Urbanization Process Models, Internal Rural-Urban Migration, and the Role of Institutions in China
Three Essays on Urbanization and Migration

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Abstract

This dissertation is a collection of three essays on urbanization and migration. The first essay is a treatment on the urbanization theory. I discuss the ambiguity in the urban concept, and propose a comprehensive urban concept which includes the demographic, physical, economic, social, and cultural dimensions of urban characteristics. Based on the concept, and through analyses of the countries' preference over specific urban definition methods, I propose the Kuznets Curve for urban definition complexity, and the Hypothesis of the Unbalanced Urbanization Process. I test the hypothesis with a case study of five countries: the United States, Mexico, China, India, and Ethiopia. With the findings I call for a paradigm shift in the study of the urbanization process, which constitutes the general framing of the dissertation.

The next two essays concern the application of the framework in a specific country – China, and relevant studies on the country's internal migration. The studies are based on two nation-wide, large-sample surveys on the migrants and rural households' living conditions in 2008-2009 (n=2398) and 2014-2015 (n=2097). In the second essay, I study the life-cycle migration behavior pattern of China's internal rural-urban migrants. I first conduct a statistical treatment of the general demographics as well as individual-level migration-related behavioral patterns of the migrants, and then reconstruct the life history of the migrants through survival analyses on their migrating and return migrating behaviors, and also two Cox proportional hazard models respective to the two survival processes which examine the determinants of such behaviors. Results give rise to an overlapping generational and iterative pattern of the migrants' migration behavior with a

filtration mechanism, which I call "the Circle of Life" model. Lastly, in the third essay, I examine the role of China's institutional environment in shaping the unique migration behavior pattern. I conduct a thorough documentation on the evolution, and especially the recent development of China's Hukou (household registration) and land ownership policies, and show the shift of a dual social structure as a result of the policy change. Furthermore, I develop two groups of discrete choice models to examine the formation of the migrants' urban settlement intentions. Overall, I conclude that China's institutions have played an empowering function, thus giving rise to an institution-bound rational choice behavior concerning migration and settlement. Lastly, I briefly discuss the implications of the findings on urbanization and development theories, as well as the policy suggestions.

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enjoyed the joie de vivre. I can hardly name them one by one since there are so many, but I would like to especially thank Dr. Tao Liu, my undergraduate roommate and a much better researcher than me. He has been an unofficial academic advisor to me since the undergraduate times, and I hope with my tiny achievements so far he will feel proud of it. I would also like to thank Hongmou Zhang, with whom I discussed a lot on both academic and non-academic issues in the past two years, and I take it as a pleasant experience.

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Introduction

The latest wave of rapid urbanization, primarily taking placing in developing countries, is creating new forms of urbanism with unprecedented characteristics and thus posing new questions to the field of urbanization studies. How to measure the levels of urbanization in countries with different contexts in a comparable manner? How have the internal rural-urban migration and the immigrants' microscopic behaviors affected the macroscopic patterns of urbanization? And what roles have relevant public policies played in the urbanization process? Originated from the recent urbanization processes in developing countries, these questions have seriously challenged the existing urbanization theories drawn mainly from the Western urbanization experiences, and are thus calling for new studies.

In this dissertation, I answer the questions through a series of studies, and establish a new theoretical framework that can explain and evaluate the latest urbanization processes in developing countries, especially in China. The contents are formulated in three essays.

The first essay stems from the ambiguity in the urban concept, which, as shown in the real-world urban population definitions in the United Nation's World Urbanization Prospect (WUP, the 2011 revision), is temporally inconsistent and internationally incomparable. I argue that this is due to the multi-dimensional nature of the urbanism, and through an examination on the above mentioned definitions, I show the five specific dimensions of urban characteristics: the demographic, physical, economic, social, and cultural dimensions, and argue that they combined constitute the complete connotative meaning of the urban concept. Next, I note that a country's preference over specific urban definition methods is related to its overall urbanization and socio-economic condition, and so is the overall complexity of a country's urban definition. I support these arguments with two quantitative models, which, in testifying the relationships, give rise to a Kuznets Curve for urban definition complexity, in which the middle-income developing countries tend to have the most complex urban definitions. The measurement (definition method) of urbanization in such a relationship, I further argue, is in essence a proxy of the substance of the urbanization process. I therefore propose the Hypothesis of the Unbalanced Urbanization Process, which states that as a country urbanizes, progress in different dimensions of urbanism may not advance in parallel; rather, they first diverge in the beginning stage, and finally converge in the finishing stage of urbanization. As a result, a country's urbanization levels as measured by different criteria (corresponding to the five dimensions of urban characteristics) will also first diverge, and

