

Harnessing China's Untapped Labor Supply

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About the Author

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Xin Meng is professor of economics in the College of Business and Economics at Australian National University (ANU) and a fellow of the Australian Academy of Social Sciences. She received her PhD in economics from ANU in 1993 and is also a graduate in economics of the Chinese Academy of Social Sciences. She has published papers in *Science*, *Journal of Economic Perspectives*, *Journal of Labor Economics*, *Journal of Public Economics*, *Journal of Development Economics*, *Labor Economics*, *Oxford Economic Papers*, *Journal of Development and Cultural Change*, *Review of Income and Wealth*, *Journal of Comparative Economics*, and *Journal of Population Economics*.

Her research has clustered around four main themes: (1) the Chinese labor market during transition, including changes in income distribution and poverty, the impact of labor market rigidities on economic development, and the effect of economic shocks on consumption; (2) the influence of institutions and culture on gender discrimination in China, Taiwan, and developed countries; (3) the economic implications of rural-urban migration in developing countries and the economic assimilation of immigrants in developed countries; and (4) the economic implications of major catastrophes, such as the impact of the Chinese famine and Cultural Revolution on lifetime earnings and the welfare of individuals and families.

Introduction

In recent years, China has experienced a significant shortage of urban unskilled labor, the direct result of a reduced supply of labor from the rural sector. Many argue that this is a clear sign that China has reached the so-called “Lewisian turning point”—the moment when the supply of excess labor diminishes to a point that puts upward pressure on wages.

But this is not correct. In fact, the shortage of unskilled labor in Chinese cities is mainly a consequence of institutional restrictions, explicit or implicit, on rural to urban migration.

This policy memorandum provides evidence for this argument, drawn from the latest data. It discusses how a misreading of China’s “shortage”

of urban labor as an absolute shortage, rather than as the result of institutional restrictions, has led to policies that could generate challenges to China’s future urbanization and economic development. The problem is exacerbated because these institutional restrictions mix with other factors, including a traditional rural-urban divide in China and Chinese politicians’ reluctance to accept the possibility that slums may grow in large cities.

The memo concludes with some topline recommendations. Put simply, Chinese policymakers need to reduce their overreliance on central planning, reform the system that currently constrains migration, and make other changes that reflect economic development needs rather than the bureaucratic assumptions of a plan.

Migration, Urbanization, and Industrial Modernization

Historically, Chinese policy contributed to the emergence of a rural-urban divide by prohibiting any migration to cities for 30 years starting from the early 1950s. Economic growth over the past three decades has led the government to relax these restrictions on rural-urban migration. But workers born in rural areas are still treated differently once they migrate to cities and are regarded as temporary migrants with limited access to welfare and social services.

This discriminatory policy has meant that migrants are unlikely to permanently move to cities with

their families. And this, in turn, has generated a unique feature of rural-urban migration in China—namely, a very high turnover rate as migrants who come to cities do not stay for very long.

If the length of a normal working lifetime is presumed to be 35 years, on average Chinese migrants stay in cities for fewer than 10 years. When individuals are unable to bring their family with them, they inevitably need to go home: to get married, to be present at the birth of children, and to rear and educate the child. Migrants also need to return home from cities when parents are sick and require care.

Under normal circumstances, these life events should not substantially cut short people's working life. But they do so for migrant workers in China precisely because they are not permitted to live in the same place as their families. China's household registration and migration policies—or *hukou* in Chinese—thereby contribute to the higher turnover rate and reduce the stock of migrant workers that can be supplied to cities. And this is probably the *primary* cause of China's current labor supply "shortage."¹

China has always envisaged a different urbanization path from the historical experience that has prevailed in the West.

To be sure, China's policy of restricting migration is consistent with its urbanization policy. Indeed, China

has always envisaged a different urbanization path from the historical experience that has prevailed in the West.

Since the start of economic reform in 1978, the government has insisted that farmers leave agriculture to seek non-farm employment but, at the same, has attempted to ensure that they *not* leave their hometowns. In other words, China intends its urbanization strategy to be planned and controlled, focused mainly on the expansion of small cities. This is part and parcel of an effort to forestall the growth of problems that have plagued big cities in other

countries, such as the development of slums. In this sense, China's *hukou* and urbanization policies are intended to be mutually reinforcing.

One of the government's arguments for not allowing migrant workers to move to cities permanently is that potential financial burdens and complications would result if the current public finance system had to be changed to accommodate rural workers as "true" city residents (i.e., if they were given full status with an urban *hukou*). Another argument that has been advanced relies on the deeply rooted idea that "farmers can leave the agricultural sector but not their hometown" as a means to avoid urban blight.

To see this kind of thinking in action, consider China's newly published "National New Urbanization Plan, 2014-2020." It reflects these ideas by emphasizing the orderly building of small cities and towns in an effort to accommodate any future excess supply of agricultural workers.²

When the problem of a labor "shortage" first became evident in Chinese cities, the government did not presume that the underlying reason was simply a self-inflicted shortage—in other words, the result of policy choices—thus it did not move to systematically change restrictive migration policies. Instead, the government concluded that China had come to the Lewisian "turning point," and so emphasized policies aimed at upgrading industry and

switching to a high-tech and high capital intensity industrial structure. Its intention was to move China toward a more high-tech and services-driven economy.

To this end, many cities (and in particular, China's coastal cities) have used minimum wage policies to actively push out low-technology, low profit margin firms. These policies are having increasingly significant effects on wages, labor demand, and China's future urbanization and economic development outcomes.

