The Differing Effects of Individual and Contextual Factors on China's Interprovincial Migration of the Floating Population: Urban and Rural Migrants

Abstract: China's floating population, numbering more than 250 million, has greased the wheels of China's labor market and increasingly come from urban rather than rural sources. Using microdata from the nationally representative China Household Finance Survey (CHFS) and contextual data from China's decennial census and yearbook, this paper examines the sources of differentials between rural and urban migrants in interprovincial migration during the 2011-2015 period. Three sets of factors are examined: individual human capital, institutional barriers, and contextual factors in the province of residence. Results show that while human capital factors are important sources of the differentials, institutional barriers, including hukou and migration regulations, remain major obstacles to rural migrants. Contextual factors, such as industrial upgrading, environmental quality, and employment opportunities, have differing effects on the interprovincial migration of the two groups. While service industries attract migrants, rural migrants seem less sensitive to air pollution and housing prices than urban migrants.

1 Introduction

Since 1978, rapid economic growth has transformed China from an agricultural economy to an industrialized and urbanized one, leading to an unprecedented surge in rural-urban migration—the phenomenon of the floating population (Sun and Fan 2011; Liu et al. 2014). As part of China's economic reform, the central government allowed a growing number of migrants to work in cities where there were a large demand for cheap labor (Fan 1996; Zhu 2007; Zhong et al. 2013). Uneven regional development has led to China's great internal migration—the largest one in human history (Shen and Huang 2003; Vendryes 2011). Migration destinations include many rapidly industrializing coastal regions, such as the Pearl River Delta (PRD), the Yangtze River Delta (YRD) and the Beijing-Tianjin regions (He et al. 2016). The size of the floating population has increased from 121 million in 2000 to 221 in 2010, and to 247 million in 2015 (ONPSS 2017).

The floating population is a major force in China's economic growth, contributing to 21% of annual GDP growth in the post-reform years (Cai and Wang 1999). The floating population made up about 35% of China's total workforce in 2015—15 percentage points higher than its share of Chinese pouplation (Freeman 2015). Rural-urban migrants take up lion's share of the floating population; agricutural *hukou*[1] holders made up 87% of the floating population in 2010 (PCOSC and NBC 2012). Meanwhile, urban migrants who are making a growing share of the floating

[1] There are two major aspects to the *hukou* system of China. One is the distinction between agricultural *hukou* and nonagricultural *hukou*. Nonagricultural *hukou* holders, who made up 29% of China's population in 2010, live in cities. In contrast, many agricultural *hukou* holders have disengaged from agricultural activities and moved to cities. The second aspect is the location of the *hukou* registration. Many major cities still heavily subsidize residents with local *hukou* registration (Fan 2005; Chan and Buckingham 2008).

population and providing an important impetus for economic growth appear very different from rural migrants in their migration deicisons.

There has been gradual, but significant, changes in migration in recent years (S. Li et al. 2014; Liu and Xu 2017). First, many coastal cities have begun to replace labor-intensive manufacturing activities with service and creative industries, reducing the demand for low-skilled migrants (H. F. Liao and Chan 2011; Hao and Tang 2017). Second, there has been a large increase in investment on real estate and public services in many cities. While migrants have to pay more on housing, cities often restrict migrants from accessing public services (Yu 2006; Zang et al. 2015). Third, the central government has given more controls of migration to cities, especially if the city's urban population is above 3 million (StateCouncil 2014). Meanwhile, cities have had diverging views on the floating population. While tire-1 cities, such as Shanghai and Beijing, are increasingly hostile to less-educated and low-skilled migrants (L. Wu 2013; S. Li et al. 2014), many lower-tier cities have become more accommodating to the floating population (Zang et al. 2015). Fourth, emerging urban issues, such as air pollution and traffic congestion, seem to have made many top tier cities less attractive to migrants (Chen et al. 2013; Aunan and Wang 2014).

China's internal migration and rapid urbanization have attracted much scholarly attention (Fan 1996; Vendryes 2011; Shen 2013; Huan Li et al. 2016). However, few have studied how human capital and contextual factors have differently affected urban and rural migrants in their migration decisions.

