

Chapter 9:

Wage Increases, Labor Market Integration, and the Lewisian Turning Point: Evidence from Migrant Workers

FANG CAI¹

YANG DU¹

CHANGBAO ZHAO²

*¹ Institute of Population Studies and Labor Economics,
Chinese Academy of Social Sciences*

² Research Center of Rural Economy, Ministry of Agriculture

Chapter 9:**Wage Increases, Labor Market Integration, and the Lewisian Turning Point: Evidence from Migrant Workers******Introduction***

Development and integration of labor markets are key components that indicate the move towards a market system. China's transition from an administered labor system to a labor market is unique, not only because it is the largest economy in the world to experience such a process, but because it has adopted a typically Chinese style of gradual change. Three elements of China's labor market integration are important. First, it has been carried out with an emphasis on incremental reforms, while not entirely negating the importance of shock reform. Second, economic globalization has stimulated the process of labor market integration. Third, the move towards a labor market parallels the transformation from a dual economy to one that is integrated.

For a long time, China has been perceived as being a dual economy, evidenced by unlimited labor supply. Thanks to low labor costs, labor-intensive industries have grown up quickly, which has earned China the title of "factory to the world". With fast growth in non-agricultural sectors, the rural labor force has served as a source of labor to support industrialization. However, a new trend has arisen in recent years, challenging the inherent idea of an unlimited labor supply in China. Labor shortages are widely reported in various regions, with some debate about whether China has entered an era of limited labor supply.

Mass rural-to-urban migration flows have brought about changes in the labor market. First, rural migration workers have become an important component in urban labor markets and a factor contributing to labor market integration. According to statistics from the National Bureau of Statistics, more than 130 million migrants worked in urban areas in 2006, and labor mobility encourages information flows across regions and economic sectors and leads to labor market integration. Second, previously stagnant wages for migrant workers have started increasing. As a result of large migration flows, non-agricultural sectors have soaked up the available labor in

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rural areas, in particular, those who are young and well-educated. For that reason, employers that demand new participants have had to raise wage offers in order to attract workers. That is why there have been significant wage changes for migrant workers in recent years. Finally, faced with a Lewisian turning point, China needs to change the direction of its labor market policies. For example, China ought to give up those temporary instruments designed to suppress labor supply, widely used when labor market dislocation took place in urban areas in the 1990s.

In this chapter, labor market reform and labor mobility of migration workers will be discussed, followed by an analysis of the pattern of wage changes of migrant workers in recent years, which provides some evidence for a Lewisian turning point. Then the results of using regression-based inequality decomposition are used to disentangle the individual characteristics that affect wage variations, as well as the contribution of regional factors to wage inequality. Evidence of regional wage convergence suggests that the labor market has become more integrated in recent years.

Employment Reform and Labor Mobility

Like related institutional arrangements in China, labor policy under the planned system resulted in two kinds of inefficiencies. First, the inherent lack of labor supervision and lack of an incentive mechanism in the micro-management system led to low technical efficiency. Second, the distorted allocation of labor, capital, and other resources between regions and sectors led to low allocative efficiency. Accordingly, the subsequent incentive mechanism, and allocation system reforms have improved technical and allocative efficiencies, and have become dominant drivers of the high economic growth that has occurred during the post-reform period in China. Changes in labor policy have played an important role during the whole process of reform, contributing directly and indirectly to efficiency improvements.

China's gradual institutional changes have embodied two initiatives: a "bottom-up" initiative and one that is "top-down." In the first case, once the political climate at large began to change, producers who had previously suffered under the strict constraints of the old system, and who could see the potential gains from the new system, actively encouraged reform. In the second case, government examined the way in which the old institutions constrained productivity, as well as the potential efficiency gains of new institutions, and after comparing the costs and benefits of institutional change, it implemented policy reform on its own initiative.

The formation of labor markets in China came about similarly: the implementation of the Household Responsibility System (HRS) meant that rural laborers were released from engagement in the agricultural sector, and began migrating between villages and towns and even across provinces. When a large number of migrant workers found jobs in urban sectors, competition began between the state-owned sector and the non-state sector, forcing the former to consider reforming the labor recruitment and hiring system. Partly as a response to this, and partly because of the problem of low productivity, the government gradually relaxed its labor policy. Since policymaking is, after all, a function of government and since it is a decisive force in the liberalization of a labor market, the intention and the extent of reforms of government labor allocation policies have determined and are determining the pace of labor market formation.

