned firms were subject to additional constraints in their wage setting: for instance, total wages may have to increase by between .3% and .7% per each 1% increase in the relevant performance measure (profits including taxes) of the firm. At the same time, average wages in state-owned firms could not increase by more than the increase in labour productivity of the firm.

weighting by firm size, this Kaitz ratio drops to only 37%. At the same time, annual real minimum wages increased by over 30% between 2004 and 2007. This is again a large number, which underlines the potential of minimum wages to explain at least part of our benchmark results.

Table 14 presents our analysis, considering again the 2004-2007 period. All columns are based on a version of our data aggregated at the county-year level, resulting in 10,896 observations. First, we examine the responsiveness of minimum wages to local profits, which we regard as a necessary condition for minimum wages to be a source of rent sharing. In our first specification, presented in column 1, we regress the log of the minimum wages in each county and year on the (employment-weighted) average profits of the firms in the same county and year, plus county and year fixed effects. Because of the aggregation of the data, here we present estimates excluding instrumental variables, disregarding the potentially endogenous nature of profits and most likely underestimating rent sharing. We find that local minimum wages are significantly and positively associated with average gross profits per worker in each county-year, even if its coefficient can be regarded as low (0.146). This result supports the hypothesis that rent sharing could be driven at least in part by minimum wage setting. In other words, minimum wages may be increasing more in counties where firms' profits are also increasing more, resulting in a form of mandated rent sharing.

However, when considering the log of the average wages per worker in each county-year instead of the log of the minimum wages as our dependent variable, in column 2, we find that the role of average profits is much stronger, by a factor of more than 10 (1.637 vs 0.146). Moreover, when we include the minimum wage of each county and year in the log wage specification above, we find that the resulting county-level rent sharing estimates are not affected (1.629), even if the minimum wages coefficient is still positive. In other words, while minimum wages are associated with higher average wages, county-level firm profitability not only still appears to have an independent positive effect on wages but also exhibits a much stronger association with average wages.

Finally, we also consider an additional specification, in which we add an interaction between average profits and minimum wages to our list of regressors. We find, in column 4, that rent sharing is negatively affected by minimum wages as the coefficient of the interaction is negative (-0.352). In other words, the higher the level of minimum wages in a given county, the lower the extent to which wages increase following an increase in the profits of the firms in the same county.[11] This finding is consistent with our earlier evidence of symmetric rent sharing: minimum wages act as a barrier against wage reductions or slower wage growth and can therefore reduce the scope for wage adjustments during periods of declining profits.

5.4 Employer market power

In our last extension, we consider the role of monopsony power. While employer local labour market power has received greater attention recently (Manning, 2011; Azar et al., 2017; Card et al., 2018; Martins, 2018), including in terms of its wage implications, monopsony has not been approached explicitly in the context of rent sharing before as far as we know. However, we argue here that employer labour market power can not only affect wages but also the extent to which rents are shared by firms with workers. More specifically, we put forward and test the hypothesis that employer power may allow firms not only to lower total pay - employer power may also let firms rebalance total pay components by lowering the size of the fixed component while increasing the magnitude of the variable component, the latter related to rent (and risk) sharing. In other words, for a given total level of pay, firms with more employer market power may be able to increase the variable salary component to the detriment of the fixed component.

Before moving to our econometric study of this question, we present a number of graphical analysis that illustrate and compare the potential relevance of employer power across China's local labour markets.[12] Figures 3 and 4 draw on 2004 data only, an intermediate year over

[11] We find similar effects when examining these relationships at the firm-level, interacting firm profits with the minimum wage of the firm's district or counties: rent sharing at the firm level is negatively affected by the applicable minimum wage. These results are available upon request.

[12] In China, each province is composed of multiple cities. Each city is composed of multiple counties (*xian*,

the period covered, for illustration purposes, and present the distributions of the shares of each firm's employment in the total employment of all firms in its local labour market and of the shares of each firm's sales in its four-digit industry, respectively. We find that in both cases, these shares tend to be very low, almost always below 2.5%. This is despite of our focus entirely on the manufacturing sector and the exclusion of private firms with sales below five million yuan in the data.

We also examine our data from a different perspective, by considering separately the cases of the 2,131 local labour markets and the 425 four-digit industries in 2004. Figures 5 and 6 present the Herfindhal–Hirschman Indices (HHI; the sum of the square of 100 times the employment or sales share of each firm) across local labour markets or industries, respectively. We find fairly similar distributions, somewhat more dispersed in the case of the labour market (employment) than of the product market (sales). This is consistent with the mean HHIs that we obtain: The mean labour market HHI is 2,038, when not weighting local labour markets by total employment, a figure not very far from the 2,500 value considered to be a threshold at which (product) market power may be significant; however, this measure drops significantly, to 424, when weighting by total employment of each local labour market. We also find that 24.3% of the local labour markets, corresponding to 3.23% of China's manufacturing sector workforce (1.7 million out of 51.4 million), display HHIs greater than 2,500 (519 out of 2,131). The corresponding average HHI figures in the case of the product market are much lower, at 493 and 188, in part because of the lower number of four-digit industries considered.[13]

Our econometric evidence follows the same models of our main findings of Section 3 but

typically more rural) or districts (*qu*, typically more urban) - see Baum-Snow et al., 2017 for a detailed description. In our paper, all the districts in a city are regarded as one local labour market, whereas each county is regarded as a different local labour market.

[13]Figure 7 displays a scatter plot of the local labour market employment shares of the leading firms in each local labour market and their shares in total sales in their four-digit industries, with the size of the circles proportional to the employment level of each firm. Most firms do not exhibit very large product-market shares - indeed, only eight out of 2,131 local labour market leaders have product-market shares above 30% and these have been excluded from the Figure to make it clearer. Moreover, the Figure suggests a lack of a relationship between labour and product market relevance. At the same time, consistently with the differences in concentration in product and labour markets presented before, the latter dimension appears particularly relevant, even taken into account our sample construction criterion, as many firms have large shares of the employment of their local labour markets.

extended to account for the potential role of employer market power. We do this by including in our benchmark wage equation a linear or a quadratic term of the share of the employment of the firm in the total (manufacturing) employment in the local labour market where the firm is located. Moreover, we also include interactions of this linear or quadratic term with our measure of rents (gross profits after the wage bill, as before). While the employment share will pick up the direct effect of employer market power on wages (Azar et al., 2017), the interaction of the employment share with rents will shed light on the novel role of employer market power on rent sharing that we propose here. We consider models with year effects or crossed effects as well.

The results, presented in Table 15, indicate that employer market power has a negative effect on wages. This result is consistent with the limited research available, which considers so far almost exclusively the case of the U.S.. In our specifications allowing for non linear relationships, we find some moderating (U-shaped) effect but this is only relevant at very high employer market power levels and is not in any case large enough to reverse the overall negative sign of the relationship. For its most relevant range, a 10 percentage point increase in employer market power (measured as the percentage of the firm's employment in the total manufacturing employment in the local labour market) can be associated to a decline in wages of at least 2.9% (linear specification) or 8.7% (quadratic model). When considering the role of employer market power on rent sharing, we find, in contrast, a positive relationship, with a coefficient of about 3. This implies that rent sharing coefficient would increase from 1.2 to about 1.5 ($= 1.2 + 0.1 * 3$) in the case of firms with employment shares of 10%. In the quadratic specification, this effect on rent sharing from employer labour market power is again positive, even if mildly inverted-U-shaped, with a linear coefficient of 14.2 and a quadratic term of -16. In other words, a 10% increase in the firm's local labour market share, while holding everything else constant, may double the overall rent sharing effect, from 1.2 to 2.4 ($= 1.2 + 0.1 * 14 - 0.1^2 * 16$). We also consider models in which we use the HHI indices (common for all firms in a local labour market) instead of individual firm shares. Again we find that

employer concentration has a negative effect on wages but a positive effect on rent sharing. At a HHI of 1000 (or 0.1 in the measurement adopted in the regression), wages would be 2.7% lower and rent sharing would increase by 0.45, from 1.55 to 2.

