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ABSTRACT

We document and discuss the implications of a sharp increase in the regional dispersion of skill premia in China in recent years. This has previously been little noted or discussed. We use three urban household surveys for 1995, 2002, and 2007 and estimate skill premia at provincial and city levels. Results show an increase in the skill premium across all regions between 1995 and 2002, but only coastal regions show significant increases in skill premia between 2002 and 2007. For 2007, coastal regions also have much higher within region wage inequality and this contributes more to overall urban wage inequality than within region inequality of non-coastal regions. Using a fixed effects model at city level, we find that ownership restructuring is a significant factor in driving up skill premia during the first period, and that the ongoing process of China's integration into the global economy plays a significant and regionally concentrated role in the second period.

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1. Introduction

The behavior of the skill premium (the wage differential between skilled and unskilled labor) is central to an understanding of the evolution of inequality in urban China. There has been a large amount of research trying to estimate the skill premium over time, usually measured as the return to education (see Zhang et al. 2005; Li and Ding 2003).[1] How the skill premia has evolved within regions and how this may have affected overall inequality is, however, largely neglected in literature.

Here, we use three Chinese urban household surveys for 1995, 2002, and 2007 to estimate skill premia at a provincial and city level for each year. We find substantial yearly dispersion across regions but also find an increase in skill premia across all regions between 1995 and 2002, while only coastal regions witness significant increases in skill premia between 2002 and 2007.

We then use the cross regional variation in skill premia within each year to explore which factors account for the increase in skill premia. We construct a panel data set at city level and use a fixed effects model. We find a significant relationship between export activity and increases in skill premia. This is stronger in the period between 2002 and 2007, suggesting that China's entry into WTO and wider integration into the global economy after 2001 may have played a significant role. In the period between 1995 and 2002, institutional change (i.e. ownership restructuring) seemingly plays key role in driving up the skill premium in the various regions. While

[1] There are also many estimates of the return to education across other divides. Dong and Bowles (2002), for instance, estimate the return to education by ownership.

there has been research that explores the relationship between inequality and China's globalization process (Wan et al. 2007, Zhang and Zhang 2002, Wei and Wu, 2003, Cai et al. 2010), little of this studies the impacts of structural changes brought on by China's entry into WTO.

We also suggest that investigating how the regional distribution of skill premia changes can also help in providing a more complete understanding of changes in urban wage inequality. If wage inequality is decomposed into between-region inequality and within-region inequality, the within-region inequality can in turn be expressed by a weighted average of the inequality for all regions. The various regions in China show different inequality and hence different contributions to overall (residual) wage inequality. We find that, by 2007, coastal regions have much higher within region inequality (because of higher skill premia) and this contributes more to overall urban wage inequality, a feature that seemingly has not yet been documented in the literature.

This paper is organized as follows. We discuss literature on skill premia in section 2. Section 3 describes our data. Section 4 reports estimates of skill premia, their regional distribution and evolution overtime. Section 5 investigates the factors underlying patterns of regional skill premia over time and also discusses the implications for overall urban wage inequality. Section 6 concludes.

2. Why Is The Regional Distribution of Skill Premium Important in China?

China is a large developing country in economic transition and its various regions have very different levels of economic development (Schott 2006). Earlier research has concluded that regional disparity is a major contributor to overall inequality (see Gustafsson et al. 2008). The literature has, however, neglected the feature that the relative wages of skilled and unskilled labor may be different across regions.

Given the large amount of effort devoted in previous literature to trying to estimate skill premia, the extension to include the regional dimension is a natural further step. It seems well established that wage determination mechanisms were significantly different between different ownership types of firms in the 1990s, with private sector firms sharing a higher skill premium (Meng 2000, Dong and Bowles 2002, Xing 2008, Zhang et al. 2005). Meanwhile, different regions had a different firm ownership mix. In 2008 for example, the registered employment share in SOEs is around 30% for most coastal provinces (Zhejiang (27%) and Fujian (32%) for instance). For some other provinces such as Jiangxi, Guangxi, Shaanxi, Gansu, Qinghai, the shares are still above 70% (NBS, 2009) [2]. The above implies that different regions have different skill premia.

Another reason for regional unevenness is differential exposure to trade activity. The policy of opening up was first implemented in the east and led to rapid growth of

[2] These shares are calculated using the number of staff and workers in state owned units divided by the total number of registered employments. All numbers are for urban areas (NBS, 2009: table 4-8). Taking into account those not registered, the SOE shares may overestimate the real shares.

exports and FDI inflows. In 1995, the average share of exports in GDP in coastal provinces was 32%, while that for non-coastal provinces was below 7%.[3] China experienced a sharp increase in trade activity in a relatively short period of time after its entry into WTO (Wan et al. 2007, Branstetter and Lardy 2006), and most of the increase was in coastal regions. By 2007, the average export share in GDP in coastal provinces had reached 45%, while that for non-coastal provinces was still below 8%. Along with rapid export growth, China's exports were becoming more sophisticated with resources moving from agriculture and textiles into machinery, electronics, and assembly (Schott 2006, Amiti and Freund 2008, Wang and Wei 2008). This upgrading of the export sector increased the demand for and relative wages of more skilled labor in coastal regions.