Migrants' Rising Wage Levels

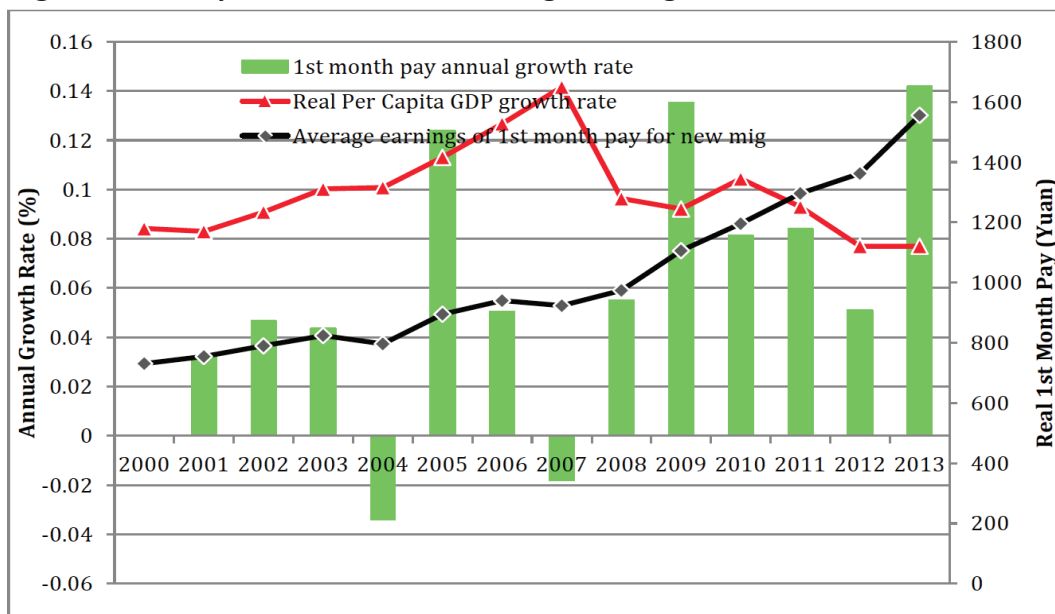
How is this manifest? Since 2009, unskilled migrant wages have increased at an above average rate, even though China's real GDP growth rate has slowed.

Figure 1 presents the growth rate of the real first month's pay for the first job for wage-earning migrant workers—the most unskilled migrant workers—against average real per capita GDP growth. This figure clearly indicates growth of unskilled wages even as overall economic growth in China has slowed.

Such high rates of wage growth could be explained in several ways. For example, the growth could be due to the changing composition of China's workforce. If, from one year to another, the proportion of educated workers increased, the wage increase might not reflect a tightening of labor supply.

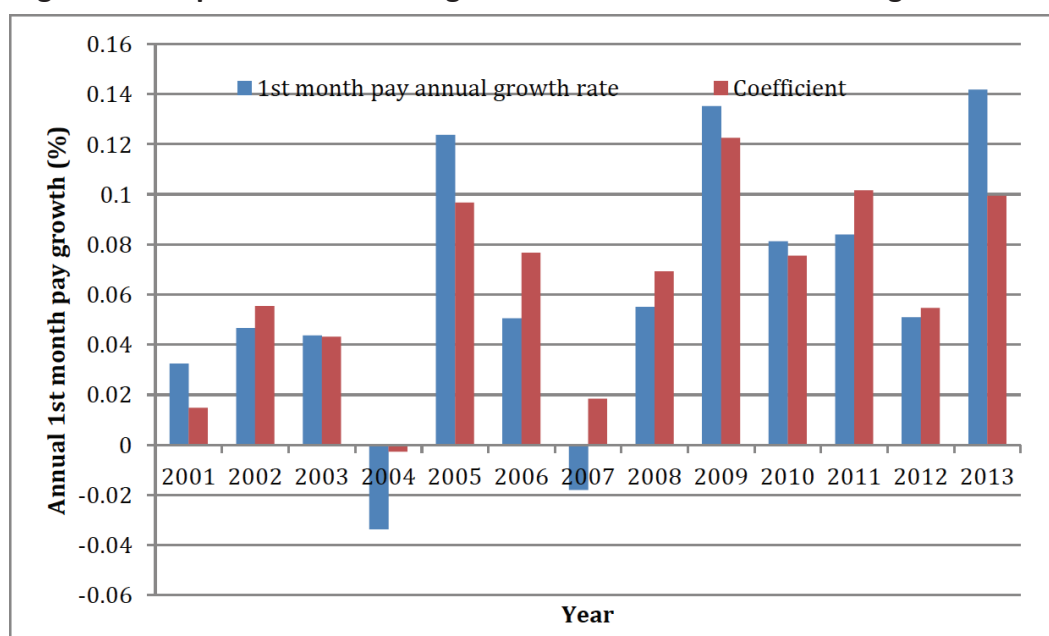
But one can eliminate this explanation by estimating wage equations, standardizing

Figure 1. Per Capita GDP Growth and Migrant Wage Growth



Source: NBS Statistical Yearbooks. Real first month earnings of migrant first job are based on RUMiC survey (RUMiC New Sample). CPI used to calculate real earnings are provincial specific annual CPI using year 2000 as the base.

Figure 2. Comparison of Raw Wage Growth With Standardized Wage Growth*



*Coefficient on the year fixed effects is used to indicate the annual wage growth, standardizing for worker quality.

Source: RUMiC survey (RUMiC New Sample). Adjusted wage growth rates are author's estimates.

for age, gender, marital status, education, number of years since the date of first migration, and city fixed effects. In Figure 2, the coefficient is plotted alongside the growth rate of unadjusted real first month, first job pay for migrants. The conclusion? The standardized wage growth rate differs only slightly from the raw growth rate, and there is evidence of an *accelerating* rate of wage growth.

Reasons for Migrants' Real Wage Growth

How, then, can real wage acceleration in China be explained? It could be the result of various possible explanations, including labor shortages and/or government action to affect wages.

Possible Explanation 1: Labor Shortage?

Aggregate data published by the National Bureau of Statistics (NBS)³ suggest that in 2013 China had 770 million workers (see Table 1). Of those, 72 percent had rural *hukou*, and of the total 552 million with rural *hukou*, 51 percent, or 283 million, still remained employed in the agricultural sector. Household survey data tell a similar story. Using the China Family Panel Survey (CFPS), conducted by Peking University in 2012, one finds that around 22 percent of the rural *hukou* labor force migrated to find work, 28 percent had a non-agricultural job, and the rest (50.3 percent) only had an agricultural job, again suggesting a large endowment of agricultural workers.⁴

Table 1. Labor Force by Sector of Employment, 2013

	Frequency (10,000)	% of Rural Hukou Workers	% of Total Labor Force
Total Labor Force	76,977		
Working in Cities (Both Rural & Urban Hukou)	38,240		
Urban Hukou Workers	21,630		28
Rural Hukou Workers	55,347		72
- working in various level of cities	16,610	30	22
- working in rural non- agri sector	10,284	19	13
- working in agriculture	28,453	51	37

Source: NBS National Economic and Social Development Statistical Report, 2013; author's estimates.