We interpret these novel results as supporting our hypothesis above that firms and workers in contexts of employer labour market power, at least in the case of China, engage in a trade-off between wage levels and rent sharing effects. Higher levels of such market power appear to depress wages across the board but also make wages more responsive to firms' rents. As we have seen before, this trade-off may reflect a form of risk sharing from employers to workers, in which the latter are less insulated from the fluctuations in the product market through this interaction with the firm's power in the local labour market.

6 Conclusions

Do firms in China share rents with their workers? This question that we addressed here is important for multiple reasons. First, despite being the largest and arguably most dynamic labour market in the world, China's labour market is still relatively poorly studied, including in its wage determination and income inequality dimensions. Moreover, the intensity of the economic links between China and all other countries implies that a better understanding the Chinese labour market can facilitate a better understanding of its potentially disruptive effects on labour markets elsewhere (Autor et al., 2013; Cabral et al., 2018). Second, China's labour institutions are distinctive from those found in OECD economies, also in dimensions that may influence wage determination and workers' bargaining power (including minimum wages, trade unions, collective bargaining and unemployment benefits). At the same time, the large pools of available workers in rural areas represent another potential factor influencing rent sharing.

Our empirical analysis is based on a rich firm-level panel data set covering virtually all manufacturing firms over the critical period 2000-2007, when China joined the World Trade

Organisation, including an average of about 200,000 firms and 54 million workers per year. Our data also includes information about a large number of financial variables and international trade, again at the firm level, and some workforce information, the later exclusively for the year of 2004. We also complement these data with additional information on rural employment and minimum wages that we collected from multiple sources. Furthermore, we exploit the population coverage of our main data set to measure each firm's significance in both its product and labour markets and to study the potential impact of these two dimensions of rent sharing. In this context, and with due attention to institutional aspects, we seek to provide a perspective as comprehensive as possible of the magnitude, heterogeneity and some of the drivers and explanations of rent sharing in China.

Our main result is that rent sharing is a significant component of wage determination in China. Firms' profitability affects the wage distribution over and above any differences driven by competitive mechanisms. This result is consistent with the findings for many developed countries with very different labour market institutions. In the case of China, using instrumental variable models and a large set of firm and year-industry-province fixed effects and other control variables, we estimate wage-rent elasticities of at least 3% and Lester ranges of at least 45%. Moreover, using alternative measures of rents, these figures can nearly double. However, despite significant, these rent sharing estimates are at the lower bound of similar studies for developed economies and significantly below the average of 15% documented in Card et al. 2018. We also find that, while rent sharing is pervasive across all multiple subsamples we consider, it is lower in particular cases - firms with a higher share of women or unskilled workers, non-unionised firms, and foreign firms - which allow us to understand in greater detail the nature of rent sharing in the country.

Finally, we present a number of novel analyses that shed further light on the mechanics behind rent sharing and its interpretation and may be compared in the future with other countries, including both developed and emerging economies. First, rent sharing is found to be largely symmetric, in the sense that wages increase when profits increase but can also

decrease when profits decrease, which is also consistent with risk sharing between firms and their workers. Second, rent sharing tends to be smaller in regions with higher numbers of rural workers, reflecting greater potential competition for incumbent workers and more limited bargaining power. Third, minimum wages reduce the degree of rent sharing in the labour market, possibly by reducing the scope for firms to engage in risk sharing, given the higher wage floors. Fourth, we find that, while employer local labour market power tends to depress wages, it also increases rent sharing, which again can be regarded as another indication of risk sharing.

In conclusion, despite the still emerging nature of many formal labour market institutions, which can strengthen the bargaining power of labour, workers in China already see their wages respond to the profitability of their firms. At the same time, while bargaining power plays an important role in shaping the wage distribution in China, rent sharing is much lower than in developed economies. Moreover, we find that bargaining power matters not only in the product market but also in the (local) labour market.

A question that we leave for further research concerns the wider impact of the moderate levels of rent sharing documented here. Given the large labour pools available in neighbouring rural areas throughout the period examined, the significant but limited rent sharing documented in this paper (partly shaped by policy choices) may have played a significant role in the employment growth of the China's manufacturing sector as well as in the labour markets of other countries.

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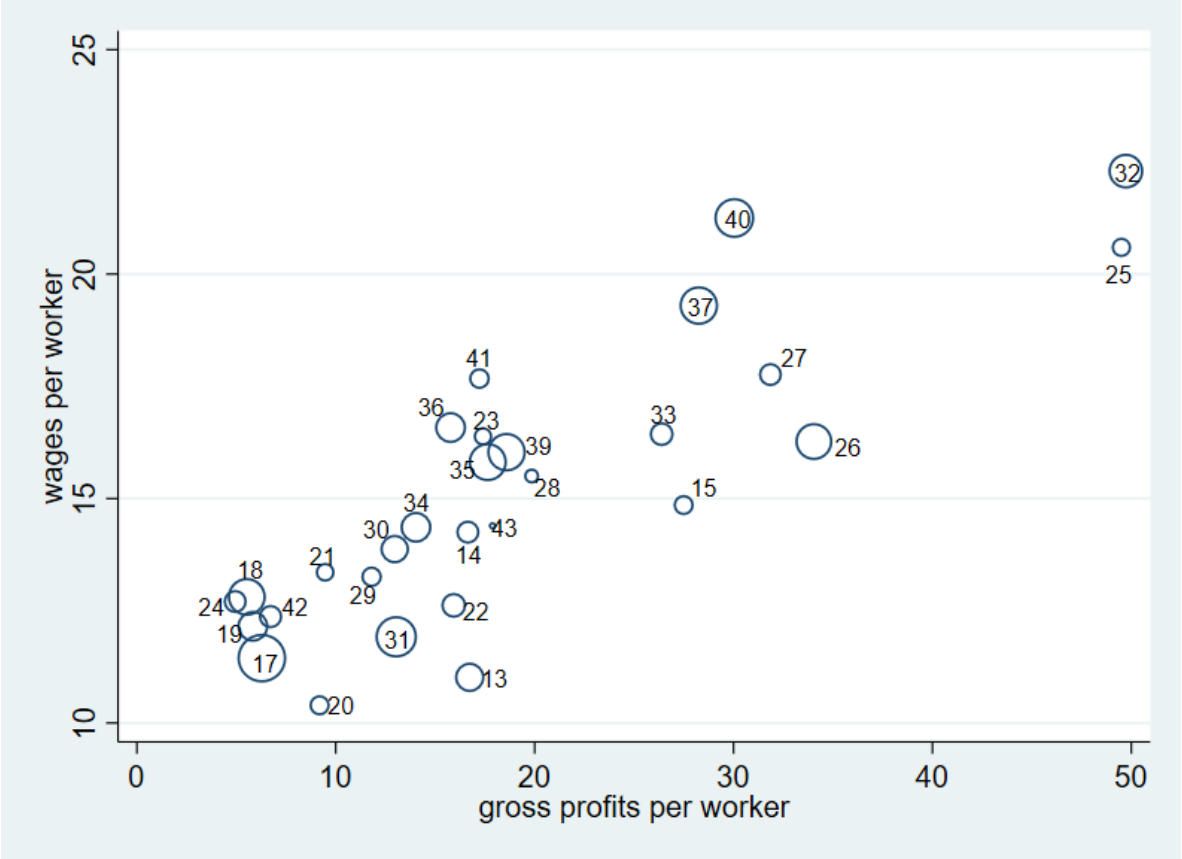
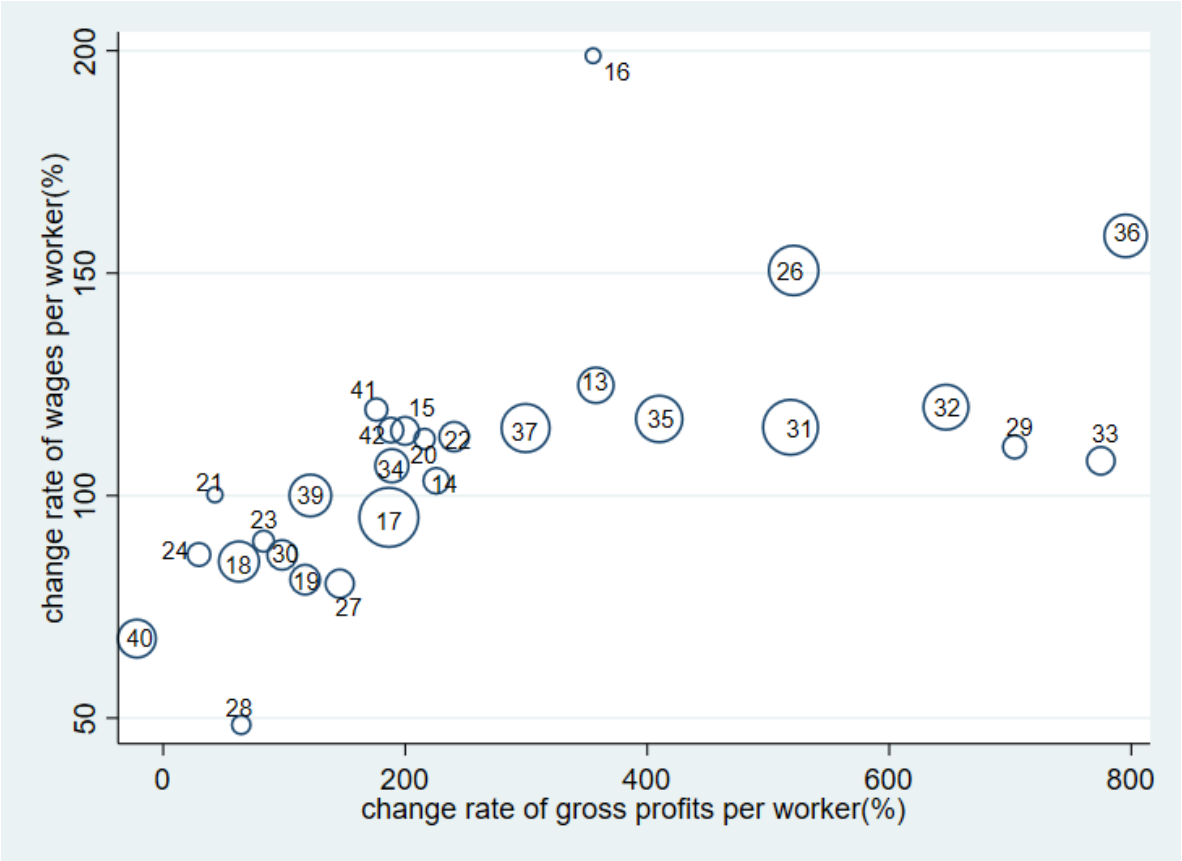
Figure 1: Wages and profits (per worker) by industry, in 2004