In the process of institutional change, playing the role of supplier of institutions, government is also a rational agent, taking into consideration economic and political aspects in its decision-making. Whether or not to abolish an old policy while adopting a new one depends, not only on the revealed efficiency gains, but must also be restrained by the costs and benefits of this change. The terms “cost” and “benefit” here refers to economic and political effects. Increasingly deeper reform brings about an expansion in the market as a principal force behind resource allocation. To avert conflict between traditional government methods and market forces, the Chinese government has duly adjusted its policies in response to market development. Labor policy reforms have depended directly on the overall extent of market maturity. While on the one hand, the development of the labor market makes up a key part of the economic reform as a whole, on the other, it goes only as far as the reach of overall reform.

As discussed above, during the process of labor policy reform, the Chinese government and other players interacted with one another by following the rationale of political economy. As part of marketization, the reform of labor policy and the implementation of other related reforms have been/are being conditioned on each other. Following this framework, the deregulation of labor mobility has been embodied mainly in rural-to-urban migration, characterized as gradual abolition of the *hukou* system.

Since the beginning of the 21st century, the gradual reform of *hukou* has been characterized by a bottom-up process. That is, relaxation of *hukou* control began in small towns and gradually extended to medium-sized towns and big cities. The *hukou* system reform in more than 20,000

small towns was characterized by 'minimum criteria and complete opening-up'. In 2001, after years of experimentation in some regions, the Ministry of Public Security initiated action to reform the *hukou* system in small towns. In most small towns, the minimum requirement for receiving local *hukou* is that the applicants must have a permanent source of legal housing in the locality. This was considered one of the greatest and most complete steps in *hukou* reform since the system was formed in 1958. *Hukou* relaxation in some medium-sized cities, and even in some larger cities and provincial capitals, has been characterized by 'abolishing quotas and conditioned entry'. The threshold for settling in those cities with *hukou* status has been lowered substantially. This approach to reforming the *hukou* system meets the needs of a maturing labor market(s) and corresponds with gradualism. *Hukou* relaxation, especially in large cities such as Beijing and Shanghai has been characterized by 'lifting up the threshold and opening the gate'. These cities have actively encouraged the arrival of intellectuals and professionals while imposing strict criteria of entry on ordinary migrant workers. In short, lifting the threshold means narrowing the doorway. By comparison, *hukou* reform in those cities has not made much progress.

The reforms in urban employment, social security, and welfare provision have created an institutional climate for rural-to-urban migration. Such reforms include the expansion of urban non-state sectors, the removal of rationing, the privatization of the housing distribution system, and changes in employment policies and the social security system. These reforms have reduced the costs of migrating to, working, and living, in cities. In the late-1990s, while the urban employment 'iron rice-bowl' was broken, rural workers began to enter the urban labor market on a massive scale. It is becoming more common and much easier for rural laborers to seek work and live in cities, even though the *hukou* system still functions. In short, labor mobility motivated by reforms to the *hukou* system, and other institutions deterring migration, has not only been an important part of economic development; it has also been and is a significant part of the process of transition towards market forces. This transition has been conditioned on the reforms in a much wider sphere. In this respect, the allocation of the labor force across sectors and among regions is based increasingly on market forces. The characteristics of migration in transitional China reflect that of marketization as a whole. The procedure of labor market reforms in both rural and urban areas is summarized in Table 1.

Table 1: Labor Market Reforms in China

Time	Rural Labor Market	Urban Labor Market
Early 1980s	Household Responsibility System (HRS) released laborers from agriculture, and Township and Village Enterprises (TVEs) reallocated them	To deal with the returned sent-down youth and new entrants of job market, three channels of employment combined
Late 1980s	Allowance of long distance trading of agricultural products; legitimizing of city work for farmers by bringing staple food for city stay	Reforms for permanent workers of State-Owned Enterprises (SOEs) by contracting and internal reallocation
Early 1990s	Migration tide, relaxation of <i>hukou</i> system – government's selling blue stamp of local <i>hukou</i>	Staffs and workers of SOEs and government departments jumping into the sea; abolition of rationing
Late 1990s	Mass migration, three ways of reforming <i>hukou</i> system from small towns to large cities	Breaking of iron-rice-bowl and rebuilding the social security system in the labor market shock period
Since this Century	Local autonomy for reforming <i>hukou</i> system; government's efforts in improving migration conditions	Further development of labor market characterized by diversification and informalization of employment; pilot programs of social security system