Figure 3a. Age Distribution of Rural Hukou Workers by Sector of Employment in 2012

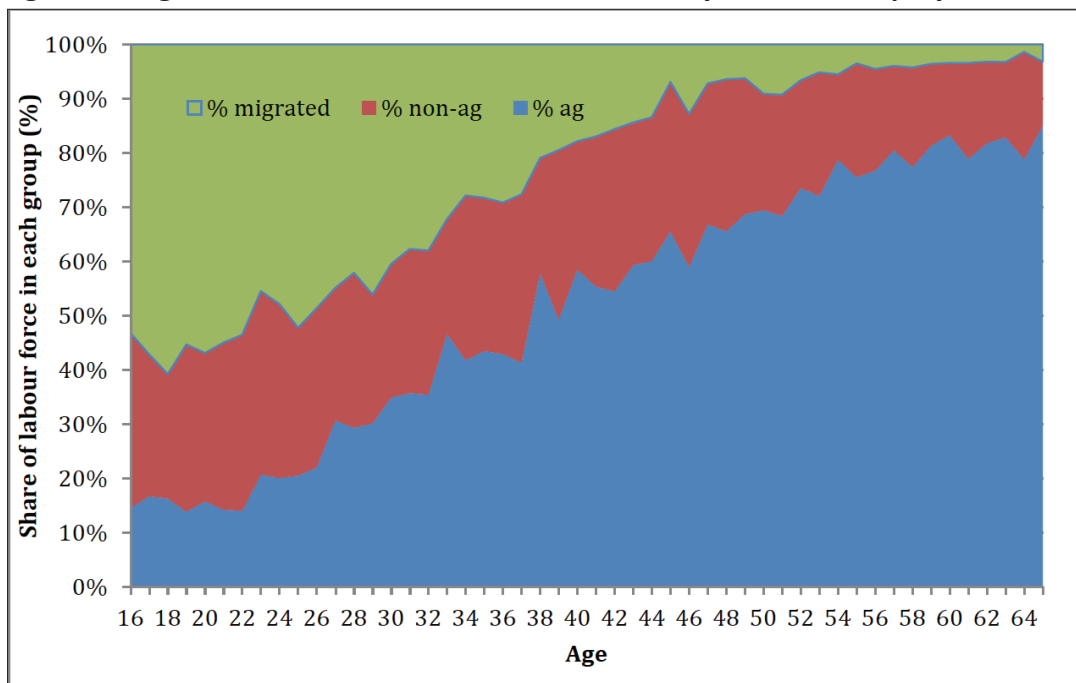
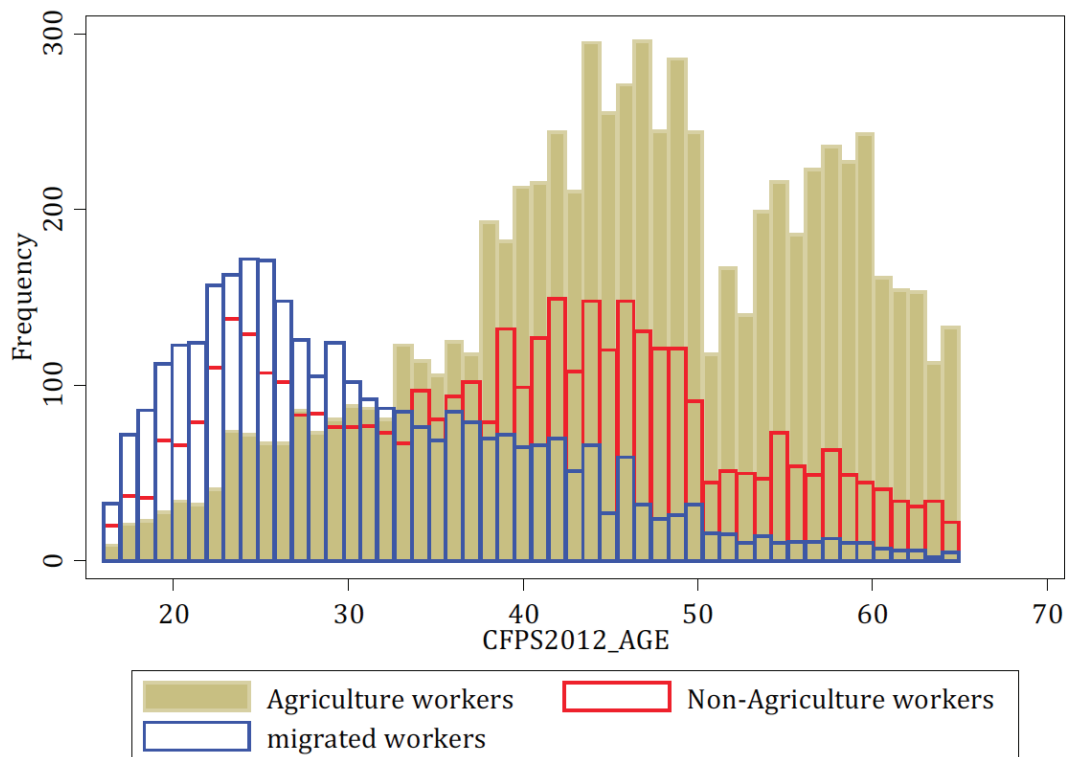


Figure 3b. Number of Rural Hukou Workers as Migrants, Rural Non-Agriculture and Agriculture Workers By Age



Source: Author's own calculation from CFPS, 2012.