Notes: Own calculations based on the Chinese Industry Enterprises Database. Employment-weighted averages of wages and (gross) profits of all firms in each industry. The variables are measured in thousands of yuan per person. The names of each industry are indicated in Table B7. The sizes of the circles are proportional to the employment of the industry. The 2004 wages and gross profits of industry 16 are 54.37 and 292.52, respectively, and have been omitted from the Figure.

Figure 2: Real growth rates of wages and profits (per worker) by industry, 2000-2007



Notes: Own calculations based on the Chinese Industry Enterprises Database. The name of each industry are indicated in Table B7. The wage and profit growth rates of industry 25 are 69.6% and 2,026.7%, respectively, and have been omitted from the Figure. The first year in the case of industry 43 is 2003.

Table 1: Descriptive statistics, full sample (2000-2007)

Variables	**Mean**	**StDev**
Wages per worker	14.673	72.281
Labour Costs per worker	16.688	72.866
Gross Profits per worker (after the wage bill)	0.0185	0.0951
Gross Profits per worker (before the wage bill)	0.0340	0.1274
Total Profits per worker (before the labour costs)	0.0362	0.1281
Net Profits per worker	0.0156	0.0906
Value Added per worker	0.1091	0.2880
Firm size	253.72	927.55
Firm age	10.373	10.836
Capital per worker	82.492	205.55
Gross output per worker	391.38	905.52
Subsidy received	0.1292	0.3355
Subsidies per worker	0.0010	0.0315
Exports per worker	0.0308	0.3286
Imports per worker	0.0199	0.3364
State-owned firms	0.0803	0.2717
Collective-owned firms	0.1434	0.3505
Foreign-owned firms	0.2157	0.4113
Labour-intensive industry	0.5320	0.4990
Central Area	0.1603	
Western Area	0.0959	
Textiles (17)	0.0874	
Non-metallic Mineral products (31)	0.0837	
Comms, Computers and Other Elect. Equipment (40)	0.0334	
Transport Equipment (37)	0.0473	
General Purpose Machinery (35)	0.0779	
Year 2001	0.0853	
Year 2002	0.0913	
Year 2003	0.1040	
Year 2004	0.1424	
Year 2005	0.1472	
Year 2006	0.1648	
Year 2007	0.1865	
Weighted analysis (number of workers per firm)		
Wages per worker	15.977	66.206
Labour Costs per worker	18.523	66.831
Gross Profits per worker (after the wage bill)	0.0187	0.0724
Gross Profits per worker (before the wage bill)	0.0357	0.1081
Total Profits per worker (before the labour cost)	0.0384	0.1093
Net Profits per worker	0.0154	0.0638
Value Added per worker	0.0994	0.2489

Notes: Own calculations based on the Chinese Industry Enterprises Database. The number of firm-year observations is 1,604,000. The monetary variables 'Wages per worker', 'Labour Costs per worker', 'Capital per worker' and 'Gross Output per worker' are in thousands of Yuan (RMB). The monetary variables 'Gross Profits per worker (after the wage bill)', 'Gross Profits per worker(before the wage bill)','Total Profits per worker (before the labour costs)', 'Net Profits per worker', 'Value Added per worker' 'Exports per worker', 'Imports per worker' and 'Subsidies per worker' are in millions of Yuan (RMB).'Labour Costs per worker' is the sum of wage-, welfare- and unemployment insurance per worker. 'Total Profits per worker (before the labour costs)'is the sum of 'Gross Profits per worker (after the wage bill)' and 'Labour Costs per worker'. 'Firm size' is the number of employees in each firm. 'Firm age' is the difference between the calendar year and the birth year (plus one).

Table 2: Rent sharing, OLS models

	(1)	(2)	(3)	(4)	(5)
Gross Profits	0.772	0.582	0.255	0.226	0.456
	(0.160)***	(0.122)***	(0.066)***	(0.060)***	(0.045)***
Firm size		-0.009	-0.143	-0.148	-0.163
		(0.001)***	(0.002)***	(0.002)***	(0.004)***
Capital per worker		0.070	0.063	0.062	0.077
		(0.001)***	(0.001)***	(0.001)***	(0.002)***
Foreign		0.357	0.045	0.050	0.019
		(0.002)***	(0.004)***	(0.004)***	(0.009)**
Constant	2.448	2.163	2.912	2.932	3.298
	(0.003)***	(0.003)***	(0.008)***	(0.008)***	(0.026)***
Year FE	Yes	Yes	Yes		
Firm FE			Yes	Yes	Yes
Crossed FE				Yes	Yes
Observations	1,604,000	1,604,000	1,490,236	1,489,980	1,489,980
Adjusted R^2	0.138	0.212	0.601	0.612	0.715
F statistic	13,335,093	4,884,901	9,177,347	9,436,094	1,831,144
Elasticity	0.014	0.011	0.005	0.004	0.009
Lester Range (%)	29.37	22.12	9.60	8.45	13.23

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. The control variables 'Firm size' and 'Capital per worker' are in logs. In column 5, we use the number of workers in each firm-year as weights, while the remaining regressions are unweighted. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table 3: Rent sharing, IV models

	(1)	(2)	(3)	(4)
Gross Profits	1.076	1.551	2.630	1.346
	(0.319)***	(0.631)**	(1.470)*	(0.315)***
Firm Characteristics	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Crossed FE	Yes	Yes	Yes	Yes
Observations	1,489,967	1,489,980	1,010,419	1,010,411
Adjusted R^2	0.604	0.593	0.598	0.631
F statistics	3,784	3,584	2,123	2,475
Elasticity	0.020	0.029	0.054	0.028
Lester Range (%)	40.43	58.26	88.78	45.45
Auxiliary Regression (First-stage)				
Average profits per worker	0.185			0.189
	(0.014)***			(0.017)***
Subsidy		0.0001		0.0001
		(0.000)***		(0.000)***
Total import (1st lag)			0.00002	0.00002
×Exchange rate dollar/yuan			(0.000)*	(0.000)*
Adjusted R^2	0.496	0.496	0.600	0.600
F statistics	261.1	232.2	188.1	150.2
Kleibergen-Paap rk LM stat (under-identification test)	211.9	17.82	6.695	181.1
Kleibergen-Paap rk LM p-value	0.000	0.000	0.0097	0.000
Kleibergen-Paap rk Wald F-stat (weak instruments test)	162.7	11.91	2.977	44.32
Hansen J statistic (over-identification test)				2.046
Hansen J p-value				0.360

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instrument in column 1 is the average total profits (after the wage bill) per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The instrument in column 2 is firm's annual subsidies provided by the Government. The instrument in column 3 is the interaction between the total imports of the firm in the previous year and the exchange rate (US dollars per yuan) in the current year. In column 4, all instruments from columns 1, 2 and 3 are used together. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). The Anderson-Rubin Wald test p-value in column 3 is 0.096.