The above regional patterns reflect in part the policies of the Chinese government. In the earlier reform period, the central government offered not only preferential policies to but also more investment to coastal regions to encourage exports and attract FDI. The five Special Economic Zones (SEZs)[4], for example, are all in coastal regions (Wang and Wei 2008). In the late 1990s however, because of the widening regional gap, preferential policies were more often given to the central and western regions. Many policies were also location specific, such as policies to developing the Pudong New District in Shanghai, the Binhai New District in Tianjin,

[3] Coastal provinces include Beijing, Fujian, Guangdong, Hainan, Hebei, Jiangsu, Liaoning, Shangdong, Shanghai, Tianjin, and Zhejiang. Non-coastal provinces include Anhui, Gansu, Guangxi, Guizhou, Henan, Heilongjiang, Hubei, Hunan, Jilin, Jiangxi, Inner Mongolia, Ningxia, Qinghai, Shanxi, Shaanxi, Sichuan, Tibet, Xinjiang, Yunnan, and Chongqing. Export shares are first calculated for each province, and then averaged for coastal and non-coastal regions. The shares for 2007 are calculated the same way.

[4] Shenzhen, Zhuhai, Shantou, Xiamen, and Hainan.

and the more recent strategy to revitalize the Old Industry Base of the Northeast. These often involve preferential policies by the central government and more investment in infrastructure.

Finally but by no means the least, several features of China's labor market have made this process less effective, although labor migration still tends to equalize relative wage gaps among regions. In particular, the Hukou system is still a major barrier to regional mobility of labor. Many locally provided public services such as health care and schooling are still not available to residents without local urban Hukou. This significantly raises migration costs (see Cai et al. 2009, Xing 2010 for a more detailed description of China's institutional arrangement of Hukou system). The high price of housing is another factor preventing people moving from low skill premium locations to high skill premium locations.

All of the above are also often cited as reasons for growing regional disparity in income levels, instead of changes in the relative wages of skilled and unskilled labor. Existing literature has largely neglected the possibility that these regional imbalances (in trade policies for example) may have different impacts on individuals with different skills. In the same spirit, mobility restrictions such as Hukou also have different effects on skilled and unskilled labor. As skilled workers demand more permanent positions, they are more sensitive to the availability of housing, social security coverage, and other public services.

The neglect of regional dispersion of skill premia in previous literature is partly

due to limitations of data. Most existing research emphasizes regional disparities based on aggregate data, which makes the discussion of skill premium difficult. Also, while there is usually a clear relationship between economic development and average regional income (the regional income level is often used as proxy for its economic development level), the relationship between relative wages and economic development is not unambiguous.

3. Data and Summary Statistics

Here, we use data from three China Household Income Project (CHIP) surveys for 1995, 2002, and 2007 to estimate the regional dispersion of skill premia over time. The CHIP data is known for its high quality and national representativeness. In 1995, 2002, and 2007, the urban survey covered 11, 12, and 16 provinces, autonomous regions, or municipalities, which also included a wide variety of regions in terms of geography and economic development. Although this is not formally constructed as a panel data set, the provinces and the cities covered by these surveys do not change much, allowing comparisons between different years. In 1995 and 2002, the survey collected information from Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Sichuan, Chongqing, Yunnan, and Guansu. The only difference after 1997 is that Chongqing is separated from Sichuan Province as a municipality. More provinces are included in the 2007 survey (the new municipalities or provinces are Shanghai, Zhejiang, Fujian, and Hunan) while those in the previous surveys are retained. We can thus construct a panel data at city level (though unbalanced), which allows us to control for time-invariant unobservables.

In using the CHIP data, we retain information on all males aged 22 to 60, and on females aged 22 to 55. We keep only those over 22 because according to China's education system, people typically finish college education at age 22. The age thresholds of 60 and 55 for males and females reflect current arrangements for retirement age. We use labor incomes of urban workers. There are two parts to labor

income: regular wages and subsidies and other labor income. All income data are deflated to 1995 RMB prices using the national CPI.

Table 1 provides summary statistics, which give a sense of the evolution of China's labor market from 1995 to 2007. Both the average ages and education levels increased continuously over these years. In 1995, the average age of the urban working population was 39.5 years old. It increased to 41.5 in 2002 and then further to 42.3 in 2007. In terms of education, the average years of schooling increased from 10.8 in 1995 to 11.3 in 2002 and to 12.8 in 2007. Looking at different education levels, a more detailed pattern of education expansion emerges. The share of the population with tertiary education increased significantly between 2002 and 2007. Columns 1 to 3 in Table 2 report the share of skilled workers by province. Skilled labor includes those with college degrees (3 or 4 years) or above and those with technical school degrees. Those with high school degrees or below are classified as unskilled workers. As a whole, the fraction of skilled workers increased from 40.7% in 1995 to 43.6% in 2002 and to 53% in 2007, with significant differences among regions.