then converge, and the tipping point is roughly the threshold for high-income economies, thus explaining the observed highest level of multi-dimensional complexity of urbanization conditions in middle-income countries. To test the hypothesis, I propose a six-dimensional measurement system for urbanization condition, which is consistent over time and comparable across countries, and implement the new system in five countries: the United States, Mexico, China, India, and Ethiopia as a case study to demonstrate their comprehensive urbanization conditions. Results show that the urbanization progress in different dimensions of urban characteristics does show a first-diverge, and then-converge pattern with the countries' development. Results also show that different countries may have different patterns in the paces of development in different dimensions of the urbanism, which implies the existence of different paths of urbanization in which the countries prioritize the development of different dimensions of the urbanism in different ways. Finally, with these findings I call for a paradigm shift in the study of the urbanization process, and also show the practical significance of the new system in diagnosing a country's urbanization-related problems. The first essay serves as the general framing of the dissertation.

Next, in the second essay, I take China for an example, and examine the behavioral roots of the country's unbalanced urbanism, which, according to Essay 1, is typical among the developing countries, and has a behavioral root concerning the urban residents' lifestyle at the microscopic level. Through a review of studies of the topic and the relevant theories, I show that the key to understand the country's unbalanced urbanism is the behavior of the so-called floating population – the active internal migrants who have a permanent registered residency in rural places but would migrate to cities for a job. I also show that though there have been plenty of statistical data and studies on the group's overall demographic very limited information are yet available on these people's living and migration behavior patterns at the individual level. Therefore, I conduct a thorough research on such behavioral patterns in this essay. Based on a 2014-2015 first-hand dataset on the migrants' living conditions from a large-sample field survey (n=2097), I reconstruct the life history of the floating population through survival analyses of their living and migrating behaviors, and consequently propose a migration behavior model that couples with the life-cycle rhythm of the floating population. A typical rural resident in China would join the urban-ward migrating force for a job in the city at a certain point early in his/her life, and throughout his/her life path the migrant would encounter a series of major events, including education, marriage, childbirth, retirement, etc. Each event would create a bifurcating life path either toward a

permanent urban settlement or toward a continued temporary urban residency, and the migrant's endogenous endowments, including his/her own human capital possession as well as the living conditions of other members in the household, would work together with the exogenous factors and determine the direction of the migrant's life path at the bifurcating point. Thus, each point would filter out a portion of the migrants toward a permanent urban settlement, and finally, in each generation of the migrant workers, only a small portion would manage to establish a permanent urban residency, while those who are "dropped out" would opt to retreat to the home village, where their children are about to join a new tide of urban-ward migrants with hopes of passing through the filters and become a permanent urban resident. Overall, this is an iteration-filtration process, which features an overlapping generational, iterative pattern of internal migrants' migration behavior, which I call "the Circle of Life". Lastly, I show how such a behavioral pattern has given rise to China's unbalanced urbanism.

Finally, in the last essay, I examine the role of public policies in shaping a country's migration pattern and urbanization path. The "Circle of Life" behavioral pattern, as Essay 2 shows, features a circular movement between a rural origin and an urban destination that couples with the migrants' life-cycle rhythms. The pattern is notably unique as compared to those in most other countries. Based on different views on the role the institutional factors have played, two opposite theories have been developed to explain the uniqueness of China's internal rural-urban migration. One explains the migrants' seeming reluctance to a permanent urban settlement as the direct result of many institutional constraints, especially the Hukou (household registration) system. I thus call it the Institutional Suppression Explanation. The other, on the contrary, states that despite the institutional factors, the observed low level of the migrants' permanent urban settlement mainly reflects the migrants' free choice, thus I call it the Free Choice Explanation. I examine the two explanations in the essay, and show that both are flawed, especially in that they are built largely on outdated and incomplete information concerning China's institutional environment. I conduct a thorough documentation on the evolution, and especially the recent development of China's Hukou system and the related land ownership policy, and show that the dual social structure that the Hukou system creates has shifted from one between urban and rural places to one between only a few first-tier cities and everywhere else, such that except for the first-tier cities, the Hukou system no longer constitutes a major suppression on the migrants' urban settlement. I also show that at the same time, the land ownership policy plays in favor of the