Table 4: Rent sharing, IV models, Profits before the wage bill

	(1)	(2)	(3)	(4)
Gross Profits	1.194	1.542	2.230	1.636
	(0.487)**	(0.604)**	(1.092)**	(0.547)***
Firm Characteristics	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Crossed FE	Yes	Yes	Yes	Yes
Observations	1,489,967	1,489,980	1,010,419	1,010,411
Adjusted R^2	0.598	0.579	0.514	0.582
F statistics	3,938	3,811	2,426	2,577
Elasticity	0.041	0.053	0.083	0.061
Lester Range (%)	60.3	77.86	117.3	86.08
Auxiliary Regression (First-stage)				
Average profits per worker	0.121			0.103
	(0.031)***			(0.048)**
Subsidy		0.0001		0.0001
		(0.000)***		(0.000)***
Total import (1st lag)			0.00002	0.00002
×Exchange rate dollar/yuan			(0.000)*	(0.000)*
Adjusted R^2	0.249	0.249	0.200	0.200
F statistics	419.3	405.9	316.1	233.9
Kleibergen-Paap rk LM p-value	0.000	0.000	0.003	0.000
Kleibergen-Paap rk Wald F-stat	14.97	11.22	3.435	5.393
Hansen J p-value				0.752

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('before the wage bill') per worker per firm. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instrument in column 1 is 'average total profits ('before the wage bill') per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The instrument in column 2 is firm's annual subsidies. The instrument in column 3 is the interaction between the total imports of the firm in the previous year and the exchange rate (US dollars per yuan) in the current year. In column 4, all instruments used in column 1, 2 and 3 are used together. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). The Anderson-Rubin Wald test p-value in column 3 is 0.096.

Table 5: Rent sharing, IV models, Profits before the labour costs

	(1)	(2)	(3)	(4)
Total Profits	1.061	2.061	2.351	1.733
	(0.461)**	(0.685)***	(1.063)**	(0.555)***
Firm Characteristics	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Crossed FE	Yes	Yes	Yes	Yes
Observations	1,489,967	1,489,980	1,010,419	1,010,411
Adjusted R^2	0.607	0.543	0.507	0.580
F statistics	4,114	3,722	2,500	2,673
Elasticity	0.039	0.075	0.092	0.068
Lester Range (%)	53.91	104.7	124.5	91.76
Auxiliary Regression (First-stage)				
Average profits per worker	0.1207			0.1020
	(0.030)***			(0.046)**
Subsidy		0.0001		0.0001
		(0.000)***		(0.000)***
Total import(1st lag)			0.0000	0.0000
×Exchange rate dollar/yuan			(0.000)*	(0.000)*
Adjusted R^2	0.252	0.252	0.205	0.205
F statistics	445.4	434	333.9	245.6
Kleibergen-Paap rk LM p-value	0.000	0.000	0.002	0.000
Kleibergen-Paap rk Wald F-stat	15.92	11.35	3.551	5.542
Hansen J p-value				.7393

Notes: Dependent variable: log average labour costs per worker per firm. 'Total labour costs per worker' is the wage bill per worker plus welfare expenses (including unemployment insurance) paid by the firm per worker per form. 'Total profits' is the total profits ('after the wage bill') per worker(as same as that in Table 3) plus the 'Total labour costs' per worker per firm. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instrument in column 1 is 'average total profits ('before the wage bill') per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The instrument in column 2 is firm's annual subsidies. The instrument in column 3 is the interaction between the total imports of the firm in the previous year and the exchange rate (US dollars per yuan) in the current year. In column 4, all instruments used in column 1, 2 and 3 are used together. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). The Anderson-Rubin Wald test p-value in column 3 is 0.096.

Table 6: Rent sharing by firm unionisation type

	Unionized Firms	Non-Unionized Firms
Gross Profits	1.355	1.246
	(0.354)***	(0.583)**
Observations	440,675	402,158
Adjusted R^2	0.650	0.577
F statistics	1,110	971.4
Elasticity	0.028	0.028
Lester Range (%)	47.94	41.91
Auxiliary Regression (First-stage)		
Average profits per worker	0.236	0.137
	(0.026)***	(0.025)***
Subsidy	0.00007	0.0003
	(0.000)	(0.000)
Total import (1st lag)	0.00002	0.00002
×		
Exchange rate dollar/yuan	(0.000)	(0.000)**
Adjusted R^2	0.595	0.620
F statistics	62.55	96.1
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	29.01	11.94
Hansen J p-value	0.836	0.301

Notes: The sample is split considering the 2004 variable on whether a union was established in the firm at the time. Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table 7: Rent sharing by capital intensity

	Non-public Firms		Public Firms	
	Labour-intensive	Capital-intensive	Labour-intensive	Capital-intensive
Gross Profits	0.586	0.842	8.203	1.341
	(1.529)	(0.362)**	(2.931)***	(0.995)
Observations	348,827	385,156	97,749	90,510
Adjusted R^2	0.595	0.642	0.645	0.692
F statistics	583.5	784	260	287.1
Elasticity	0.007	0.027	0.073	0.024
Lester Range (%)	11.73	39.38	89.82	37.01
Auxiliary Regression (First-stage)				
Averaged profits per worker	0.045	0.280	0.017	0.170
	(0.013)***	(0.037)***	(0.016)	(0.060)***
Subsidy	0.001	0.000	0.000	0.000
	(0.000)***	(0.000)	(0.000)***	(0.000)**
Total import (1st lag)	0.000	0.000	0.000	-0.000
×Exchange rate dollar/yuan	(0.000)	(0.000)*	(0.000)	(0.000)
Adjusted R^2	0.705	0.591	0.650	0.660
F statistics	67.25	41.69	30.5	15.9
Kleibergen-Paap rk LM p-value	0.000	0.000	0.000	0.001
Kleibergen-Paap rk Wald F-stat	7.224	22.19	2.917	4.315
Hansen J p-value	0.790	0.205	0.283	0.187

Notes: The median capital-labour ratio across all industries, which is used to split the 2-digit industries into two groups, is 39.04 thousands of Yuan per worker. The median capital-labor ratio across each 2-digit industries is used to split the firms within the industries into two group. 'Non-public firms' mainly include private-owned firms and foreign-owned firms; 'Public firms' refer to state-owned firms and collective-owned firms. Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***). See Table B7 for the classification of each industry.