Due to the dual economic system implemented in China, there is significant segmentation between rural and urban labor markets. The two markets have different levels of regulation, leading to migrant and local workers being employed in two separate labor markets within the same city. Governments tend to have less regulation for migrant workers, protecting them less than local workers. For this reason, employment and wage formation for migrant workers are determined mainly by market forces. Since the mid-1980s, migrant workers have been the major component of labor flows between urban and rural areas and across regions. This group of workers can be defined as those whose behavior was the first to be marketized in China. The following features of migrant workers, reflects the mechanism of labor market integration across regions.

First, as already mentioned, migrant workers have become a major component of the urban labor market. Rural-to-urban migration began in the 1980s, and since then migration has continued to increase. On the one hand, this has been because a fast-growing economy creates increasing labor demands in non-agricultural sectors; on the other hand, the urban labor market tends to be friendlier to migrant workers. Since China's entry into the World Trade Organization (WTO), the labor-intensive industries in which China has a comparative advantage have grown, intensifying the demand for the agricultural labor force. As demonstrated in Table 2, migrant workers in the urban labor market provide an important human resource that supports rapid economic growth. In 2006, the ratio of migrant workers to urban employees was 46.7%. Therefore, regional labor market integration can be understood by examining the employment and wage levels of migrant workers.

Table 2: Number of Migrant Workers in the Urban Labor Market

Year	(1)Migrant workers (thousand)	(2) Urban employment (thousand)	Ratio of 1/2 (%)
2000	78,490	212,740	36.9
2001	83,990	239,400	35.1
2002	104,700	247,800	42.3
2003	113,900	256,390	44.4
2004	118,230	264,760	44.7
2005	125,780	273,310	46.0
2006	132,120	283,100	46.7

Sources: The size of the migrant workforce from National Bureau Statistics (NBS), *Yearbook of Rural Household Survey* (various years); data on urban employment are from NBS, *Yearbook of Labor Statistics in China* (various years)

China's Lewisian Turning Point

As a result of China's economic growth and demographic change, the country is approaching a turning point at which labor shortages and wage increases occur. As part of this process, the speed of labor market integration will increase as well. Through integration into the global division of labor, China's labor-intensive manufacturing sector has boomed, and world-wide employment opportunities have been seized. As a result, more than 100 million rural laborers have migrated to urban jobs, and laid-off and unemployed workers have been re-employed in an economy with high growth rates. With economic development, the pattern of factor endowments in China is being restructured, implying the coming of a historical turning point.

According to population predictions, the desirable population structure that has brought about a demographic dividend in the past three decades will disappear within the next decade. At this point, the dependant population ratio (the ratio of the population aged younger than 16 and older than 64 with respect to those aged between 16 and 64) will stop decreasing and begin increasing. When comparing the growth rates of labor forces in other countries, it becomes clear that within two decades China will have no advantage in labor supply (United Nations, 2005). In fact, the outcome of demographic transition has already appeared in the labor market where the coming Lewisian turning point is characterized by the following two stylized facts. The first is quantity adjustment evidenced by labor shortage and exhaustion of the supply of young workers. The second is price adjustment evidenced by rising wages and wage convergence among various groups of workers.