The change in the shares of labor force for different firm ownership largely reflects the restructuring process in urban China. In the mid 1990s, nearly all the workforce was employed in the public sector of various forms. By 2007, however, that share had decreased sharply to 62%. On the other hand, workers in the private sector increased significantly from negligible (2%) in 1995 to nearly 40% in 2007.

Table 2 reports income levels, inequality measures, and the skilled worker shares

for different provinces for different years. There were significant increases in income between 1995 and 2002 and between 2002 and 2007. Annual average wages increased from 6100 Yuan in 1995 to 9530 Yuan in 2002 and further to 18253 Yuan in 2007, nearly tripling in 12 years. Data also indicate that both income levels and income growth were unbalanced across provinces, with coastal regions having much higher income levels and growth rates.

In terms of Gini coefficients (column 4-6), there was a significant increase in inequality for every province between 1995 and 2002. On the whole, the Gini coefficient increased significantly from 0.296 to 0.372. For the period 2002-2007, increases in Gini coefficients were not as large as those in the first period, with the whole sample Gini increasing from 0.372 in 2002 to 0.407 in 2007. But the change was different for different regions. For hinterland provinces, the Gini coefficients even declined (Shanxi and Henan for example), while for coastal provinces, Gini coefficients kept rising (Jiangsu for example). We also provide generalized entropy measures of inequality with sensitivity parameter 2 (hereafter GE(2)), which can be decomposed by region. They show similar patterns to the Gini coefficients. The shares of the skilled worker increased for most provinces, and there were more increases between 2002 and 2007 than between 1995 and 2002. The pace of increase was different for different province.

4. The Regional Distribution of Skill Premia (Returns to Education)

4.1 Wage Levels of Skilled and Unskilled Workers and Skill Premium

Average wage levels for skilled and unskilled labor and for all workers by province are reported in Figure 1. To show regional differentials, we use the export share in GDP as the source of regional variation in the horizontal axis. Trade activity varies a lot across regions, and is highly correlated with regional economic development levels. Changes in trading volume are also a major potential explanatory variable for the changing regional distribution of skill premia.

We concentrate on the income gap between skilled and unskilled labor (a crude measure of skill premium), and how these gaps differ among different provinces and how the pattern evolves over time (see Figure 1). In the mid 1990s, the income gaps were moderate, with the skilled earning higher than the unskilled across different provinces. In 2002, the income gap for almost all provinces increased significantly, with some indications that the skilled-unskilled gap in coastal provinces was larger. In 2007, the skilled-unskilled gap in coastal provinces was still growing while in non-coastal regions, no such trend appeared. Thus skilled workers in coastal regions have higher wages relative to unskilled workers than their non-coastal counterparts. Regional disparity for unskilled workers also exists. This disparity is not as noticeable as for skilled workers and for unskilled workers in previous years.

Results in Figure 1 indicate that there was a significant increase in the skill premium for all provinces in the late 1990s, but the changes in skill premia for

different provinces show different patterns for the period 2002 to 2007. Coastal regions face an increase in the skill premium, while in non-coastal regions the skill premium did not increase.

These results do not control for some key factors. First, the skilled-unskilled classification does not take into account a number of individual characteristics. For example, experience may be related to accumulation of human capital (both general and specific), and if coastal and non-coastal provinces have a different age (and therefore experience) structure, the gap between skilled and unskilled may be partly due to the different age structure of different regions. The skill premium may be influenced by ownership structure, industry composition, and other factors. In particular, if rent accrues to ownership or industry affiliation, the skilled-unskilled gap may be heavily a reflection of different regions having different ownership or industrial structures.

Non-work rates may also be different in different regions. When samples with wage incomes are not selected from the working age population at random, the skill premiums using the observed data are potentially subject to selection bias. These concerns can be addressed by using Heckman's two-step selection model (Heckman, 1979).

For the first two problems, we control for experience, gender, ownership, and industry in the regressions of wage equations, and focus on the coefficients for the skilled-unskilled dummy. To correct for selection bias, we include an inverse Mills

ratio in regressions.

We thus use regression equations as follows:

$$\ln(WAGE) = \beta_0 + \beta_1 * SKILLED + \beta_2 * EXPER + \beta_3 * EXPERSQ + \gamma X + \rho\sigma\lambda + \varepsilon \qquad (1)$$

where *SKILLED* is a dummy variable indicating that an individual has tertiary education degree (3 or 4 year college or above) or technical school degree. Vector X includes a gender dummy, ownership dummies, and industry dummies. λ is the inversed Mills ratio. ρ is the correlation coefficient between the error terms of the selection model and the wage determination model. σ is the standard deviation of the error term for the wage determination model. In the implicit selection model which is not written down explicitly, the regressors include all those in the wage determination model. We also include the employment rate (one minus non-work rate) as an instrumental variable. A Heckman two step procedure is then used for each province separately to estimate regional skill premia.