rural residents' interests, and has been playing an empowering role. Overall, I propose that China's current institutions function like a "social security" mechanism for the rural residents, thus giving rise to their institution-bound rational choice behavior concerning migration and settlement. I support the argument with two empirical models, using first-hand data drawn from two nation-wide, large-sample surveys on the migrants and rural households' living conditions in 2008-2009 (n=2398) and 2014-2015 (same survey as cited in the previous essay). The first model is a discrete choice model on the determinants of the migrants' urban settlement intentions, which shows the dominant role of the endogenous factors in determining such intentions, as well as a self-sorting mechanism in the formation of such intentions that testifies the remnant restrictive function of the Hukou system. The second group of discrete choice models is on the rural residents' willingness to trade their farmland tenure for urban Hukou-equivalent benefits, which shows a clear whole-household-oriented decision-making mechanism in the rural households' choice of Hukou status, as well as the social security-equivalent function of the rural farmland tenure rights. Furthermore, I suggest that China's combination of Hukou and land ownership institutions constitutes an alternative model for regulating internal rural-urban migration, which, in its pursuit of a just outcome through an unbalanced development strategy, challenges the traditional model that stresses the procedural justice. Though having moral concerns in terms of the equality, the new model may be practically desirable and overall morally just in a substantive sense in a specific stage of a country's industrialization and urbanization. I also show that the new model has been more or less adopted by other East Asian economies, thus adding a new component to the East Asian development success story. Lastly, I briefly discuss the long-run sustainability of the new model, and suggest an incremental approach for future reforms that can maintain the empowering function of the current institution while getting rid of the distortions it has created, thus ensuring an ordered urbanization and development.

Essay 1

Rethinking Urbanization: Multi-Dimensional Characteristics, Unbalanced Process, and Divergent Paths

1. Introduction: Ambiguity in the Urban Concept

"Urban" appears an intuitive concept, but its exact meaning is not without ambiguity. Indeed, observers from different angles may define it in quite different ways: architects and planners by physical characteristics (Larsson 1984; Knox 1987), geographers by the demographic features (Northam 1979; McCarthy and Knox 2005), economists by the economic structure (Isard and Schooler 1959), sociologists by the way of life (Wirth 1938). In fact, in a summary of different definitions of "urban" from 18 authors (Dewey 1960), as many as 40 key words were referred to, in which only a few showed up in more than one definitions, demonstrating the lack of consensus on the urban concept.

Such conceptual ambiguity has resulted in a somewhat chaotic condition in terms of urbanization statistics across the world. Take the classic statistic indicator, the demographic urbanization level as an example, which is available in the annually published *World Urbanization Prospect* (referred to as WUP hereinafter; I cite the 2011 revision in this essay unless indicated otherwise)by the United Nations, the only comprehensive and authoritative source of global urbanization data (United Nations 2012; Champion and Hugo 2005) (Figure 1). The data, however, has dangerous pitfalls.

Figure 1 Urbanization in the World (2010) Source: UN 2011

First, one may easily notice that countries with similar urbanization levels according to the WUP data may display quite different conditions of urbanism, as is manifest in the case of

North American vs. South American countries. This is because different countries have based their urbanization statistics on very different definitions of "urban". Currently, at least four categories of urban-defining approaches are used in the 231 countries and regions covered in WUP: the administrative (118 instances), demographic (107 instances), economic (33 instances), and functional (43 instances) approaches (United Nations 2012); not to mention the endless sub-categories one can easily find within each category. Further, even if some countries use the same urban-defining method, they may adopt different scale criteria for technically identifying an urban area. For example, the United States designates a population threshold for urbanized areas of 2500 residents; while the United Kingdom, 10000; Japan, 50000; and Norway, 200 (United Nations 2012). To make things worse, a country may include more than one method in its urban definition. All in all, virtually no two countries have exactly the same urban definition. It is thus quite understandable that countries with similar urbanization statistics have very different status of urbanism, as these statistics may not be compatible in the first place, a great pitfall for comparative studies (*Table 1*).