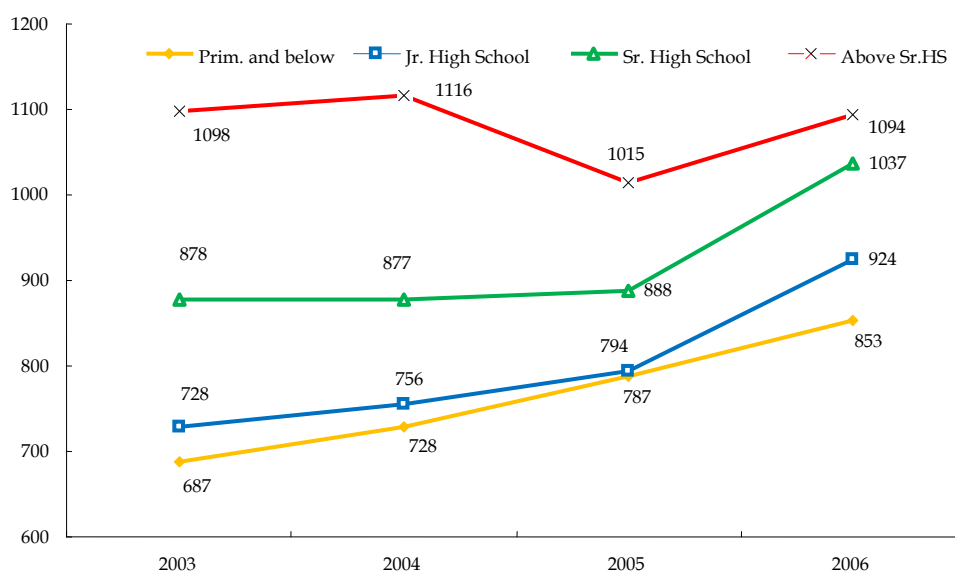
In 2003, a shortage of migrant workers was first reported in coastal areas, which are the most developed regions in China. At that time, the shortage was not taken seriously because the common understanding of the issue was that it was a transitory and structural phenomenon that would disappear with labor market adjustment. However, shortages have affected other regions since then, indicating that labor shortages are a long-term issue rather than a temporary one. This is explained by the demographic changes and workforce reallocation in rural China. In 2005, out of a rural labor force estimated at 485 million, approximately 200 million changed jobs by either leaving their home townships or shifting to non-agricultural sectors. The agricultural sector requires about 178 million workers, creating a surplus of about 100 million workers, half of whom are over 40 years old. This fact is significantly different from what

scholars have long believed, and it marks the coming of a Lewisian turning point (Cai and Wang, 2008).

In addition to quantity response in the labor market, wage increases are also significant. According to surveys conducted by the Ministry of Agriculture, from 2004 to 2006, annual growth rates of monthly earnings for migrant workers was 2.8%, 6.5%, and 11.5%, respectively (Cai, 2007). The Ministry of Labor and Social Security reported a growth rate of 17.9% in monthly earnings for migration workers in 2006 (Cai, 2007).

Looking at a more detailed breakdown of wage changes, the trend of wage dynamics among various groups also indicates the coming Lewisian turning point. In Figure 1, the wage changes by education attainment in the past few years are displayed. In 2003, the wage gap between skilled and unskilled workers was quite substantial and converged in the following years. Because the shortage was for low-skilled workers who had accomplished junior high school, this group of workers had the most significant and stable wage increase, the annual growth rate being 9%. Similarly, for workers whose education attainments were primary schooling or below, the annual growth rate was 8.1%. Wage increases of low-skilled workers, implies that labor shortages are not a transitory or structural phenomenon but are instead caused by an imbalance between aggregate demand for and supply of labor.

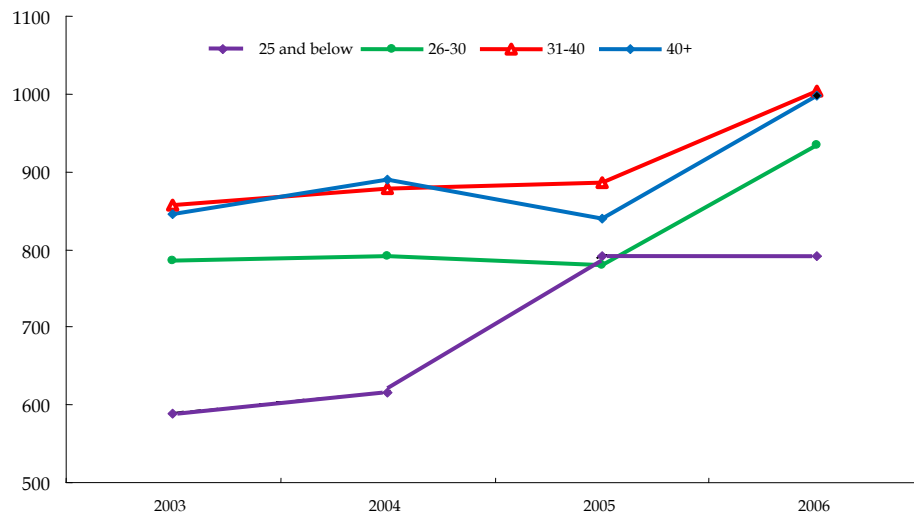
Figure 1: Wage Trend of Workers by Education Attainment