Table 8: Rent sharing by ownership type

	State-owned	Collective-owned	Private-owned	Foreign-owned
Gross Profits	1.893	1.107	2.220	0.349
	(1.300)	(0.420)***	(0.988)**	(0.306)
Observations	71,682	128,279	549,703	232,530
Adjusted R^2	0.749	0.610	0.535	0.661
F statistics	410.6	421.5	1,392	822.9
Elasticity	0.012	0.019	0.044	0.010
Lester Range (%)	38.89	22.35	53.84	19.39
Auxiliary Regression (First-stage)				
Average profits per worker	0.148	0.080	0.079	0.443
	(0.032)***	(0.062)	(0.015)***	(0.055)***
Subsidy	0.00005	0.0022	0.00009	0.0002
	(0.000)	(0.000)***	(0.000)**	(0.000)
Total import (1st lag)	0.0000	-0.00003	0.00003	0.00002
×Exchange rate dollar/yuan	(0.000)	(0.000)	(0.000)	(0.000)*
Adjusted R^2	0.722	0.567	0.502	0.664
F statistics	5.98	72.42	260.4	23.2
Kleibergen-Paap rk LM p-value	0.000	0.000	0.000	0.000
Kleibergen-Paap rk Wald F-stat	7.313	19.62	11.22	23.86
Hansen J p-value	0.796	0.185	0.446	0.086

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table 9: Rent sharing by female share

	below median percentage of female workers	Above median percentage of female workers
Gross Profits	1.381	0.212
	(0.331)***	(0.994)
Observations	412,436	430,258
Adjusted R^2	0.633	0.595
F statistics	885.8	1,255
Elasticity	0.039	0.003
Lester Range (%)	54.84	6.03
Auxiliary Regression (First-stage)		
Average profits per worker	0.236	0.104
	(0.025)***	(0.031)***
Subsidy	0.0002	0.00002
	(0.000)***	(0.000)
Total import (1st lag)	0.00005	0.00001
×Exchange rate dollar/yuan	(0.000)	(0.000)
Adjusted R^2	0.574	0.652
F statistics	91.42	47.07
Kleibergen-Paap rk LM p-value	0.000	0.001
Kleibergen-Paap rk Wald F-stat	35.75	4.334
Hansen J p-value	0.716	0.011

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***). Firms are grouped into two categories, according to the proportion of female employees in each firm in 2004: firms with below and above the median percentage of female workers.

Table 10: Rent sharing by skilled workers share

	Below the median of the ratio of skilled workers	Above the median of the ratio of skilled workers
Gross Profits	1.099	1.374
	(0.684)	(0.347)***
Observations	404,969	437,766
Adjusted R^2	0.574	0.647
F statistics	1,055	1,019
Elasticity	0.020	0.034
Lester Range (%)	34.63	50.98
Auxiliary Regression (First-stage)		
Average profits per worker	0.112	0.232
	(0.030)***	(0.024)***
Subsidy	0.0002	0.0001
	(0.000)	(0.000)*
Total import (1st lag)	0.00002	0.00001
×Exchange rate dollar/yuan	(0.000)	(0.000)
Adjusted R^2	0.653	0.574
F statistics	73.16	70.05
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	6.229	34.37
Hansen J p-value	0.841	0.006

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***). Skilled workers are defined as workers with technical titles, including workers with senior, middle and junior technical titles, plus senior technicians and other technicians. Firms are grouped into two categories, according to the proportion of skilled workers in each firm in 2004: firms with below and above the median percentage of skilled workers.

Table 11: Rent sharing by changes in profits

	Decrease in Gross Profit	Unchanged Gross Profits	Increase in Gross Profits
Gross Profits	1.184	1.033	1.123
	(0.635)*	(1.987)	(0.322)***
Observations	530,760	228,404	638,749
Adjusted R^2	0.637	0.708	0.627
F statistics	1,412	518.4	1,505
Elasticity	0.017	0.032	0.024
Lester Range (%)	36.16	36.32	39.96
Auxiliary Regression (First-stage)			
Average profits per worker	0.115	0.062	0.266
	(0.026)***	(0.028)**	(0.027)***
Subsidy	0.0001	0.0001	0.0001
	(0.000)*	(0.000)	(0.000)**
Total import (1st lag)	0.00003	-0.0000	0.00002
× Exchange rate dollar/yuan	(0.000)	(0.000)	(0.000)*
Adjusted R^2	0.560	0.873	0.586
F statistics	36.39	96.47	116.8
Kleibergen-Paap rk LM p-value	0.000	0.024	0.000
Kleibergen-Paap rk Wald F-stat	8.466	1.925	36.61
Hansen J p-value	0.750	0.755	0.727

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed FEs are fixed effects for each combination of a year, a two-digit industry and a province. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***). Firms in the 'decrease in gross profits' category are those whose gross profits drop by 10% or more compared to the previous year; firms with unchanged gross profits are those whose change rate of gross profits varies between -10% and +20%; the remaining are firms with increase in gross profits of more than 20%. Instruments are the same as those in Table 3 - column 4.

Table 12: Rent sharing: the role of rural labour (Jiangsu province)

	(1)	(2)
Gross Profits	2.735	2.385
	(0.623)***	(0.692)***
Rural employees	0.000	0.000
	(0.001)	(0.001)
Gross profits	-0.027	-0.025
× **Rural employees**	(0.008)***	(0.008)***
Observations	141,919	141,919
Adjusted R^2	0.625	0.631
F statistics	287.3	289.2
Firm Characteristics	Yes	Yes
Year FE	Yes	
Firm FE	Yes	Yes
City FE		Yes
Crossed FE		Yes
Elasticity	0.028	0.023
Lester Range (%)	47.63	39.69
Auxiliary Regression (First-stage)		
Adjusted R^2	0.442	0.446
F statistics	25.01	14.79
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	5.545	7.169
Hansen J p-value	0.245	0.164

Notes: Dependent variable: log average wage per worker per firm in the Jiangsu province. 'Gross profits' is the total profits ('after the wage bill') per worker per firm of Jiangsu province. 'Rural employees' is the number of employees employed in rural areas in each municipal district, county and year. Crossed FEs are fixed effects for each combination of a year and a two-digit industry. Instruments are the same as those in Table 3 - column 4. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table 13: Descriptive Statistics: year 2004-2007

Variables	**Mean**	**StDev**
Firm characteristics (N=1,028,184		
Wages per worker	16.359	15.832
Gross Profits per worker (after the wage bill)	0.0217	0.0937
Gross Profits per worker (before the wage bill)	0.0386	0.0976
Net Profits per worker	0.0184	0.0869
Value Added per worker	0.1254	0.3099
Firm size	228.63	847.80
Firm age	9.0667	9.0928
Capital per worker	85.652	214.741
Foreign-owned firms	0.2192	0.4137
Minimum Wages/Wages per worker	0.5165	0.9109
Weighted analysis (number of workers per firms)		
Wages per worker	18.623	17.862
Gross Profits per worker (after the wage bill)	0.0234	0.0810
Gross Profits per worker (before the wage bill)	0.0426	0.0890
Net Profits per worker	0.0195	0.0706
Value Added per worker	0.1196	0.2986
Minimum Wages/Wages per worker	0.4745	0.9796
County characteristics (N=10,898)		
Minimum Wages	5.1168	1.2155
Average Wages per worker	14.2858	7.7215
Minimum Wages/Average Wages per worker	0.4130	0.1553
Average Gross Profits per worker	0.0189	0.0356
Number of workers	21,571	64,009

Notes: Own calculations based on the Chinese Industry Enterprises Database. The definitions and units of variables that reflect firm characteristics are the same as in Table 1. The monetary variables 'Minimum Wages, County' and 'Average wages per worker, County' are in thousands of Yuan(RMB). The monetary variable 'Average Profits per worker, County' is in millions of Yuan(RMB). 'Number of workers' is the number of total workers in each district or county.