Table 1 Urban Definition Methods in Selected Countries

Country	**Urbanization Level (2010)**	**Administrative**	**Demographic**		**Physical**	**Economic**	**Social**
			Population	Population Density			
Brazil	84%	1					
United States	81%		1	1			
Mexico	78%		1				
Cuba	77%		1		1		1
Russia	74%	1	1			1	
China	49%	1	1	1	1	1	
India	31%	1	1	1		1	

Afghanistan	25%	1	
Ethiopia	17%		1

Second, the urban definition methods do not only differ from country to country, but also within the same country from one historical period to another. As a result, urbanization statistics may not be only internationally incomparable, but also temporally inconsistent for a specific country. Perhaps the data in no other country could better illustrate this problem than China. As shown in *Figure 2*, the bold red line denotes the country's historical urbanization levels as currently officially recognized, a widely cited source of China's urbanization figures. However, the data series have actually been backward revised, and the "real" historical data as provided in the coeval official statistic sources show a quite different picture. They periodically deviate from the current official series, sometimes in a very dramatic manner. This is because China had adopted new urban definitions in almost every census. These new definitions, however, would gradually become obsolete, until they were replaced by yet new definitions in the next census. In fact, the problem happens not only in China, and note that all the seemingly ridiculous historical urbanization figures were once considered official before they got revised, they bring about not only consistency, but also credibility issues: the bold red line is also likely to be revised sometime in the future, potentially dramatically. Why should one, then, put too much confidence on such unreliable urbanization statistics?

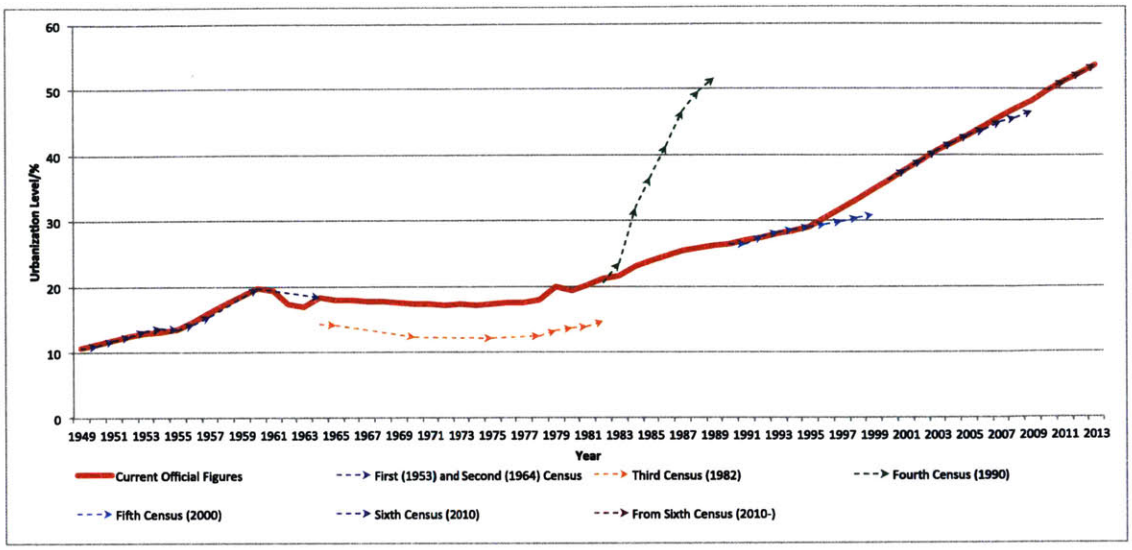


Figure 2 China's Official Urbanization Statistics (1949-2013)[1]