Source: Authors' calculation from Research Center of Rural Economy (RCRE) data

For a long time, migrant workers have been dominated by young laborers below the age of 25. This is particularly true in labor-intensive industries. During the era of unlimited labor supply, employers were used to hiring young workers that were relatively well educated and healthy compared to their older counterparts. However, as noted in another study by Cai (2007), with continuous fast economic growth in the past few years, there exists a limited number of young workers in rural areas. Under such circumstances, the newly increased demand for labor in non-agricultural sectors has to move to older workers and in turn generate an increase in their wages. As illustrated in Figure 2, a significant wage increase for workers aged 40 and above appeared in 2005, as well as for others, except for the younger group. If this is the beginning of a new trend of wage changes, it can be inferred that the demand for labor has been transferred to those who were ignored in the past.

Figure 2: Wage Trends of Workers by Age Group

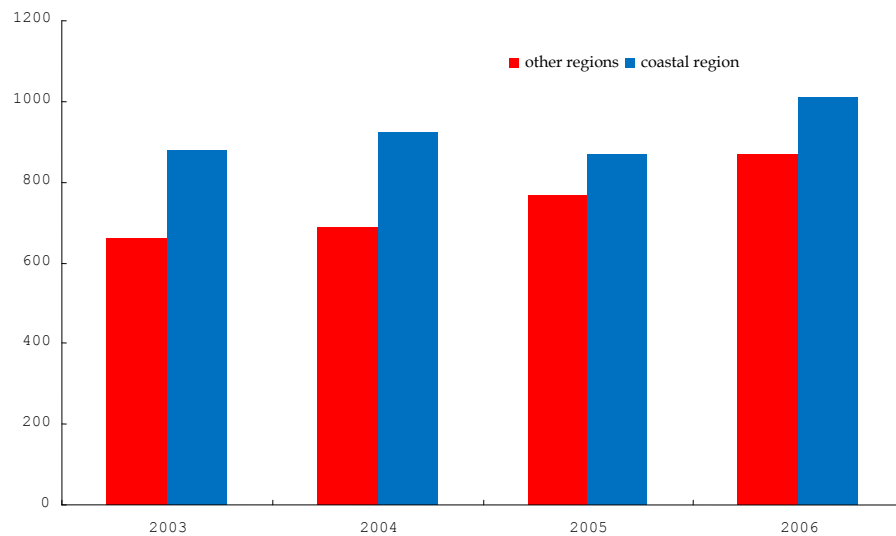


Source: Author's calculation from RCRE data

If labor shortages have spread from coastal areas to other regions, it should be reflected in the labor market through wage convergence between coastal areas and other areas. The interior regions are those provinces with an abundant labor force where exporting is typical. Considering that employment within the provinces would save transportation costs, the labor supply in exporting regions would be more affluent than in coastal areas. If there is an unlimited labor supply in inner areas, average wages would be less likely to increase than in importing regions.

However, as depicted in Figure 3, average wages in central and western China have also grown steadily. Additionally, the wage gap between coastal areas and interior regions has been shrinking in the past few years. In 2003, the ratio of average wages for migrants in interior areas to those in coastal areas was 0.75 while the ratio went up to 0.86 in 2006. The disappearing gap not only indicates a more integrated labor market among regions, but reflects the fact that labor in exporting regions has been put to good use.

Figure 3: Wage Trends of Workers by Region



Source: Authors' calculation from RCRE data

Wage Convergence of Migrants

In a previous study, aggregated wage data on sub-sectors in manufacturing were used to analyze the deviation of average wages by province and found that markets were integrated between regions (Cai and Du, 2004). Although industrial factors that affect wages were controlled for, the study could not reflect the impact of purely regional effects since, with aggregated data, it is impossible to control for individual characteristics. Hence, data at a micro level can be used, and it is expected that the impact of regional factors on labor market integration since China's WTO entry can be observed.