Table 14: Rent sharing: the role of minimum wages

	log minimum wages (county)	log average wages per worker (county)		
	(1)	(2)	(3)	(4)
Averaged Profits	0.146	1.637	1.629	3.499
	(0.051)***	(0.197)***	(0.197)***	(0.560)***
Minimum wages			0.018	0.025
			(0.007)***	(0.007)***
Average Profits				-0.352
×Minimum wages				(0.103)***
Observations	10,859	10,859	10,859	10,859
Adjusted R^2	0.873	0.741	0.742	0.742
F statistics	2,092,590	738,475	493,047	370,561
Year FE	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes
Elasticity	0.003	0.031	0.031	0.032
Lester Range (%)	2.08	23.29	23.17	24.18

Notes: Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table 15: Rent sharing: the role of labour market concentration

	(1)	(2)	(3)	(4)	(5)	(6)
Gross Profits	1.663	1.186	1.462	1.217	1.551	1.556
	(0.175)***	(0.313)***	(0.177)***	(0.312)***	(0.177)***	(0.174)***
SFEMP	-0.401	-0.289	-1.213	-0.865		
	(0.039)***	(0.039)***	(0.086)***	(0.087)***		
Gross Profits	3.426	2.985	20.433	14.275		
× **SFEMP**	(0.935)***	(0.882)***	(3.110)***	(3.096)***		
SFEMP^2			1.158	0.803		
			(0.099)***	(0.096)***		
Gross Profits			-24.695	-16.092		
× **SFEMP^2**			(3.977)***	(3.884)***		
HHI					-0.271	-0.277
					(0.029)***	(0.029)***
Gross Profits					5.017	4.587
×**HHI**					(1.234)***	(1.206)***
Observations	1,010,725	1,010,411	1,010,725	1,010,411	1,010,725	1,009,789
Adjusted R^2	0.616	0.633	0.619	0.632	0.616	0.620
F statistics	1,679	1,794	1,337	1,395	1,698	1,686
Firm Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes		Yes		Yes	Yes
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Crossed FEs		Yes		Yes		Yes
Elasticity	0.035	0.025			0.037	0.035
Lester Range (%)	57.46	41.16			58.13	57.83
Auxiliary Regression (First-stage)						
Adjusted R^2	0.594	0.600	0.594	0.600	0.594	0.595
F statistics	146.4	98.13	129.1	80.87	169.3	161.5
K-P rk LM p-value	0.000	0.000	0.000	0.000	0.000	0.000
K-P rk Wald F-stat	79.04	21.49	51.41	14.84	80.49	78.85
Hansen J p-value	0.121	0.180	0.253	0.202	0.070	0.069

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. 'SFEMP' is the proportion of the firm's employment in total employment in each municipal district and county per year. 'SFEMP^2' is the square of 'SFEMP'. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. 'HHI' is calculated at the district or county level as the sum of SFEMP^2 in the district(county)-year level. Crossed FEs in columns 2 and 4 are fixed effects for each combination of a year, a two-digit industry and a province; while crossed effects in column 6 are the fixed effects for each combination of a province and a two-digit industry. Instruments are the same as those in Table 3 - column 4. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

A Appendix: Robustness: alternative measures of rents (net wages; gross profits before the wage bill; value added)

Table A1: Rent sharing, net profits, OLS models

	(1)	(2)	(3)	(4)	(5)
Net Profits	0.734	0.542	0.229	0.199	0.452
	(0.167)***	(0.124)***	(0.063)***	(0.056)***	(0.037)***
Firm size		-0.009	-0.143	-0.148	-0.163
		(0.001)***	(0.002)***	(0.002)***	(0.004)***
Capital per worker		0.071	0.063	0.063	0.078
		(0.001)***	(0.001)***	(0.001)***	(0.002)***
Firm age		0.000	0.000	0.000	0.001
		(0.000)***	(0.000)	(0.000)***	(0.000)***
Foreign		0.357	0.045	0.050	0.019
		(0.002)***	(0.004)***	(0.004)***	(0.009)**
Constant	2.451	2.163	2.914	2.934	3.301
	(0.003)***	(0.003)***	(0.008)***	(0.008)***	(0.026)***
Year FE	Yes	Yes	Yes		
Firm FE			Yes	Yes	Yes
Crossed FE				Yes	Yes
Observations	1,604,000	1,604,000	1,490,236	1,489,980	1,489,980
Adjusted R^2	0.136	0.211	0.601	0.612	0.715
F statistic	13,290,899	4,873,024	9,172,816	9,432,074	1,828,262
Elasticity	0.011	0.008	0.004	0.003	0.007
Lester Range (%)	26.61	19.63	8.17	7.12	11.52

Notes: Dependent variable: log average wage per worker per firm. 'Net profits' is profits per worker per firm after subtracting profits taxes. The control variables 'Firm size' and 'Capital per worker' are in logs. In column 5, we use the number of workers in each firm-year as weights (the remaining regressions are un-weighted). Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table A2: Rent sharing, net profits, IV models

	(1)	(2)	(3)	(4)
Net Profits	1.260	1.767	2.936	1.519
	(0.370)***	(0.725)**	(1.665)*	(0.360)***
Firm Characteristics	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Crossed FE	Yes	Yes	Yes	Yes
Observations	1,489,967	1,489,980	1,010,419	1,010,411
Adjusted R^2	0.601	0.587	0.594	0.629
F statistics	3,710	3,486	2,073	2,450
Elasticity	0.020	0.028	0.051	0.026
Lester Range (%)	44.98	63.1	90.39	46.76
Auxiliary Regression (First-stage)				
Average profits per worker	0.183			.188
	(0.016)***			(0.019)***
Subsidy		0.0001		0.0001
		(0.000)***		(0.000)***
Total import (1st lag)			0.00002	0.00002
×Exchange rate dollar/yuan			(0.000)*	(0.000)*
Adjusted R^2	0.467	0.467	0.586	0.587
F statistics	204	184.4	161.2	128.8
Kleibergen-Paap rk LM p-value	0.000	0.000	0.011	0.000
Kleibergen-Paap rk Wald F-stat	129.6	11.65	2.936	38.5
Hansen J p-value				0.384

Notes: Dependent variable: log average wage per worker per firm. 'Net profits' is the total profits per worker per firm after subtracting profits taxes. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instrument 'Average profits per worker' is the average net profits per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The other instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). The Anderson-Rubin Wald test p-value in column 3 is 0.096.

Table A3: Rent sharing, gross profits before the wage bill, OLS models

	(1)	(2)	(3)	(4)	(5)
Gross Profits	0.885	0.743	0.419	0.403	0.467
	(0.302)***	(0.252)***	(0.189)**	(0.180)**	(0.266)*
Firm size		-0.008	-0.141	-0.146	-0.162
		(0.001)***	(0.002)***	(0.002)***	(0.004)***
Capital per worker		0.068	0.062	0.061	0.077
		(0.003)***	(0.001)***	(0.001)***	(0.002)***
Firm age		0.000	0.000	0.000	0.001
		(0.000)***	(0.000)	(0.000)***	(0.000)***
Foreign		0.350	0.044	0.050	0.019
		(0.004)***	(0.004)***	(0.004)***	(0.009)**
Constant	2.432	2.155	2.897	2.917	3.285
	(0.010)***	(0.004)***	(0.012)***	(0.013)***	(0.030)***
Year FE	Yes	Yes	Yes		
Firm FE			Yes	Yes	Yes
Crossed FE				Yes	Yes
Observations	1,604,000	1,604,000	1,490,236	1,489,980	1,489,980
Adjusted R^2	0.155	0.226	0.606	0.616	0.718
F statistic	13,754,769	5,014,767	9,316,764	9,574,622	1,868,006
Elasticity	0.030	0.025	0.014	0.014	0.017
Lester Range (%)	45.1	37.86	21.14	20.34	20.34

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('before the wage bill') per worker per firm. In column 5, we use the number of workers in each firm-year as weights (the remaining regressions are un-weighted). Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Values in parentheses are robust standard errors. Significant levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table A4: Rent sharing, value added, OLS models

	(1)	(2)	(3)	(4)
Value Added	0.312	0.233	0.121	0.111
	(0.052)***	(0.041)***	(0.029)***	(0.028)***
Firm size		-0.005	-0.138	-0.143
		(0.001)***	(0.002)***	(0.002)***
Capital per worker		0.066	0.061	0.061
		(0.002)***	(0.001)***	(0.001)***
Firm age		0.000	0.000	0.000
		(0.000)***	(0.000)	(0.000)***
Foreign		0.355	0.044	0.050
		(0.002)***	(0.004)***	(0.004)***
Constant	2.428	2.147	2.884	2.906
	(0.006)***	(0.004)***	(0.011)***	(0.011)***
Observations	1,604,000	1,604,000	1,490,236	1,489,980
Adjusted R^2	0.144	0.215	0.602	0.613
F statistics	13,478,849	4,913,196	9,202,375	9,458,972
Year FE	Yes	Yes	Yes	
Firm FE			Yes	Yes
Crossed FE				Yes
Elasticity	0.034	0.025	0.013	0.012
Lester Range (%)	35.95	26.82	14.06	12.89

Notes: Dependent variable: log average wage per worker per firm. 'Value added' is the value added per worker per firm. The control variables 'Firm size' and 'Capital per worker' are in logs. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***).