Given the importance of the floating population in China, we aim to examine three

interrelated research questions: (1) To what extent has the composition of the floating population changed from 2010 to 2015? (2) To what extent have rural and urban migrants respond differently to human capital and contextual factors in their migration decisions? (3) How has the relative importance of institutional barriers, such as migration regulations and the hukou system, have affected the migration decisions?

2 Literature review and conceptual framework

2.1 Theoretical background

Migration has played a central role in urbanization and economic development, and generated extensive scholarly attention (Benson and O'reilly 2009; Shen 2015). The literature suggests that internal migration is affected by factors, such as individual-level factors, uneven regional development, institutional transitions, and environmental changes (Fan 2002; Carr 2005; De Haas 2010).

In the neoclassical and behavioral views, individuals migrate to maximize utility and improve personal finance (Sjaastad 1962). The neoclassical approach emphasizes the impacts of human capital, cost-effectiveness, and risks on individual's migration decision (Sjaastad 1962). Everything else being equal, people migrate because they anticipate better living environment, more employment opportunities, and higher wages in their migration destination (Michaelides 2011). Meanwhile, the behavioral approach considers migration as a complex process of decision-making, which is also affected by contextual and psychological factors (Gurak and

Kritz 2000). Social networks and personal relations also matter in migration decisions (Michaelides 2011; De Haas 2010). Both the neoclassical and behavioral perspectives have paid relatively little attention to macro-economic and institutional factors, which are important in developing countries (Fan 2002).

The structural approach, which is based on the Lewis-Fei-Ranis model (Lewis 1954; Ranis and Fei 1961), is another perspective in the study of population redistribution (Fan 1996). Researchers have highlighted the importance of labor market segmentation, uneven economic opportunities, and institutional context in migration (Fan 2002; Cai and Wang 2003). Rural-urban migration is considered as a tug-of-war between the agricultural and the industrial sectors of the country, energized by growing industrial productivity and wage differentials between the two sectors. Industrialization leads to higher wages in cities which attract migrants from less-developed areas (Gupta 1993; Fan 2005). Furthermore, the structural approach has emphasized the role of institutional factors. Migration rules and population regulations have greatly affected internal migration in countries such as China (Vendryes 2011).

Researchers have paid more attention to the effects of climate and environmental changes on migration in recent years (Carr 2005; Black et al. 2011). Research shows that, as expected, disasters push people away, while a pleasant natural environment draws migrants over the long run (Adger et al. 2015). Meanwhile, there has been a steady increase in the “lifestyle” migration, by which the relatively affluent move for quality-of-life reasons instead of economic opportunities (Benson and O'reilly 2009).

Migrants seem to have paid more attention to the quality of life, amenities, and social welfare in their migration decisions over the years (Wang 2011; Cheng et al. 2014; Han Li et al. 2016). Finally, urban issues, including overcrowding and rising living costs, have pushed many migrants away from major cities (Yu and Myers 2007; Eimermann 2015).

2.2 Migration research in transitional China

A large body of literature has examined China's internal migration and its determinants in the past thirty years (Shen 2015; Liang et al. 2014; Liu and Xu 2017). Researchers have regarded China's internal migration and the emergence of the floating population as the result of institutional forces, economic factors and individual choices (Fan 1996; Shen 2013).

State intervention and institutional changes have greatly affected the distribution of the floating population in China (L. Li et al. 2010; Shen 2013). Institutional factors, such as the *hukou* system and the planned labor allocation system, severely curtailed internal migration from the mid-1950s to the early 1980s (Chan and Buckingham 2008). Since the 1960s, China's central government assigned millions of skilled workers and young people from cities to the hinterland for the purpose of enhancing national defense and political stability. In contrast, self-initiated mobility was low in the pre-reform era (Liu et al. 2014). Since the 1980s, the Chinese government has gradually relaxed its control over migration, which led to a massive increase in internal migration and the emergence of the floating population (Liang et

al. 2014). While the central government is abolishing the old *hukou* system, institutional constraints still affect mobility (Chan and Buckingham 2008; CPC and StateCouncil 2014). It is difficult, if not impossible, for the floating population—either urban residents or rural migrants—to "move" *hukou* to major cities such as, Beijing and Shanghai, and gain full access to the public services there (Sun and Fan 2011; Cheng et al. 2014). *Hukou* location and, to a decreasing extent, *hukou* status still determine one's life opportunity in China (L. Wu 2013).