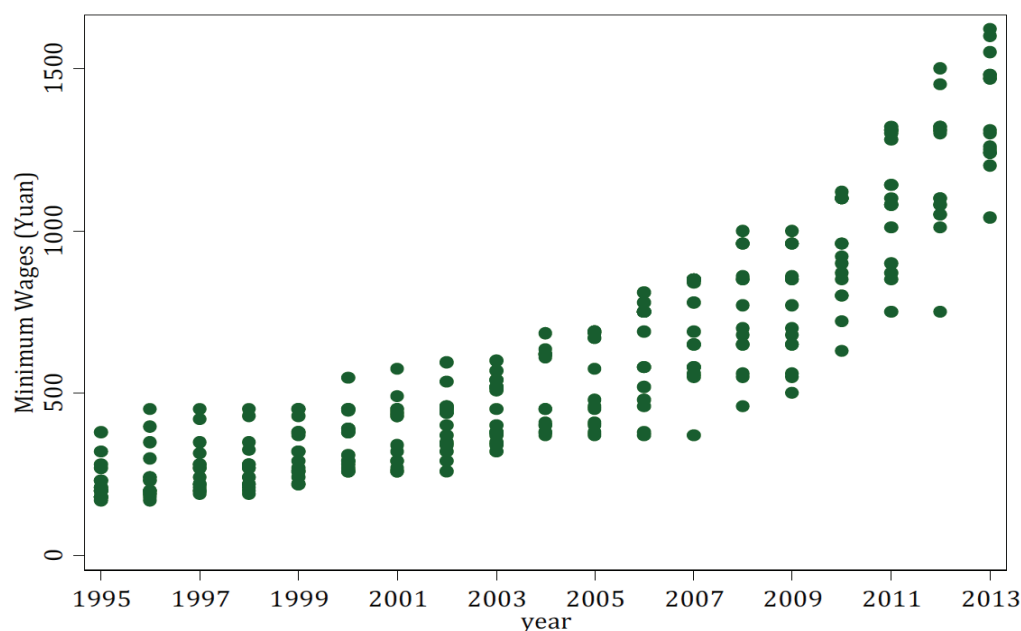
This is an important finding because it is often argued among academics and in policy circles that China's large supply of agricultural labor is not really employable in cities and therefore is not a labor supply that cities can easily tap. The evidence often cited for this view is that such workers are older on average and therefore less educated.

Yet this is much too simple. Figure 3a shows age distributions and Figure 3b the actual numbers of the rural *hukou* population within each group. The figures indeed show that those who work in the agricultural sector are older. But while this description of remaining rural workers in China may be true to some extent, it misses two important points.

First, when these workers were young, a large proportion worked in cities. Data from the RUMiC Rural Household Survey indicates that 34 percent of those who have migrated ultimately *returned* to rural villages.⁵ Had there been no discriminatory policy in place that hindered their ability to live in cities with their families, these migrants probably would have remained to build up human capital and accumulate labor market experience. In other words, not only did China's restrictions on migration lead directly to the labor shortages we now observe but, if these *hukou* and migration policies were to change, the current group of migrants in cities would not need to return home as they age.

This means that there would be reduced turnover in China's urban labor market,

Figure 4. Minimum Wage Changes in 15 Cities, 1995-2013



Source: Data collected from city government websites.

and would significantly increase urban labor supply and the average skill level of migrant workers.⁶

Second, even if workers currently not employed in cities are low skilled, they represent a resource endowment for China. As agricultural productivity increases, these people will need to find other ways to make a living. Economic policies should be targeted at job creation for this resource endowment.

Yet sadly, current policy is moving in precisely the opposite direction. Both the NBS aggregate data for 2013 and the CFPS individual-level data suggest that at least 50 percent of the rural *hukou* labor force still works in the agricultural sector, and another 20 percent in the rural non-agricultural sector. Given the considerable rise in agricultural productivity in recent years and the potential productivity gains that are likely to be generated, there is (and will increasingly be) a significant excess supply of labor in China's rural areas.⁷

Possible Explanation 2: Minimum Wage Effect?

Now, consider the second potential explanation for real wage acceleration in China. There is no doubt that employers in Chinese cities have felt a squeeze in the labor market. So in addition to the fact that institutional restrictions shortened the duration of migrants' stay in cities (and also stopped many from migrating in the first place), another

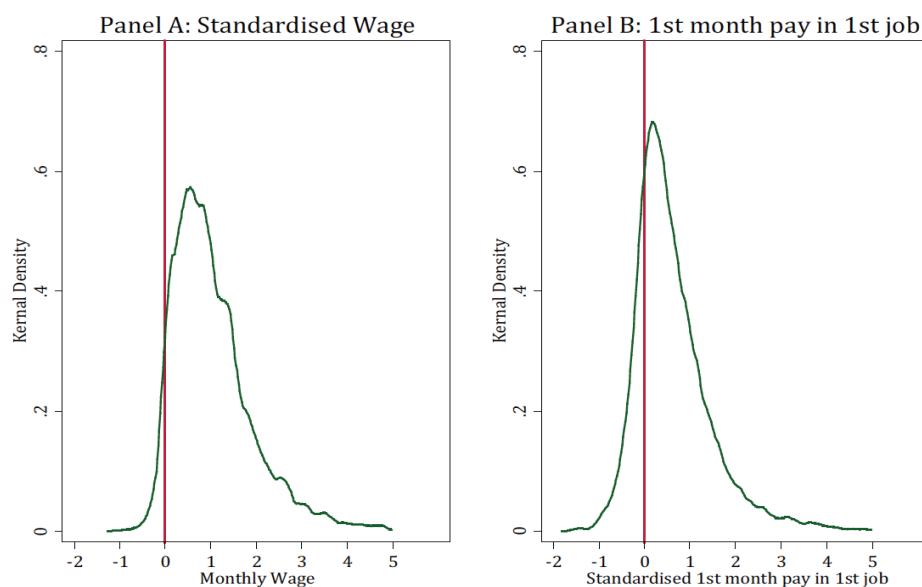
possible explanation involves policy induced wage growth.

China issued its first minimum wage regulation in 1993, and by July 1994, it had become part of China's Labor Law. As living standards, prices, and labor market conditions differ considerably across different regions, the country's provincial and city governments were given authority to set their own minimum wages.

The minimum wage regulation specifies that local governments should set these in accordance with their own minimum living cost, productivity, unemployment, economic development conditions, and local average wages. China's minimum wage regulation was revised in 2004, increasing the penalty rate for violation from the original 20 to 100 percent of the wage owed to 100 to 500 percent of the owed wage.