Revealed in these pitfalls is the double predicaments of the urban concept in both technical and conceptual terms. Technically, the problem is how to reach an urban-identifying criterion that is temporally consistent and internationally comparable. For example, how large a settlement needs to be in population terms to qualify as an urban area? Needless to say, finding such a criterion is very difficult, if not entirely impossible, as there does not exist a clear spatial scope associated with the urban concept (Bloom et al. 2010). Recognizing the difficulties, most researchers appear to seek compromises, as the UN does in WUP. It states: "given the variety of situations in the countries of the world, it is not possible or desirable to adopt uniform criteria to distinguish urban areas from rural areas". Therefore, the UN directly adopts the urban definitions used by the countries' own governments, arguing that since it has offered general guidelines for urbanization statistics in the first place, the countries' own statistical bureaus are then in the best place to understand their own situations so as to adopt the most appropriate urban definition methods accordingly (United Nations 2012). To be fair, though having circumvented the urban definition problem and thus of little help in clarifying the ambiguity discussed above, such a compromise is an effective technical solution. Some researchers explicitly support the strategy, (for example, Chang and Brada 2006), and others acquiesce to it. Yet others, however, not satisfied with the strategy,

[1] Cited from my working paper *China's Urbanization Myths*.

try to solve the problem by expanding the urban concept and introduce a series of settlement concepts from small villages to city proper and to urban agglomerations, so as to form a rural-urban continuum (Champion and Hugo 2005). The strategy effectively addresses the spatial scale problem concerning the urban concept, nevertheless, it hardly touches the rich implications of it, which brings one to the conceptual aspect of the problem.

Conceptually, the problem is concerning the complete connotative meaning of the urban concept. As many observers have pointed out (Dewey 1960; McCarthy and Knox 2005; Champion and Hugo 2005), urbanization is a historical process that has changed the world in every possible way, with transitions in the demographic, physical, economic, social, and cultural dimensions of the humanity taking place simultaneously along its course. This means that there exist many possible approaches by which people may define "urban", and they have indeed been used by the countries in the real world as the examples discussed above show. However, different countries have included different dimensions of urban characteristics in their urban definitions. Why, then, does a country choose this rather than that urban characteristic in its urban definition? Further, which dimensions of urban characteristics should be included in the urban definition, such that all the possible meanings and implications of the urban concept are well represented? Answering this question would require a systematic examination of the possible implications of the urban concept, and given the vast richness of the urban concept, progress in this direction to my knowledge is still very limited.

The inquiry into the complete connotation of the urban concept has not only academic significance, but also practical impacts, as the ambiguous urban concept has already caused chaos in the real world. For example, China was commonly regarded as severely under-urbanized at the turn of the millennium (Oi 1993; Chan 1994; Chang 2004; Zhang 2004; Chang and Brada 2006), and researchers had suggested the country accelerate its urbanization process, and they had suggested so in demographic terms, only implicitly. However, the suggestion appeared in many occasions misunderstood, deliberately or not, as encouraging the physical expansion of cities, which resulted in excessive land developments across the country in the 2000s, and the situation soon became so deteriorated that by the end of the period researchers began to discuss the danger of over-urbanization in the country (Lu 2007), which is apparently in physical terms this time. If the exact meaning of "urbanization" had been clarified in the first place, the error would not have happened. Further, generally speaking, a clarified urban concept would help countries recognize their

urbanization conditions. Given the revealed relationship between a country's urbanization and economic development (Bloom, Canning, and Fink 2008), such recognition would help countries make more suitable socio-economic development policies.

Therefore, a rigorous inquiry into the urban concept regarding its measurement and connotative meanings needs to be done. Through analysis of texts and empirical evidence, I answer the following questions: What is the complete connotative meaning of the urban concept? How should one technically define the urban concept, such that all relevant dimensions of urban characteristics can be included? Such a comprehensive urban definition can then serve as the basis for comparative urbanization studies. Moreover, noting the fact that different countries seem to have different preferences over urban definition methods, one may further ask what information is implied by such preferences? To be specific, does a country's preference over urban definition methods hint at its condition of urbanism, or more broadly, its overall socio-economic condition? And if it does so, what is the relationship between such preferences and the country's urbanism and overall socio-economic condition? What theoretical and practical implications do such relationships have?