Table 3a reports our results. For the earlier period between 1995 and 2002, the skill premium increases sharply across all regions. This is consistent with existing literature that documents an overall increasing trend in rising returns to education (Liu et al. 2010; Zhang et al. 2005). Less well documented is the large variation across regions in the skill premium. In 1995, the skill premium in Guangdong is the highest (0.366), while that in Jiangsu is the lowest (0.070). The second lowest is Beijing (0.108). In 2002, Henan became the province with the lowest skill premium (0.240), Gansu became the one with highest skill premium (0.470), followed by Liaoning

(0.417), Sichuan (0.410), Chongqing (0.405), and Guangdong (0.368). Gansu and Sichuan are western provinces, and for these there seems no clear relationship between skill premia and economic development. The estimation of skill premia by region is thus important for describing the evolution of inequality between 2002 and 2007. For central and western provinces, there are clear signs that the skill premium stopped rising or even declined (Shanxi, Chongqing, and Sichuan for example). For coastal regions skill premia kept rising. This pattern in results is consistent with both deepening globalization and educational expansion.

4.2 Return to Years of Schooling and Returns to Different Education Levels

Dividing the labor force only into skilled and unskilled categories is a crude simplification. Along with educational expansion in the late 1990s, there is significant composition change within skilled worker groups. Estimated skill premium may thus be contaminated by composition change. We therefore estimate returns to years of schooling and returns to various levels of educations using two different models:

$$\ln(WAGE) = \beta_0 + \beta_1 * SCHOOLING + \beta_2 * EXPER + \beta_3 * EXPERSQ + \gamma X + \rho\sigma\lambda + \varepsilon \qquad (2)$$

$$\ln(WAGE) = \beta_0 + \sum_i \gamma_i * EDU_i + \beta_2 * EXPER + \beta_3 * EXPERSQ + \gamma X + \rho\sigma\lambda + \varepsilon \qquad (3)$$

In (2) *SCHOOLING* is years of formal schooling, and in (3) EDU_i are dummies for various education levels[5]. Results for these models are reported in the remaining columns of Table 3, and largely speaking, the patterns of these results are consistent with our results above. For the returns to years of schooling, the most important

[5] For space reasons, only college premia (or returns to college) are reported.

feature is the large regional variation in 2007. One year of schooling is associated with a 10-14% increase in wages in coastal regions, while in other provinces returns are well below 10%.

Estimation of skill premia by education level also shows some other important details in the evolution of returns. First, most of the increases in returns to education are concentrated in higher levels of education, especially college education. Second, coastal regions witnessed rising returns for almost every tertiary education level. Returns to education also decreased significantly for high school graduates. Finally, we estimate skill premia at a city level. The distributions of skill premia are reported in Figure 2. The patterns are similar to what is observed at provincial level. A prominent feature of Figure 2 is the larger dispersion in 2007. In particular, the upper half of the skill premium distribution has much larger densities than in previous years, a phenomenon already emphasized.

5. Explanation of Results and Their Implications

5.1 Factors That Influence the Evolution of the Regional Skill Premium

To assess the importance of various factors behind the evolution of regional skill premia, we estimate the following fixed effects model:

$$SKILLPREM_{it} = \beta_0 + \beta_1 * EXPGDP_{it} + \beta_2 * SOE_{it} + \beta_3 * SKILLED_{it} + \gamma X_{it} + u_i + \varepsilon_{it} \quad (4)$$

In this model, *SKILLPREM* is the estimated skill premium or return to years of schooling, and subscript i refers to different cities. We also estimate inequality measures and skill premia at city level to more fully explore regional differentials. Because the sample size for individuals is smaller at city level than provincial level, we only estimate skill premia and return to years of schooling instead of the return to different levels of education. Once we obtain these measures, we use them as dependent variables in the fixed effects regressions.

EXPGDP is the ratio of export to GDP. We use the ratio $EXPGDP_{it}$ to measure the openness of a particular region i at a particular time t. u_i is a time invariant unobservable individual regional characteristic. SOE_{it} is the share of the labor force in state owned enterprises. $SKILLED_{it}$ is the share of skilled labor in the labor force. Using a fixed effects model, we can control for regional unobserved characteristics. We use only two periods of time in each regression, and in this case a fixed effects model is equivalent to using a first differences method.

Results are reported in Table 4. For the period 1995 to 2002, the openness

variable (Export/GDP) has a positive but insignificant effect on skill premia, and the effect on the return to education is significant at a 10% level but negative. The coefficients are 0.091 and -0.047 respectively. For the period 2002 to 2007, the coefficients on openness variable become positive and significant at a 1% level. A 10% increase in export share was associated with an 11% increase in the skill premium and a 2% increase in the return to schooling. The changes in the coefficients on export variable indicate a structural change following China's entry into WTO.