According to China's 12th Five-Year Plan, minimum wages are set to increase by at least 13 percent per annum.⁸ And among 15 cities surveyed, the minimum wage level over the past two decades has tripled (see Figure 4). At the beginning of the period, the minimum wage dispersion across different cities was fairly narrow. But after 2005 the dispersion widened, suggesting that local governments have been granted considerable flexibility to set minimum wages.⁹

Figures 5a & 5b. Wage Distribution Against the Minimum Wage



Source: Author's own calculation using RUMiC 2008-2013 data.

It is important to note that over the past six years, many coastal cities in China have made the decision to “upgrade” their industrial structure from “labor intensive” to “technology and capital intensive” industries because of a supposed “shortage” of unskilled labor. And one important policy tool to achieve this aim has been to significantly increase the minimum wage in an effort to force out low-skilled, labor-intensive firms with low profit margins.

In many developing countries, it has proved difficult to enforce minimum wage laws and, as a result, the minimum wage is often not binding. Indeed, economists often look to the distribution of wages to identify whether a minimum wage law is or is not binding.¹⁰

Figures 5a and 5b¹¹ plot the minimum wage against the distribution of monthly wages and against the distribution of the first month pay for the first job, respectively. The latter represents wages for the most unskilled workers and, if the minimum wage is binding, should have the greatest effect on this group of workers.

Comparing the two figures, it becomes clear that there is a large spike in the minimum wage for the individual's first month pay from their first job, thus suggesting that the minimum wage in China is binding for very low skilled workers. But when one separately plots the first month's pay for first job by coastal and inland cities (see Figure 6), the spike is more obvious in coastal cities than in inland cities.

A recent study by Standard Chartered Bank indicated that of 356 firms surveyed in the Pearl River Delta, more than 60 percent identified the minimum wage increase as one reason for continued wage growth in 2013. About 10 percent of these firms indicated that the minimum wage hike had a huge impact on wage levels. Another 52 percent of the firms answered that it has had some impact and led them to increase wages more than they initially planned.¹²

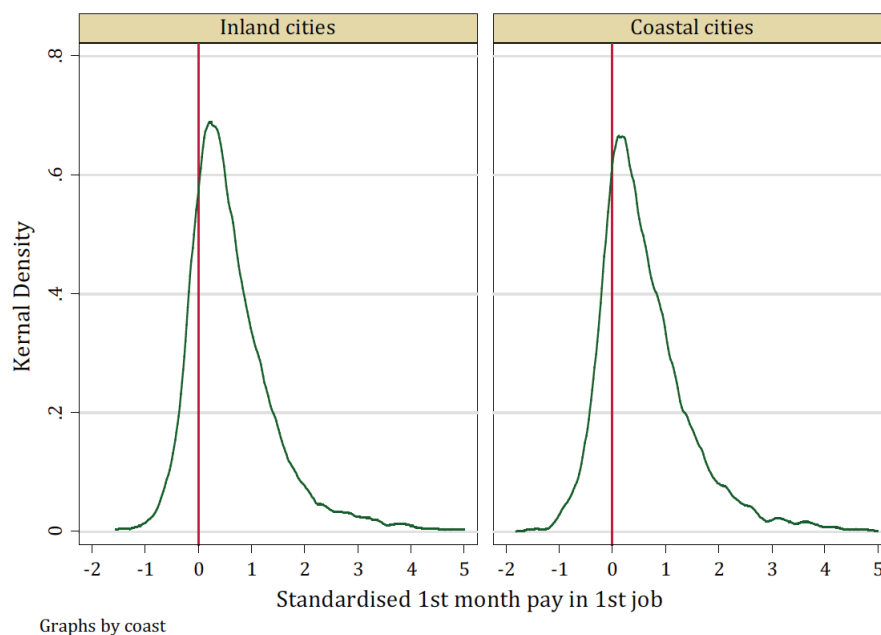
But the critical issue is whether minimum wage increases have *caused* wage growth or, instead, are simply a response to increases in *average wages*? There is no perfect way to address this issue but the data

suggest a significant reduction in the size of the impact when examined at different deciles.¹³ Figure 7 indicates that minimum wage regulations have a strong impact on those who are currently at the minimum wage (see the spike in Figure 5b). The effect dissipates somewhat beyond the first two earnings deciles, but is still strong throughout the distribution.¹⁴

Possible Explanation 3: Agricultural Subsidies and Rural Welfare Provision?

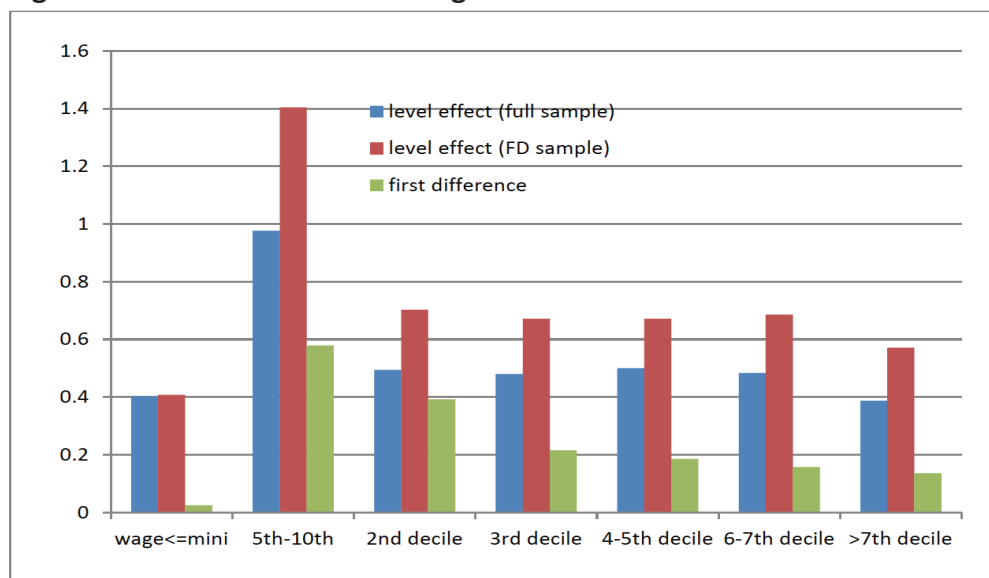
Another possible reason for the increase in migrants' wages could be changes in the agricultural subsidy regime and/or an increase in rural welfare. Such changes would increase the opportunity cost of migration and migrant workers'

Figure 6. Standardized First Month Pay By Region



Source: Author's own calculation using RUMiC 2008-2013 data.