To answer the questions, first, through typological analysis of the real-world urban definitions in WUP, I explore the extent of the urban concept and its evolution, yielding a multi-dimensional and evolutional understanding of the urban concept. Next, I examine the relationship between a country's preference over urban definition methods and its socio-economic condition, thus proposing the Kuznets Curve for urban definition complexity, and the hypothesis of the unbalanced urbanization process. Based on the multi-dimensional urban concept, I then move on to establish a new measurement system for urbanization progress, and apply it in some case countries to testify the hypothesis of the unbalanced urbanization process. Lastly, I conclude the essay with discussions on how these results would facilitate a paradigm shift from the rural-urban dichotomy to the rural-urban continuum of the urbanization process, and also discuss the potential practical implications of the paradigm shift.

2. The Typology of Urban Definitions: Evidence from the WUP Data

Conceptually, there should exist some innate properties that differentiate urban from rural settlements. WUP refers to these properties as "the characteristics typical of urban areas", but it does not give any explicit explanation of them. What are these characteristics, then? In this section, I conduct a typological study into the urban definitions in WUP, so as to reveal the hidden typical urban characteristics, which serves as the basis for further analyses.

WUP includes urban definitions for most of the 231 countries and regions it covers. As mentioned earlier, the definitions are mainly those used by the statistics bureaus of the countries and regions, I thus regard them as the recognition of typical urban characteristics in their respective natural and socio-economic contexts. As stated in the *Introduction*, by the urban-identifying method they use, these definitions can be roughly classified into four categories: the administrative (118 instances), demographic (107 instances), economic (33 instances), and functional definitions (43 instances) (United Nations 2012). In fact, the last category can be further divided into three sub-categories, including the physical (e.g., infrastructure conditions; about 30 instances), social (e.g., public service conditions; about 10 instances), and cultural (e.g., the "sense of community" standard; less than 10 instances) definitions. Therefore, aside from the administrative definition, which is largely tautological ("The places designated as urban areas are defined as urban areas"), the other five urban definition methods reflect five dimensions of urbanity: the demographic, economic, physical, social, and cultural characteristics.

Further, an interesting phenomenon concerning these urban definitions is that a country's choice of urban definition methods seems to be dependent on the spatial-temporal context it resides in. That is to say, one can easily find some relationship between a country's adoption of a certain urban definition method and its natural and socio-economic For example, the administrative approach is usually used in developing countries rather than developed countries, so is the physical approach; demographic definitions seem more popular in developed countries; countries with a planned-economy experience tend to adopt economic definitions, etc. (Figure 3）.

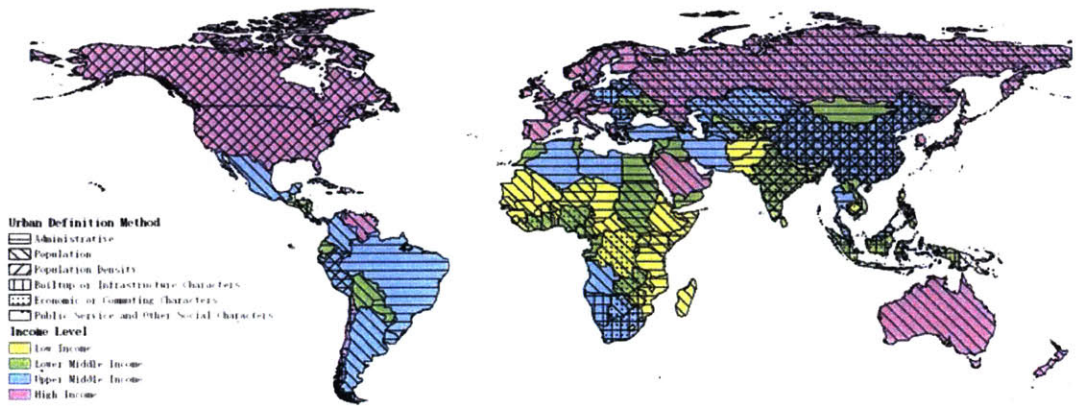


Figure 3 Urban Definition Methods and Income Levels of Countries across the World (2010)
Source: UN 2011; World Bank 2011