Equally interesting are the coefficients for SOE. Between 1995 and 2002, the coefficients of SOE are both significantly negative, which means that the relative reduction in the size of the SOE sector played a major role in the increase in skill premium. This is only true for the first period. Between 2002 and 2007, none of the SOE coefficients are significant. These results are consistent with the timing of China's ownership restructuring process, and they support the earlier results due to Zhang et al (2005) and Liu et al, (2010), while also indicating that their conclusions need revision.

5.2 Skill premia and Inequality

One implication of the evolution of regional skill premium distributions is for regional inequality. In Figure 3, we plot the relationship between skill premia and wage inequality at a provincial level. In 1995, both skill premia and wage inequality at provincial level were low. Between 1995 and 2002, there is an increase in skill premia for all regions. As a consequence, inequality within regions increased

dramatically. Between 2002 and 2007, the dispersion of skill premium across regions also grew as did inequality across different regions. In 2007, the relationship between skill premia and inequality became more positive and significant. In Table 5, we regress both regional Gini coefficients and GE(2) on skill premia in different years. In all these regressions, the coefficients on skill premia are positive. But in year 1995 and 2002, they are relatively small and insignificant. In 2007, however, the coefficients are higher and significant at a 1% significance level.

To assess the implications of the evolution of regional skill premium, we can decompose the overall wage inequality (GE(2), which is regionally decomposable) into between- and within-province inequality (see Table 6). One prominent feature of urban wage inequality is that within regional inequality plays a progressively important role. In 1995, the overall and within inequalities measured as GE(2) are 0.18 and 0.14. During the period between 1995 and 2002, almost all of the increase in overall wage inequality (from 0.18 to 0.28) comes from within region inequality change (from 0.14 to 0.24) and between region inequality even decreased slightly. Again, most of the inequality change between 2002 and 2007 (from 0.27 to 0.36) comes from within region inequality (0.24 to 0.31).

The decomposition exercises in panel A of Table 6 miss the important feature that coastal regions have much higher within region inequality than non-coastal regions. Therefore in panels B and C we perform the same exercises for non-coastal and coastal regions separately. Results suggest that coastal regions have much higher within region inequality. Between 2002 and 2007 for example, while the within region

inequality in non-coastal regions increased by 0.03 from 0.19 to 0.22, that in coastal regions increased by 0.07 from 0.26 to 0.33. In summary, the decomposition exercise suggests a major role for within regional inequality in overall inequality, and that within region inequality in coastal regions played an even larger role than for non-coastal regions.

6. Conclusions

This paper uses three Chinese household surveys for 1995, 2002, and 2007, to estimate both the levels and changes in skill premia for different provinces. We use them to estimate regional dispersion in skill premia. Although there is an increase in skill premia in nearly all provinces between 1995 and 2002, we do not find such increase between 2002 and 2007. Data from the 2007 survey indicate a strong positive relationship between openness and skill premia, with coastal regions having much higher skill premia than those in non-coastal regions. We interpret the results between 2002 and 2007 as the result of China's deepening globalization after entry into the WTO.

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Table 1 Summary Statistics

	1995	2002	2007
Age	39.53	41.51	42.30
Female	0.47	0.46	0.46
Years of schooling	10.78	11.27	12.72
Primary and Below	0.05	0.03	0.02
Middle School	0.31	0.25	0.20
High School	0.24	0.28	0.26
Technical School	0.16	0.12	0.11
3 Year College	0.16	0.22	0.25
4 Year College and above	0.08	0.10	0.15
SOE[a] and government	0.83	0.71	0.56
Collective	0.15	0.07	0.06
Private [b]	0.02	0.22	0.38
No. of Obs.	11189	10774	15249

Note: a. The SOE sector includes state enterprises or joint-owned enterprises with the state being the largest share holder at the central, provincial, or city level. **b.** The private sector includes domestic private enterprises, foreign-funded enterprises, and joint ventures.