Studies based on the neoclassic and structural approaches have examined the effects of market forces and regional inequality on China's internal migration (Fan 2005; Shen 2013). China's coastal region improved its regional economy quickly since the mid-1980s, due to their locational and institutional advantages (Wei and Ye 2009; Wei and Liefner 2012; F. H. Liao and Wei 2015). Coupled with the *hukou* reform, the rapid economic growth attracted massive migration from the less-developed and inland regions to the coastal region (Fan 2005; Zhong et al. 2013; Liu et al. 2014). Since the early 2000s, economic development has accelerated in Central and Western China (Wei 2015). Consequently, people are moving to the western and interior regions. There is also a growing geographic diversification of migration destinations (Liang et al. 2014).

As China's economy matures and the standard of living continuously improves, migrants seem to have paid more attention to amenities and lifestyle in their migration decisions (Wang 2011). Migrants, especially if they are young and skills, prefer developed regions that have high-quality public services (Fan 2005; Cheng et

al. 2014; Liu and Shen 2017). More recently, migrants are facing new issues such as, rising housing prices, air pollution, and congestion (Aunan and Wang 2014; Zang et al. 2015). However, it is still unclear how these factors have affected the distribution of the floating population in China.

2.3 Conceptual framework for migration decisions

Based on the literature review, several push and pull forces have emerged and affected the distribution of the floating population. Figure 1 shows our conceptual framework of the relationship between the emerging forces and migration redistribution in the new phase of Chinese economy and urbanization. We pay particular attention to the changes in economic development, public policy and urban amenities.

(Figure 1. about here)

With regard to the driving forces behind China's internal migration, market forces are clashing with public policy. Major cities such as Beijing and Shanghai have experienced a rapid increase in productivity and wage growth, becoming even more attractive to migrants (Liu and Xu 2017). However, these productive cities, which have suffered from overcrowding and deteriorating quality-of-life, have been pushing migrants away through stricter migration regulations (L. Li et al. 2010; S. Li et al. 2014).

In addition, the productive cities have attempted to further increase productivity by industrial upgrading and by promoting the agglomeration of strategic and

innovative industries (F. H. Liao and Wei 2013; He et al. 2016). While these new policies have benefited educated and skilled migrants (Liu and Shen 2017), they have pushed low-end industries away from large cities (Zhong et al. 2013). In contrast, with the support of the central government, many lower-tier cities have accelerated the pace of industrialization and become more attractive to the less-skilled (He et al. 2016).

There has been a large increase in housing investment, which has resulted in a sharp increase in housing price in most Chinese cities (J. Wu et al. 2012). Research has shown that, as a pillar of China's urban economy, housing has played an increasingly important role in China's internal migration (Zang et al. 2015). As a reflection of a strong urban economy, rising prices may attract even more migrants and investors. However, high housing prices also increase the cost of living and deter migrants, especially in major cities (S. Li et al. 2014).

Second, the availability of public services, and the changes of China's migration regulations are playing an important role in migration decisions. The floating population are more likely to move for cities with higher level of public expenditure, which is directly correlated with the level of public services and social welfare (Zhu and Chen 2010; Cheng et al. 2014). Meanwhile, significant changes have taken place in China's state intervention and local migration policies since the early 2010s. The central government has implemented the "National Major Function Zones Planning", which encourages the agglomeration of population and industries in the prioritized zones (StateCouncil 2010). More recently, China's State Council has

announced that cities with population over than 3 million could implement their own migration regulations such as the "points-based *hukou* system (*jifen luohu*)" (StateCouncil 2016, 2014).

Third, regional differences in amenities such as, environmental quality and infrastructure, have also affected the redistribution of the floating population (Chen et al. 2013; Hao and Tang 2017). The rapid industrialization and urbanization have generated many issues including air pollution and traffic congestion (Cai et al. 2018). As a result, migrants have begun to move away from some large cities and resource-based and heavy industrial cities. In contrast, lower-tier and environment-friendly cities—that are more affordable and have better amenities—seem to have attracted migrants, particularly the new generation of migrants who are more concerned about the quality of life than their predecessors (Zang et al. 2015; Yu 2017).