Figure 7. Estimated Minimum Wage Effects



Source: Author's estimates.

reservation wages, thus slowing the flow of rural workers to cities while putting upward pressure on migrant wages in the city.

In China over the last decade, changes in agricultural subsidies and the provision of rural welfare rose in response to the problem of increased rural-urban income inequality. In 2004, China abolished the agricultural tax completely, and the rural *hukou* population received increases in various agriculture subsidies. Based on an NBS report, the total cost of subsidies to “farm production” amounted to more than 200 billion yuan (\$36 billion) in 2013, equivalent to over 360 yuan (\$60) per worker with a rural/agriculture *hukou*.¹⁵ And as part of a strategy to make rural areas richer and more livable, social welfare benefits have

gradually been set in place, including free education, pensions for the 60 and over age group, and healthcare subsidies.

To summarize the findings from the data presented in this chapter:

- Many government policies—including minimum wage increases and increases in agricultural subsidies—have also put upward pressure on urban wage costs in China. Policy choices have effectively induced the “shortage” of rural migrant workers available to join the urban labor force.
- The underlying reason for the significant increase in minimum wage is a mistaken belief that China has run out of unskilled labor supply.

Labor-Related Challenges to China's New Urbanization Strategy

In recent decades, restrictions on rural-urban migration have come under strong criticism, making reform of China's *hukou* system inevitable. This is one reason that the State Council established the new urbanization plan. But unfortunately, a mentality still runs deep in China that farmers, quite simply, should not live in cities. And such notions continue to play an important role in shaping China's new urbanization strategy, which aims to build small cities and towns in an orderly fashion.

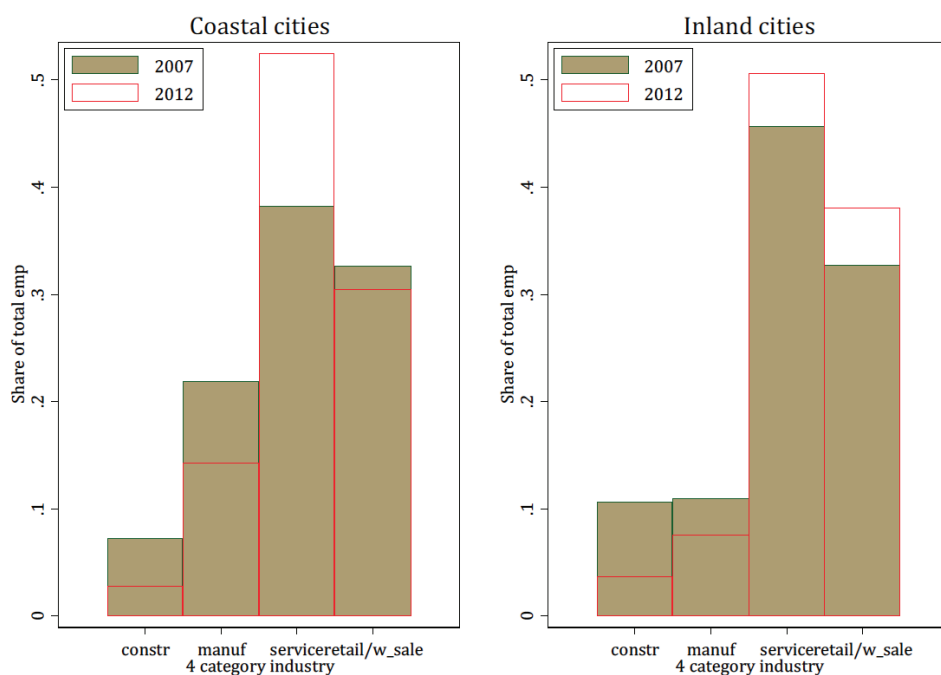
Under the new strategy, the idea that farmers should be kept out of cities has morphed into the new idea that they

should simply be kept out of *large* cities. But that is no real improvement. Indeed, the new strategy may cast a long—and unproductive—shadow over China's future development, much as the old restrictions shaped China's current development path.

Industrial Structure

As discussed in the previous section, which presented various data, many in China have interpreted the shortage of urban unskilled labor as an *absolute* shortage rather than a consequence of policy choices. And this misinterpretation has been the basis

Figure 8. Industrial Structural Changes



Source: Author's own calculation based on RUMiC 2008-2013 data.

upon which many cities have launched an effort to upgrade local industry.

One consequence of these efforts has been to alter China's underlying industrial structure. For example, over the past six years, there has been a significant shift in industrial structure among cities in the RUMiC survey. Using data from RUMiC censuses, conducted in 2007¹⁶ and in 2012, one can compare the change in industrial structure among 15 cities.

A first finding is that the total number of migrant workers in cities surveyed decreased by 18 percent. A second is that the proportion of migrants working in manufacturing and construction decreased from 27 to 15 percent—a 12 percentage-point drop. Those working in service/retail wholesale trade increased by the same proportion.

Figure 8 presents these changes for coastal and inland Chinese cities. It shows that while migrant employment in the construction and manufacturing sectors decreased in both types of cities, it decreased *more* in coastal cities.

Labor Market Misperceptions

These findings raise an important question: As demand for low-skilled workers in medium and large-sized cities decreases because of these industrial upgrades, will China reach a new equilibrium with regard to supply and demand for migrant labor? To put this a bit differently: if China has truly

“run out” of a supply of low-skilled labor, less demand for such workers would of course resolve the “shortage” problem. But if instead the “shortage” is *institutionally* induced, then unskilled workers who remain in the countryside will face challenges finding employment in cities since these industrial upgrades will have changed the *type* of workers needed.

The answer to this question can be found in the fundamental problem identified by this memo—namely, that *institutional* restrictions on migration and other policy choices have *contributed* to the reduction of labor supply to Chinese cities. After all, since more than 50 percent of workers with a rural *hukou* are still mainly engaged in agricultural work, it needs to be asked whether China's agriculture production really requires some 283 million workers? The simple answer is no. And the fact is, many agricultural workers in China are under-employed.