Table A5: Rent sharing, value added, IV models

	(1)	(2)	(3)	(4)
Value Added	0.357	0.979	0.431	0.524
	(0.164)**	(0.571)*	(0.232)*	(0.188)***
Firm Characteristics	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Crossed FE	Yes	Yes	Yes	Yes
Observations	1,489,967	1,489,980	1,010,419	1,010,411
Adjusted R^2	0.607	0.534	0.628	0.621
F statistics	3,798	2,660	2,324	2,189
Elasticity	0.039	0.107	0.050	0.061
Lester Range (%)	41.56	113.9	49.21	59.74
Auxiliary Regression (First-stage)				
Average sales per worker	0.033			0.028
	(0.006)***			(0.008)***
Subsidy		0.0002		0.0001
		(0.000)*		(0.000)
Total import (1st lag)			0.0001	0.0001
×Exchange rate dollar/yuan			(0.000)*	(0.000)*
Adjusted R^2	0.485	0.485	0.520	0.520
F statistics	720.7	715.2	405.3	290.1
Kleibergen-Paap rk LM p-value	0.000	0.030	0.003	0.000
Kleibergen-Paap rk Wald F-stat	34.88	3.369	3.695	4.793
Hansen J p-value				0.438

Notes: Dependent variable: log average wage per worker per firm. 'Value added' is the value added per worker per firm. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instrument 'Average sales per worker' is the average sales per worker of firms in the same four-digit industry and in the same year but in other cities (of the same province and of other provinces). The other instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). The Anderson-Rubin Wald test p-value in column 3 is 0.096.

B Appendix: Additional descriptives and robustness checks

Table B1: Number of firms and workers per year

Year	All firms			Importing firms		
	Firms	Workers	Workers per firm	Firms	Workers	Workers per firm
2000	125,798	41,662,192	331	13,434	7,774,624	579
2001	136,796	41,524,315	304	15,707	8,729,683	556
2002	146,382	42,384,259	290	17,174	9,585,423	558
2003	166,840	46,322,681	278	19,473	10,720,960	551
2004	228,455	51,376,357	225	28,188	13,731,899	487
2005	236,189	56,574,219	240	28,122	14,736,443	524
2006	264,337	60,928,943	230	28,609	14,925,172	522
2007	299,203	66,195,942	221	45,407	20,210,991	445
Annual	218,937	53,532,008	245	28,387	14,079,353	496

Notes: Own calculations based on the Chinese Industry Enterprises Database.

Table B2: Distribution of firms per years in the data

Year	All firms	Importing firms
1 year	113,764	29,687
2 year	77,610	11,852
3 year	61,666	8,690
4 year	82,590	7,930
5 year	32,958	4,004
6 year	25,143	3,311
7 year	27,094	3,049
8 year	39,294	2,963

Notes: Own calculations based on the Chinese Industry Enterprises Database. Numbers of firms (all firms, firms that import) that are present in the data in each number of years.

Table B3: Rent sharing by firm size

	Small-size Firms	Large-size Firms
Gross Profits	0.077	1.013
	(0.126)	(0.335)***
Observations	422,864	545,166
Adjusted R^2	0.622	0.676
F statistics	841.3	1,150
Elasticity	0.002	0.017
Lester Range (%)	3.19	26.76
Auxiliary Regression (First-stage)		
Average profits per worker	0.117	0.241
	(0.036)***	(0.020)***
Subsidy	0.0002	0.0001
	(0.000)	(0.000)**
Total import (1st lag)	0.0058	0.0000
×Exchange rate dollar/yuan	(0.002)***	(0.000)
Adjusted R^2	0.642	0.593
F statistics	71.87	106.4
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	7.958	54.51
Hansen J p-value	0.193	0.087

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***).

Table B4: Rent sharing by firm age

	New Firms	Old Firms
Gross Profits	1.264	1.372
	(0.626)**	(0.454)***
Observations	435,578	526,859
Adjusted R^2	0.600	0.672
F statistics	1,006	1,322
Elasticity	0.029	0.026
Lester Range (%)	46.23	43.34
Auxiliary Regression (First-stage)		
Average profits per worker	0.153	0.187
	(0.028)***	(0.024)***
Subsidy	0.0002	0.0001
	(0.000)	(0.000)*
Total import (1st lag)	0.00005	0.00001
×Exchange rate dollar/yuan	(0.000)*	(0.000)
Adjusted R^2	0.661	0.577
F statistics	105.5	65.72
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	12.18	23.87
Hansen J p-value	0.934	0.043

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***).

Table B5: Rent sharing by firms regions

	Eastern Area	Central Area	Western Area
Gross Profits	1.033	3.983	1.733
	(0.345)***	(1.961)**	(0.608)***
Observations	763,397	152,501	94,504
Adjusted R^2	0.614	0.526	0.625
F statistics	1,919	319.4	276.1
Elasticity	0.023	0.076	0.022
Lester Range (%)	36.32	128.1	39.49
Auxiliary Regression (First-stage)			
Average profits per worker	0.206	0.094	0.237
	(0.023)***	(0.028)***	(0.039)***
Subsidy	0.0001	0.00009	0.0007
	(0.000)*	(0.000)	(0.000)***
Total import (1st lag)	0.00002	0.0001	0.00009
×Exchange rate dollar/yuan	(0.000)	(0.000)	(0.000)*
Adjusted R^2	0.593	0.657	0.570
F statistics	101.9	96.01	17.03
Kleibergen-Paap rk LM p-value	0.000	0.000	0.000
Kleibergen-Paap rk Wald F-stat	30.56	5.137	13.72
Hansen J p-value	0.331	0.356	0.312

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01(***). Anderson-Rubin Wald test p-value in column 2 is 0.001.

Table B6: Rent sharing: IV results by schooling

	Below the median of the average years of schooling	Above the median of the average years of schooling
Gross Profits	0.931	1.344
	(0.613)	(0.345)***
Observations	421,590	421,169
Adjusted. R^2	0.548	0.647
F statistics	953.7	1,109
Elasticity	0.014	0.038
Lester Range (%)	15.76	61.42
Auxiliary Regression (First-stage)		
Average profits per worker	0.095	0.236
	(0.024)***	(0.026)***
Subsidy	0.0003	0.001
	(0.000)	(0.000)**
Total import (1st lag)	0.00003	0.00002
×Exchange rate dollar/yuan	(0.000)	(0.000)
Adjusted R^2	0.551	0.608
F statistics	109.3	65.94
Kleibergen-Paap rk LM p-value	0.000	0.000
Kleibergen-Paap rk Wald F-stat	6.438	31.29
Hansen J p-value	0.001	0.722

Notes: Dependent variable: log average wage per worker per firm. 'Gross profits' is the total profits ('after the wage bill') per worker per firm. All specifications include firm and crossed effects and firm controls. Crossed Effects are fixed effects for each combination of a year, a two-digit industry and a province. The instruments are the same as those in Table 3. Values in parentheses are robust standard errors. Significance levels: 0.1 (*); 0.05 (**); and 0.01 (***). Anderson-Rubin Wald test p-value in column 1 is 0.080. We consider the proportion of employees with different academic qualifications in each firm in 2004 to calculate the average years of schooling of employees in each firms, and then we compute the median average years of schooling across all firms, again in 2004. Firms are then grouped into two categories: firms with below the median of average years of schooling and firms with above the median of average years of schooling. Years of schooling for different academic qualifications: Junior high school and below, 7.5; High school, 12; College, 15; University, 16; Graduate, 19.