It is unclear how urban and rural migrants have responded different to the incentives and disincentives. While urban migrants have non-agricultural hukou and access to the welfare system in their home town, they lose all the privileges after migration to other cities. In most cases, urban migrants are not treated differently from rural migrants once they are away from their hometown and from the location of their hukou registration. Meanwhile, urban migrants tend to be better educated and endowed than rural migrants. If they are considered talents, they may receive special treatment from the government of the migration destination.

3 Data and methodologies

3.1 Data sources

The microdata are from China Household Finance Survey microdata (CHFS) collected in 2011, 2013, and 2015 (Gan et al. 2013). It is a nationwide and comprehensive survey for household finance in China. The survey covers all provinces except Tibet, Xinjiang, Inner Mongolia, Hong Kong, Macao, and Taiwan. The survey collects rich information on human capital and institutional attributes such as hukou status and communist party membership.

The contextual data used in this study are derived from the two recent population censuses in 2010, and the 1% sample population survey in 2015. These data are collected by National Bureau of Statistics of China, which sets the national standard for data collection. We acquire the supplemental data from provincial and prefectural statistical yearbooks from 2011 to 2014. We build our contextual variables using data from the China City Statistical Yearbooks (CCSY).

We define floating population (*liudong renkou*) as people who are residing in a location that is different from the county (or city) of their household registration (*hukou*) and who have stayed at the place of destination for at least 6 months. While rural migrants have agricultural hukou, urban migrants refer to those who have non-agricultural hukou and who are residing in a location that is different from the county (or city) of their household registration (*hukou*).

3.2 Methodologies

3.2.2 Empirical models and variable specifications

We study individual and contextual factors that have affected the migration

decisions of urban and rural migrants across urban China. We build the following conceptual model to examine the relative importance of the factors:

$$FP_{it} = \mathrm{F}(Eco_{it-1}, Pub_{it-1}, Ame_{it-1}) \quad (5)$$

where i means the sample cities, t is the study period. FP is the dependent variable, which represents the migration decision. Eco, Pub, and Ame represent independent variables related to human capital characteristics, institutional barriers, and contextual factors including economic transition, public policy, and urban amenities.

4 Changing distribution of the floating population in urban China

4.1 Spatiotemporal patterns of the floating population

There has been a gradual but significant change in the spatial pattern of the floating population from 2010 to 2015. First, in the beginning of the 21st century, the floating population was concentrated in tier-1 cities, such as Beijing, Shanghai, Guangzhou and Shenzhen. Public policies have encouraged the dispersion of the floating population from major cities. Second, several resource-based cities located in Inner Mongolia, Shanxi, Jilin and Liaoning provinces had lost people to out-migration. Third, except for some provincial capitals, cities located in central China were losing population to out-migration. Fourth, there has been a sharp increase of eastward migration; coastal mega-regions (i.e. the PRD, the YRD, and the Beijing-Tianjin regions) emerged as the main migration destinations. Fifth, tier-2 cities such as Chengdu, Zhengzhou and Wuhan, have seen a large increase in population.

5 Expected findings

We expect to see that while human capital factors are important sources of the differentials, institutional barriers, including hukou and migration regulations, remain major obstacles to rural migrants. Contextual factors, such as industrial upgrading, environmental quality, and employment opportunities, have differing effects on the interprovincial migration of the two groups. While service industries attract migrants, rural migrants seem less sensitive to air pollution and housing prices than urban migrants.

From 2011 to 2015, there has been a significant redistribution of the floating population. Coastal mega-regions, especially several tier-1 cities and provincial capitals, have experienced a decline in the growth of the floating population.

Our regression results indicate that the interactions between the push and pull factors have resulted in the ebb and flow of the floating population, and the relative importance of determinants is different between urban and rural migrants. Regional inequalities in economic development, job opportunities and wage level are still the main driving forces behind China's eastward migration. Our finding suggests that service industries are the leading sector that attracts rural migrants. The results also show that quality social welfare and public services are attractive to urban migrants. Moreover, attractive environment and amenities play an increasingly important role in China's internal migration. Urban migrants are particularly attracted to economic opportunities, quality public services, and amenities.

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