Table 2 Income and Inequality in Urban China by Province, 1995-2007

	Average Annual Income (RMB)			Gini			GE(2)			Skilled Worker Shares		
	1995	2002	2007	1995	2002	2007	1995	2002	2007	1995	2002	2007
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Beijing	8457	13764	23928	0.243	0.348	0.365	0.106	0.212	0.232	52.5	48.2	62.5
Shanxi	4822	8067	14511	0.276	0.363	0.325	0.131	0.221	0.177	43.1	43.7	51.4
Liaoning	5522	8661	12930	0.267	0.353	0.383	0.117	0.210	0.299	39.3	41.4	49.5
Shanghai			27985			0.422			0.365			47.4
Jiangsu	6742	10143	20841	0.262	0.367	0.446	0.120	0.260	0.412	33.8	37.1	47.8
Zhejiang			24092			0.401			0.358			44.0
Anhui	4900	8077	14178	0.253	0.346	0.338	0.105	0.202	0.202	34.9	42.2	48.3
Fujian			17052			0.372			0.268			53.3
Henan	4737	7619	13237	0.278	0.326	0.313	0.123	0.189	0.169	38.7	42.1	63.2
Hubei	5866	8260	15867	0.246	0.326	0.358	0.104	0.174	0.214	43.4	51.2	55.8
Hunan			15484			0.351			0.238			54.6
Guangdong	11201	16434	26095	0.307	0.376	0.403	0.183	0.274	0.304	36.8	41.6	54.2
Chongqing	4762	8951	13215	0.232	0.340	0.348	0.095	0.208	0.231	41.9	41.1	49.5
Sichuan	5940	8474	14200	0.258	0.361	0.381	0.131	0.219	0.301	41.5	37.3	52.3
Yunnan	5733	9475	12815	0.202	0.301	0.366	0.078	0.146	0.233	46.0	51.6	54.8
Gansu	4604	8041	11656	0.241	0.344	0.371	0.095	0.199	0.230	36.6	43.1	50.3
Total	6093	9530	18253	0.296	0.372	0.407	0.181	0.274	0.358	40.7	43.6	52.9

Note: Skilled labor includes graduates of technical school, professional college (3 year college), and college (4 year) or above. Unskilled labor includes high school graduates or those with degrees below these levels. GE(2) is the inequality measure of Generalized Entropy Index with sensitivity parameter 2.

Table 3 Estimates of Skill Premia and Returns to Education in Urban China, 1995-2007

	Skilled vs Unskilled			Return to Years of Schooling			College vs High School Gradu		
	1995	**2002**	**2007**	**1995**	**2002**	**2007**	**1995**	**2002**	**2007**
Beijing	0.132	0.249	0.485	0.026	0.059	0.114	0.207	0.965	0.618
Shanxi	0.147	0.315	0.281	0.028	0.050	0.064	0.230	0.289	0.458
Liaoning	0.202	0.420	0.350	0.022	0.067	0.078	0.248	0.550	0.509
Shanghai			0.683			0.135			0.895
Jiangsu	0.078	0.339	0.578	0.017	0.056	0.110	0.058	0.527	0.639
Zhejiang			0.591			0.110			0.563
Anhui	0.136	0.280	0.232	0.014	0.069	0.050	0.240	0.386	0.342
Fujian			0.336			0.085			0.427
Henan	0.192	0.239	0.368	0.033	0.047	0.067	0.310	0.416	0.505
Hubei	0.115	0.283	0.326	0.016	0.044	0.080	0.338	0.357	0.499
Hunan			0.312			0.073			0.488
Guangdong	0.397	0.374	0.441	0.040	0.069	0.111	0.427	0.605	0.689
Chongqing	0.244	0.398	0.354	0.039	0.056	0.066	0.164	0.559	0.587
Sichuan	0.212	0.418	0.420	0.036	0.059	0.086	0.276	0.472	0.626
Yunnan	0.157	0.307	0.483	0.028	0.045	0.088	0.235	0.331	0.568
Gansu	0.316	0.473	0.411	0.046	0.073	0.074	0.388	0.499	0.455

Note: For each province, we use a Heckman's two-step procedure to get the skill premium or the return to education. We also control for experience, experience squared, occupation, industry, ownership, and region dummies.

Table 4 Globalization and Skill Premia (Fixed Effects Model)

	1995-2002		2002-2007	
	Skill Premium	**Return to Education**	**Skill Premium**	**Return to Education**
Export/GDP	0.091	-0.047*	1.117***	0.222***
	(0.156)	(0.026)	(0.285)	(0.047)
SOE	-0.408**	-0.120***	0.356	-0.025
	(0.189)	(0.029)	(0.403)	(0.080)
Skilled	-0.065	0.035	0.080	0.032
	(0.298)	(0.050)	(0.463)	(0.091)
Experience 11-20	-0.490	0.020	-0.423	0.160
	(0.373)	(0.080)	(0.680)	(0.119)
Experience 21-30	-0.817**	-0.042	-0.128	0.171
	(0.354)	(0.049)	(0.844)	(0.159)
Experience 31+	-0.957	-0.020	-0.560	0.062
	(0.591)	(0.107)	(0.877)	(0.173)
Mean LnWage	0.273***	0.027	0.069	-0.012
	(0.102)	(0.018)	(0.230)	(0.046)
Constant	-1.144	-0.078	-0.343	0.055
	(0.975)	(0.186)	(1.658)	(0.345)
R2 wthin	0.622	0.586	0.223	0.475
R2 between	0.009	0.007	0.004	0.083
R2 overall	0.207	0.182	0.008	0.115
N	106	106	68	68

Note: *, **, and *** are significance levels at 10%, 5%, and 1% respectively. Standard errors are in parenthesis.