To illustrate, RUMiC data¹⁷ show that individuals engaged mainly in agricultural production worked on average 154 days a year in 2009.¹⁸ Using CFPS data, this figure can be calculated for full-time agricultural workers in 2012, with the finding that on average they were employed just 6.5 months, both in peak and non-peak seasons, which amounts to only 150 working days.¹⁹ Thus, if we assume that a full-time worker in China should work 300 days a year, then as many as *half* of the

Table 2. Education Distribution of Rural *Hukou* Workers in Different Sectors*

Total Sample						
	Agricultural Workers		Non-Agriculture Workers		Migrant Workers	
	Freq	%	Freq	%	Freq	%
Illiterate	2,818	36.96	870	13.94	124	9.96
Primary School	2,022	26.52	1,345	21.55	291	23.37
Junior High	2,163	28.37	2,395	38.38	503	40.4
Senior High	553	7.25	1,127	18.06	211	16.95
3 Year College	57	0.75	326	5.22	73	5.86
University	11	0.14	167	2.68	40	3.21
Master	0	0.00	10	0.16	3	0.24
Age 30-45						
	Agricultural Workers		Non-Agriculture Workers		Migrant Workers	
Illiterate	839	30.42	379	14.98	166	19.51
Primary School	883	32.02	640	25.30	260	30.55
Junior High	867	31.44	991	39.17	307	36.08
Senior High	141	5.11	330	13.04	75	8.81
3 Year College	26	0.94	128	5.06	27	3.17
University	2	0.07	57	2.25	15	1.76
Master	0	0.00	5	0.20	1	0.12
Age < 30						
	Agricultural Workers		Non-Agriculture Workers		Migrant Workers	
Illiterate	106	15.59	53	2.82	54	4.92
Primary School	187	27.50	284	15.11	241	21.95
Junior High	301	44.26	785	41.78	503	45.81
Senior High	64	9.41	488	25.97	205	18.67
3 Year College	16	2.35	167	8.89	65	5.92
University	6	0.88	98	5.22	27	2.46
Master	0	0.00	4	0.21	3	0.27

*non-agriculture workers refer to rural workers only.

Source: CFPS 2012.

283 million workers currently engaged entirely in agricultural work could be made more productive by moving them into the non-agricultural sector.²⁰

Could these farmers instead be employed in cities? Perhaps not as easily because the movement to “upgrade” industry has created a

mismatch between the skill levels of current agricultural workers and the “upgraded” city jobs for which they would presumably be hired.

Table 2 compares the distribution of education levels for those who are currently engaged mainly in agricultural work, in non-agricultural work, and migrants. More than 60 percent of the first group has only a primary school education or lower, and more than 65 percent of the latter two groups have junior high school education or above. Since the effort to upgrade industry in cities has altered the industrial structure and increased the demand for *skilled* workers, a continuation of this effort will, in fact, *worsen* employment prospects for the remaining group of agricultural workers since they are low skilled.

Might time and generational change solve this problem? That seems unlikely. Table 2 also compares the educational distribution for different age groups of current agricultural workers. They show that current agricultural workers are *less* educated in *all* age brackets. So if the “upgrading” policy continues, the situation for this group of the less-educated will only worsen. And the lower quality of rural education creates additional obstacles to the problem of assuring a robust supply of skilled rural labor.

Small Cities and China’s Future Growth

The Chinese government intends its new urbanization strategy to solve these problems. But there are a number of challenges in its approach.

One challenge is that no concrete measures or clear directions are offered up in China’s national strategy. Here is what the strategy says: strictly restrict *hukou* permission for mega cities of at least 5 million inhabitants. For large cities of 3 to 5 million inhabitants, the term used to describe *hukou* permission is the vague “reasonably contained.” The document states that *hukou* restrictions can be slightly relaxed for cities with populations of 1 to 3 million. For cities with populations of 500,000 to 1 million, *hukou* restrictions can be relaxed in an “orderly” fashion. And for local towns, there will be no *hukou* restrictions.

But it is unclear, for example, whether individuals and their families who are already working in mega cities or large cities will be able to obtain *hukou* status, or whether instead they will be encouraged to head to medium or small cities.

Another challenge could be that although the national plan details at great length the various *hukou* permit restrictions for different types and levels of cities, very little is said about where the jobs will come from in these cities.

The government's intention seems to be to re-channel current migrants away from large cities toward medium-sized cities, while encouraging many current farmers living in rural areas to relocate to small local towns.

But this is economically inefficient and unlikely to succeed. A proper and rational urbanization process would be one in which individuals choose to go to cities where they can thrive and survive. In other words, people will naturally migrate to the cities where they can obtain jobs. But the national urbanization strategy uses *hukou* policies to direct people to locations *regardless* of whether jobs are actually available. Indeed, it is unclear whether central planners are even capable of governing mobility on such a large scale, since the Chinese economy is now much less responsive to a plan and more reflective of market forces than in the past.

Perhaps there are ways to “re-channel” population movements toward China's medium-sized cities. For example, China could build *satellite* cities close to mega and large cities or re-direct industries to medium-sized cities. But policymakers would need to understand the potential costs and tradeoffs of each

option. The new urbanization strategy does not seem to exhibit such nuanced understanding. Using administrative tools—a common practice of Chinese bureaucrats—may only exacerbate labor market tensions.

Indeed, even an effort to move farmers to local towns could prove challenging. Once moved, where will their employment prospects come from?

The bottom line is this: using administrative tools to encourage the development of small towns may, in the long run, suppress economic growth and depress human capital investment.

Hukou and mobility policies need to be considered alongside labor market trends and job creation realities. Too often, small towns are located far away from input and output markets. One recent study, for example, found that US workers change occupation and industry less often in large cities than in small cities.²¹ That is because there are not enough firms in the same occupation or industry within smaller cities. In other words, individuals in less population-dense markets cannot become too specialized or they risk not being able to find another job if displaced.

Conclusion

Economic development in all countries is shaped by local institutional constraints. So not surprisingly, China's unique policies that restrict the supply of rural labor to cities have generated many past and future development challenges.

This memo has linked a recent labor market phenomenon in China, namely rapid wage increases for migrant workers, to past and current institutional constraints and policy choices. The unavoidable conclusion of the data and analysis is that the cost to the Chinese government of pursuing an "orderly" and planned urbanization route is quite high.