Data

Data in this chapter were collected by the Research Center of Rural Economy (RCRE), in the Ministry of Agriculture. In the past decade, the center has consistently surveyed 20,000 households, distributed throughout 300 villages. In each household, a basic form was filled out

that included information such as level of education, age, gender, and health status. Since 2003, a complementary labor survey has been done in order to gain more information about labor migration. From the individuals surveyed, information about the destinations to which migrants go to work can be collected. Combining the household and individual data, information on individual characteristics, wages, and working places can be obtained in order to begin to understand the impacts that geographic factors have on wage inequality.

Inequality Measures and Decomposition: Regional Effects

In general, the disparities of individual earnings can be attributed to factors in three categories. The first is individual characteristics, including human capital and demographic characteristics such as age and gender. The second is industrial and occupational features. Even in industrialized countries, where labor markets function very well, earning disparities between industries exist and persist: workers in different industries with similar individual characteristics can earn different incomes. The third factor is regional. Regional disparities do not easily disappear when labor mobility between regions does not occur. The market mechanism plays an active role in the market for migrant workers, and the industrial and occupational distribution of migrant workers concentrates in a few industries and occupations. It is, therefore, plausible to explore the role of regional effects of market integration when individual features of particular markets are controlled for.

Table 3: Income Inequality Measures: 2004-2006

	2003	2004	2005	2006
Percentile ratios				
p90/p10	4.469	4.444	4.436	4.232
p90/p50	2.083	2.222	2.096	2.081
p10/p50	0.466	0.500	0.472	0.492
p75/p25	2.143	2.143	2.013	2.083
General entropy				
GE(-1)	0.299	0.285	0.236	0.232
GE(0)	0.240	0.226	0.192	0.189
Theil	0.270	0.246	0.204	0.196
GE(2)	0.436	0.377	0.282	0.258
Gini	0.374	0.360	0.334	0.332
Atkinson indices				
A(0.5)	0.119	0.110	0.093	0.091
A(1)	0.214	0.202	0.175	0.172
A(2)	0.374	0.363	0.321	0.317

Source: Authors' calculations

As shown in Table 3, the wages of migrant workers have converged in recent years. No matter which inequality measure is applied, wages were more equal in 2006 than in 2003. Their entropy went down from 0.27 to 0.196, and the Gini coefficient went from 0.374 to 0.332; the other general entropy and Atkinson indices also decreased. The percentage ratios show that the gap between the top 10% and the bottom 10% was slightly smaller in 2006 than in 2003, which could be the result of more protection for migrant workers in recent years. Despite the decreasing trend in income inequality indices, there is a need to look further into the role of geographic factors in inequality, which can be found through inequality decomposition.

The data used in this chapter include information on distribution of destination provinces, so we can simply decompose the inequality measures into inequality within provinces and inequality between provinces. Table 4 presents the decomposed inequality measure of general entropy by province. It is evident that, in general, inequality within provinces dominates inequality between provinces, regardless of which index of general entropy is considered. For example, in 2003 about 90% of Theil entropy came from within provincial factors and 0% was due to between province factors; and in 2006, the shares were 93.4% and 6.6%, respectively. The table also indicates that the share of regional factors fluctuates instead of monotonically decreasing. Therefore, it cannot be inferred that the labor market is more integrated based simply on such decomposition results, because it is possible to correlate some regional factors with individual characteristics. For example, more able people are more capable of migrating to a place with high wage rates.

Table 4: Inequality Decomposition by Provinces: General Entropy

		2003	2004	2005	2006
GE(-1)		0.299	0.285	0.236	0.232
	Within	0.275	0.258	0.223	0.219
	between	0.024	0.027	0.012	0.013
GE(0)		0.240	0.226	0.192	0.189
	Within	0.215	0.197	0.18	0.176
	between	0.025	0.029	0.012	0.013
Theil		0.270	0.246	0.204	0.196
	Within	0.244	0.215	0.191	0.183
	between	0.027	0.031	0.013	0.013
GE(2)		0.436	0.377	0.279	0.258
	Within	0.407	0.342	0.268	0.245
	between	0.029	0.035	0.011	0.013