Table 5 Skill Premia (Return to Education) and Wage Inequality

	Dependent Variable					
	Gini Coefficient			GE(2)		
	1995	2002	2007	1995	2002	2007
	(1)	(2)	(3)	(7)	(8)	(9)
Skill premium	0.107	0.100	0.221***	0.142	0.123	0.437***
	(0.086)	(0.082)	(0.047)	(0.081)	(0.139)	(0.097)
R2_adj	0.046	0.041	0.582	0.158	-0.020	0.562
N	12	12	16	12	12	16

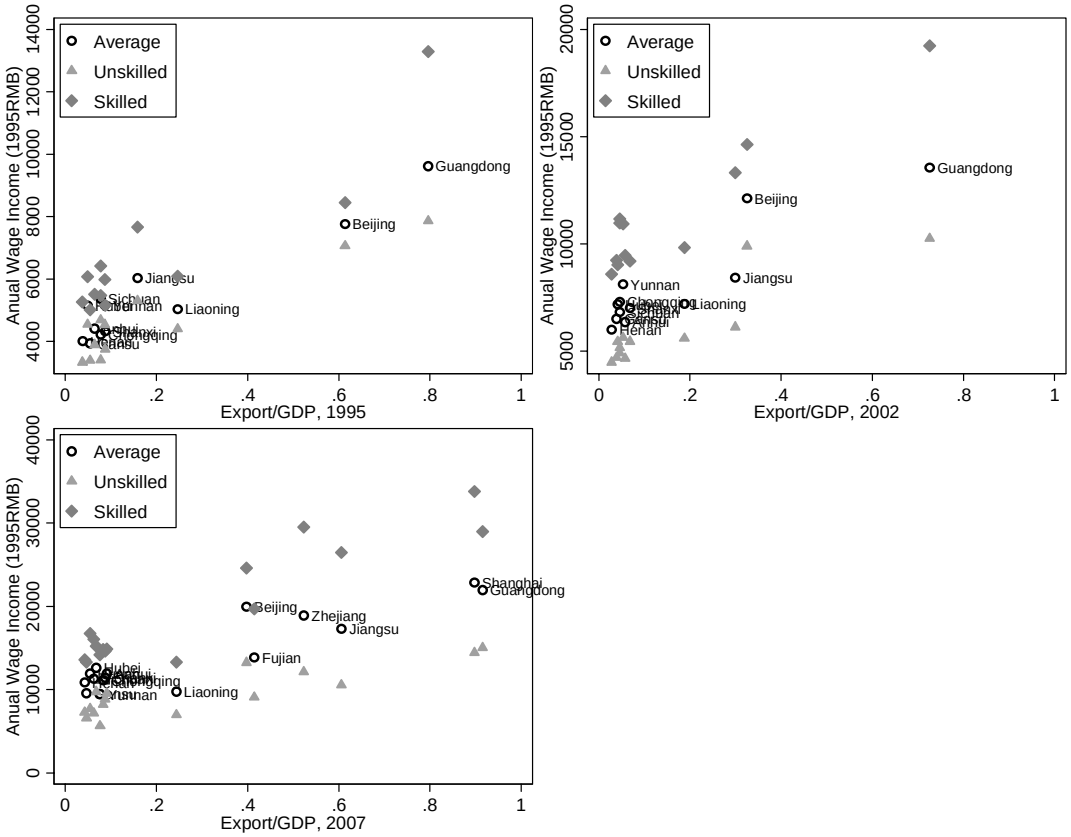
Note: *** is significance level at 1%; Standard errors are in parenthesis. GE(2) is the inequality measure of Generalized Entropy Index with sensitivity parameter 2.

Table 6 Decomposing Urban Inequality (Inequality Measure is GE(2))

	1995	**2002**	**2007**	
	(1)	**(2)**	**(3)**	**(4)**
A: All regions				
Overall inequality	0.181	0.274	0.358	0.343
Within-province inequality	0.140	0.238	0.314	0.296
Between-province inequality	0.042	0.036	0.045	0.047
B: Non-Coastal Regions				
Overall inequality	0.116	0.194	0.228	0.224
Within-province inequality	0.111	0.191	0.224	0.220
Between-province inequality	0.005	0.002	0.004	0.004
C: Coastal Regions				
Overall inequality	0.192	0.295	0.354	0.340
Within-province inequality	0.154	0.262	0.329	0.313
Between-province inequality	0.037	0.033	0.025	0.027