Instead, it would be wise to try to assess the overall skill level of the current and future rural labor supply. These populations are, and will continue to be, the majority of new entrants into the Chinese urban labor market.

China needs to rethink whether it can afford to over-emphasize high-tech industries at this stage, given the skill levels of the country's current and future labor supply.

Another basic conclusion is that central planning has costs. For instance, if rural workers are only permitted to live in small cities where jobs may not be available, that policy will create economic and social instability.

Another, more important policy conclusion is that China's ongoing shift toward a more capital- and technology-intensive industrial structure increases the urgency of improving education for rural children and urban migrant children. This will give them a broader set of skills that aligns better with the actual and emerging conditions of China's urban labor market.

But ultimately, the most difficult reform may be a wholesale revision of the *hukou* system. China needs to allow migrants to settle in the cities where they are *most* likely to find jobs. This will require broader changes to China's social welfare system, which in turn will require significant reforms to the public finance system.

These are no doubt challenging reforms. But they are necessary adjustments to the policy conditions that have wrought the labor "shortage" now afflicting urban China.

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Endnotes

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⁸ Lau, K. and Narayanan, C., “China-375 Clients Talk Wages in the PRD,” Standard Chartered Bank, On the Ground (2014), https://research.standardchartered.com/configuration/ROW%20Documents/China_%E2%80%93375_clients_talk_wages_in_the_PRD_18_03_14_02_00.pdf.

⁹ Wang, J. and Gunderson, M., “Minimum Wage Impacts in China: Estimates from a Specified Research Design 2000-2007,” 2011, *Contemporary Economic Policy*, 29(3), pp.392-406.

¹⁰ Brown, C., “Minimum Wages, Employment and the Distribution of Income,” in the *Handbook of Labor Economics*, Ashenfelter, O. and D. Card (eds.), Vol. 3, pp2101-2163; also see: Alatas, V., Cameron, L.A., “The Impact of Minimum Wages on Employment in A Low-Income Country: A Quasi-Natural Experiment in Indonesia,” 2008, *Industrial and Labor Relations Review*, 61(2), pp.201-223.

¹¹ Because the minimum wage for different cities and years is set at a different level, I have standardized monthly wages and the first month’s pay for the first job using the following formula, which sets the minimum wage at zero for each distribution: $STANDARDIZED\ WAGE_{ijt} = (Wage_{ijt} - \text{Mini Wage}_{jt}) / SD(Wage)_{jt}$.

¹² Lau, K. and Narayanan, C., “China-375 Clients Talk Wages in the PRD,” Standard Chartered Bank, On the Ground (2014), https://research.standardchartered.com/configuration/ROW%20Documents/China_%E2%80%93375_clients_talk_wages_in_the_PRD_18_03_14_02_00.pdf. Viewed from another angle, this is indicative of a binding minimum wage. The question, however, is the size of the effect of the minimum wage increase—and also if that effect is restricted to those just below or just above the minimum, or instead whether the minimum wage increase has spillover effects further

up the earnings distribution. Using the latest RUMiC survey data, regression analyses reveal that, in general, there are statistically significant effects for all workers, but the effect is strongest for workers whose wages are just above the minimum wage. For individuals in this group, every 10 percent increase in the minimum wage increases their earnings by 9.8 percent, almost a full spillover. But the effect drops to around 5 percent and stays that way for the next five wage deciles, and then falls further to 3.9 percent.

¹³ I try to absorb potential endogenous effects by including city and year fixed effects, as well as city specific time trends. Nevertheless, there will inevitably be policy changes the government intends for the future (time varying city effects) that my model does not control for. To further pin down the minimum wage causal effect, therefore, I examined the impact of changes in the minimum wage on the changes in wages at different earnings deciles. The within-city changes in minimum wage affects are just below 60 percent of the changes in earnings for the 5th to the 10th decile. Further up the earnings distribution ladder, the effect reduces. And from the third earnings decile onwards, the effect becomes smaller and statistically insignificant.

¹⁴ For the change effect, it becomes statistically insignificant after the 20th percentile.

¹⁵ National Economic and Social Development Statistical Report 2013, National Bureau of Statistics, Beijing: China Statistics Press.

¹⁶ Note that 2007 was before the first wave of the survey.

¹⁷ To establish a sampling frame for the RUMiC survey, the RUMiC team conducted a census within the randomly selected grids of each of the 15 survey cities. Within each grid, every workplace, including street vendors, were interviewed to inquire as to the number of migrant workers in the factory, shop, construction site, restaurant, market, or on the street (see <https://rse.anu.edu.au/rumici/> for a detailed discussion of the census procedure). We repeated this census procedure at the end of 2012 to make sure that our sample would continue to be representative.

¹⁸ Rural Household Survey data, see Kong, S. T., Meng, X., and Zhang, D., “The Global Financial Crisis and Rural-Urban Migration,” 2010, in Ligang, Song and Wing Thye Woo (eds), *China’s New Place in a World in Crisis: Economic, Geopolitical and Environmental Dimensions*, Canberra: Asia Pacific Press.

¹⁹ This assumed that two-thirds of their work period was during the busy season and one-third during the normal season.

²⁰ The calculations in this sector are very conservative because it is likely that the future will bring substantial increases in agricultural labor productivity. The village head in a survey village (Jiaoti village) in Hubei province relayed anecdotally that the village is engaged in negotiation with a farming company, which hires 14 people to plant 4,000 mu of farmland. Jiaoti village has around 1,000 mu of farmland and the net income per mu is currently at around 1,300 yuan per mu per year. The farming company has agreed to rent all of the land from Jiaoti village at 1,300 yuan per mu per year. This appears to be an attractive arrangement for the village. If successful, almost all of the village’s current workforce engaged in agricultural work (around 300 people) will be made redundant. According to the village head, many surrounding villages have successfully rented out their land. So if the negotiation is successful in Jiaoti Village, the remaining farm laborers will be without work.

²¹ Bleakley, H. and Lin, J., “Thick-Market Effects and Churning in the Labor Market: Evidence from US Cities,” 2012, *Journal of Urban Economics*, 72, pp.87-103.

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