Note. Source: Authors' calculations

Regression Based Decomposition

To further examine the components of income inequality, and following Morduch and Sicular (2002), Theil entropy was decomposed, using the following linear earning regression model:

$$E_i^t = \alpha_0^t + \alpha_1^t \text{edu}_i^t + \alpha_2^t \text{sex}_i^t + \alpha_3^t \text{age}_i^t + \alpha_4^t \text{heath}_i^t + \sum_{j=1}^{29} \beta_j^t d_j^t + \varepsilon_i^t,$$

where the left-hand side variable is monthly earnings of a migrant, and the first four right-hand side variables are individual characteristics, including years of schooling, gender, age, and self-reported health status. Except for an error term, the last two terms include the sum of provincial dummies. Unlike typical earnings equations that use a log of wages as a dependent variable, for the purpose of decomposing the inequality index, in this case Theil entropy, the advantage of a semi-log equation is sacrificed, since the main goal in this research is to look at the role of geographic factors in wage inequality instead of returns to human capital.

Table 5 presents some of the regression results on individual characteristics. The provincial dummies were not included in order to save space, while the effects of specific provinces were not of interest here. The regression results were generally consistent with traditional predictions, i.e., educated, healthy, male, and aged labor has a relatively better economic performance in the labor market.

Table 5: Regression Results of Linear Wage Equation: 2003-2006

	2003	2004	2005	2006
Years of schooling	37.63 (3.08)	29.66 (3.17)	20.11 (3.27)	34.94 (2.71)
Gender (1= male)	197.44 (15.96)	197.86 (15.56)	54.33 (15.81)	231.78 (13.84)
Age	10.41 (0.71)	10.02 (0.69)	6.93 (0.69)	9.35 (0.60)
Self-reported health Status	-59.97 (12.72)	-74.94 (12.70)	-17.37 (13.30)	-108.19 (11.21)
Provincial dummies	yes	yes	yes	yes
R ² (adj-R ²)	0.13 (0.12)	0.15 (0.15)	0.061 (0.056)	0.12 (0.12)
No. of observations	8372	7986	6040	10094

Notes: 1. Standard errors in parentheses; 2. Health status is self-reported in five ranks, where one is healthier than five

Using the information on the right-hand side variables, it is possible to decompose Theil entropy into regional effects, which are the sum of provincial effects, individual effects, constants, and residuals, the results being presented in Table 6. The main interest in this chapter is to look at the contribution of regional factors to inequality when individual characteristics are controlled for. In 2003, 28% of wage inequality could be explained through regional factors, while the share was 20.3% in 2006. A monotonic decreasing trend of regional inequality was also found for the years following China's entry into the WTO entry. Although only a few observations were available, due to a very short time-series, the first row of Table 6 shows that regional labor markets have become integrated, at least for migrant workers.

Table 6: Theil Decomposition Based on Regression

Components of inequality	2003	2004	2005	2006
Theil Entropy	0.270	0.246	0.204	0.196
Regional factors (%)	28.08	26.10	22.84	20.31
Individual factors (%)	-63.88	-52.92	-33.03	-44.49
Constant (%)	-11.16	-26.22	-60.89	-41.06
Residual (%)	146.96	153.04	171.08	165.24
Total (%)	100	100	100	100

Source: Authors' calculations

Conclusion

By looking at wage changes in various dimensions, this chapter has explored evidence for a coming Lewisian turning point in recent years. An analysis of the data for migrant workers shows that the pattern of stagnant wages lasting for a decade has been broken. Meanwhile, the pattern of wage changes supports the argument that China is drawing near to a Lewisian turning point that is the result of fast economic growth and demographic transition.

Average wages among regions converged. The trend is indicated by both measurement of inequality of wages and by inequality decomposition. Controlling for individual characteristics that affect wages reveals that regional factors contributed less and less to total inequality of wages. This suggests that the labor market is more and more integrated among regions. It is evident that labor market reforms that lead to large flows of labor drive the process of labor market integration.

Labor market reform is, however, far from complete. In addition, the coming Lewisian turning point further challenges institutional reforms. Abolition of the various institutional

obstacles that hinder the development of a labor market will not only enhance migration flows, it will make it a rational movement as well by helping to create the developmental climate and job opportunities for labor mobility, which in turn will produce favorable conditions for the abolition of the *hukou* system. The Chinese government, which has specific development goals for the next two decades, should grasp every opportunity to push institutional reforms and to encourage labor migration once its importance is fully realized.

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