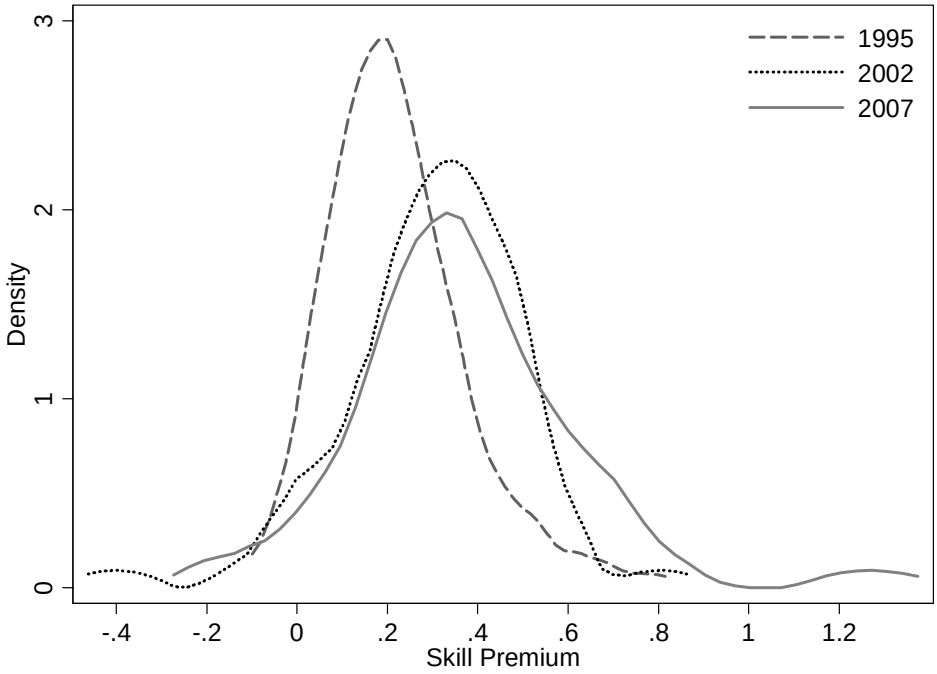
Note: Column 4 are the results using the same provinces as in 1995 and 2002, while column 3 uses observations from all 16 provinces. GE(2) is the inequality measure of Generalized Entropy Index with sensitivity parameter 2.

Figure 1 Wage Levels of Skilled and Unskilled in Different Provinces



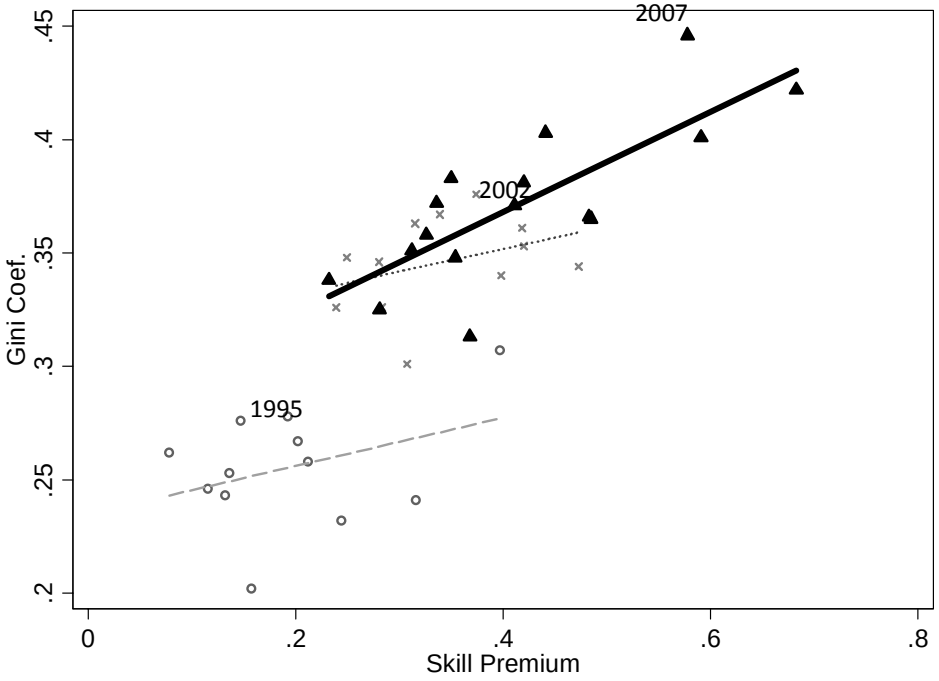
Note: Average wages are calculated using CHIP data sets for 1995, 2002, and 2007. The share of export in GDP is calculated using data from China Statistical Yearbook 1996, 2003, and 2008.

Figure 2 Distribution of Skill Premia at City Level



Note: The skill premium is obtained by estimating wage equations for each city. There are 62, 61, and 91 cities for 1995, 2002, and 2007. The kernel density for each year is estimated using Epanechnikov kernel function, bandwidth is set at 0.015.

Figure 3 Skill Premia versus Within Inequality across Provinces



Note: The skill premium for each province is estimated according to model (1) using data from CHIP 1995, 2002, and 2007.