Table B7: Chinese Industry Classification

Labour-intensive Industry		Capital-intensive Industry	
code	name	code	name
17	Manufacture of Textile	13	Processing of Food from Agricultural Products
18	Manufacture of Textile Wearing Apparel, Footwear, and Caps	14	Manufacture of Foods
19	Manufacture of Leather, Fur, Feather and Related Products	15	Manufacture of Beverages
20	Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	16	Manufacture of Tobacco
21	Manufacture of Furniture	22	Manufacture of Paper and Paper Products
24	Manufacture of Articles for Culture, Education and Sport Activity	23	Printing, Reproduction of Recording Media
29	Manufacture of Rubber	25	Processing of Petroleum, Coking, Processing of Nuclear Fuel
34	Manufacture of Metal Products	26	Manufacture of Raw Chemical Materials and Chemical Products
35	Manufacture of General Purpose Machinery	27	Manufacture of Medicines
37	Manufacture of Transport Equipment	28	Manufacture of Chemical Fibers
39	Manufacture of Electrical Machinery and Equipment	30	Manufacture of Plastics
40	Manufacture of Communication Equipment, Computers and Other Electronic Equipment	31	Manufacture of Non-metallic Mineral Products
41	Manufacture of Measuring Instruments and Machinery for Cultural Activity and Office Work	32	Smelting and Pressing of Ferrous Metals
42	Manufacture of Artwork and Other Manufacturing	33	Smelting and Pressing of Non-ferrous Metals
43	Recycling and Disposal of Waste	36	Manufacture of Special Purpose Machinery

Notes: According to the median capital-labour ratio of enterprises in each 2-digit industry, the industries are sorted into labor-intensive industries and capital-intensive industries. Specifically, following Lu, 2010,Dai et al., 2014, we take the median capital-labor ratio of all enterprises in each 2-digit industry as the capital-labor ratio of the industry, and then take the median capital-labour ratio of industries as the dividing point, the industries are sorted into labor-intensive and capital-intensive industries. The median capital-labour ratio of industry is 39.04 thousands Yuan/perosn.

Figure 3: Distribution of the share of each firm's employment in its local labour market in 2004

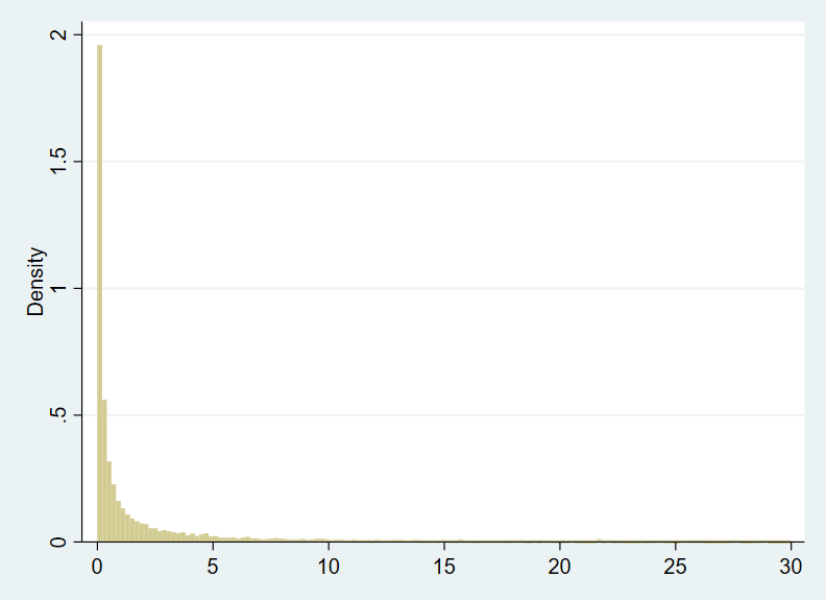


Figure 4: Distribution of the share of each firm's sales in its four-digit industry in 2004

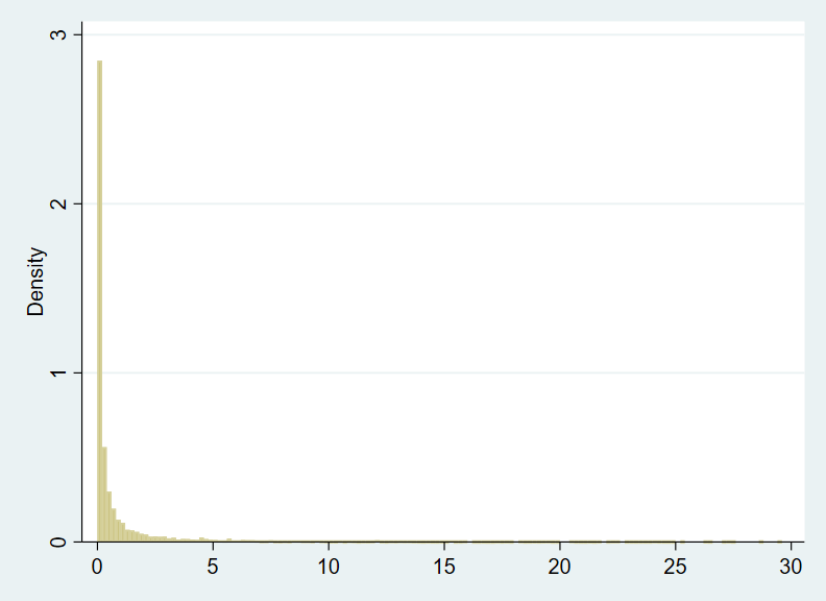


Figure 5: Herfindahl index (local labour market employment shares) in 2004

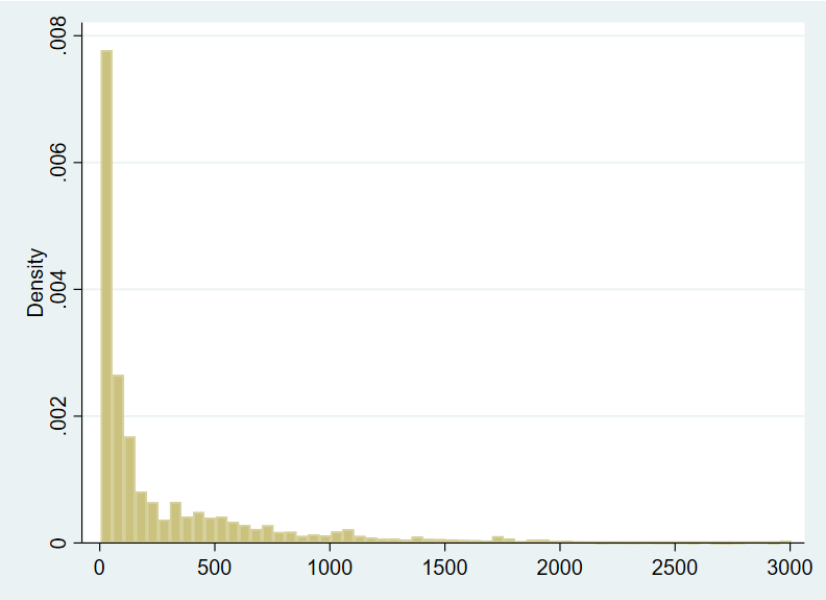


Figure 6: Herfindahl index (four-digit industry sales share) in 2004

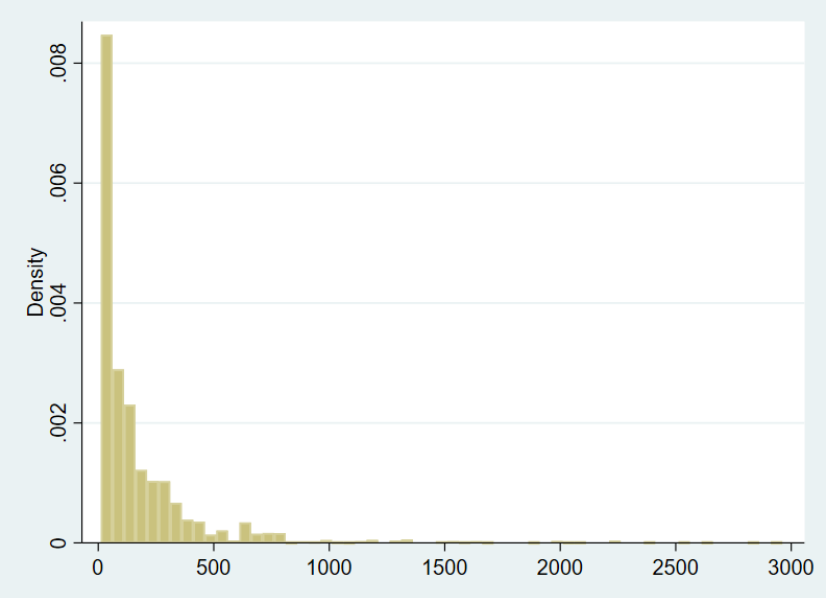


Figure 7: Firm's labour market employment and four-digit industry sales in 2004