Beyond the 2010 cross-section that the WUP data display, one can also find changes in a country's urban definition that seem to be related to the country's socio-economical changes. Some country adopted simpler definitions, such as France, which introduced a new, mainly demographic-based urban definition in 1996 to replace the old one called ZPIU which contains criteria of commuting, employment, demographic characters, etc. (Geyer 2002). Other countries adopted more complex definitions, such as Tanzania. In 1967, the country replaced its rather simple, administrative urban definition with a compound one having administrative, demographic, and economic criteria (United Nations 2012). In the former example, France was in the final stage of urbanization; while in the latter example, Tanzania was at the threshold of an accelerated urbanization process. These facts, therefore, make one wonder about the relationship between a country's socio-economic condition and the urban definition methods it adopts.

Further analysis on this issue would require detailed historical evidence, much of which is not readily available. However, borrowing from the geographical concept of space-time equivalence (Hägerstrand 1970), a rich enough cross-section, such as the WUP data, may perform just like time series data for the purpose of this study. Indeed, countries in WUP have rather different urbanization conditions, with the urbanization levels for some countries as low as 15% and other as high as 100%, a range that if mapped into the urbanization history may cover centuries of urban evolution. Therefore, I base my analysis on the WUP data, and explore the relationship between a country's socio-economic condition and the urban

definition methods it adopts.

3. Urban Definition Methods, Urban Characteristics, and Socio-economic Conditions: Empirical Analyses and Theoretical Implications

As stated earlier, the urban definitions in WUP imply five dimensions of urban characteristics, each with specific criteria for identifying urban areas, except for the cultural dimension which is only vaguely mentioned and for which no practical criteria are Counting for the administrative method and the two kinds of criteria (population, and the density of population) under the demographic category, there are a total of six urban-defining criteria in WUP (Table 2).

Table 2 Dimensions of Urban Characteristics and Urban-Defining Criteria in WUP 2011

Dimension of Urban Characteristics	Urban-Defining Criteria
(N/A)	Administrative designation
Demographic	Population size
	Population density
Physical	Provision of a certain infrastructures
Economic	Non-agricultural employment
Social	Provision of a certain public services
Cultural	(N/A)

In this section, I build quantitative models to explore the relationship between these urban-defining criteria and the socio-economic backgrounds they reside in. First, I construct a series of dummy variable based on whether a country adopts a certain urban-defining criteria in Table 2 except for the administrative criterion (because it does not represent any urban characteristics), and build a group of discrete choice models to study whether a country's adoption (or not) of a certain urban-defining criteria is dependent on its socio-economic condition. Further, noting that many country's urban definitions usually contain multiple criteria for identifying urban areas, the complexity of urban definitions as measured

by dimensions of urban characteristics they cover seems also related with the country's socio-economic condition. I thus build another linear OLS model to explore such a relationship.

3.1. Socio-economic Conditions and Urban Characteristics as Reflected in Urban Definitions

I build a model for each urban-defining criteria except for the administrative one, thus five models in total. As stated above, the dependent variable in each model is a 0/1 dummy variable reflecting whether a specific urban-defining criteria is adopted by a country. As for the independent variables, I use the per capita GDP (Purchasing Power Parity, PPPpc) as a proxy for a country's comprehensive socio-economic condition, and the land area (Land_area) and population (Population) as proxies for a country's natural and human geographical backgrounds, respectively. To maintain consistency with the WUP, I use data for the year of 2010 for all variables (in the rare occasion of missing or unavailable data for that year, I use data for the nearest year instead).

Not every country in WUP's 231-country database constitutes an ideal sample for the models. First, 6 countries do not provide any urban definitions, and are thus to be removed from the sample. Second, urban definitions methods for city-states and small island states are generally too simple and not worthy of studying, these samples thus should also be excluded. Thirdly, for similar reasons, the countries that have too low a population should also be excluded. Here, I exclude the countries with a population of 2 million or less, a criterion also adopted in WUP's many analyses. There are in total 87 samples in the above two categories. Lastly, 3 countries, namely Argentine, Syria, and Somalia do not have per capita GDP (PPP) data for any year, and are thus also excluded. In summary, I have a sample of 135 countries and regions with a total population of 6.71 billion, covering 97% of world population in 2010 – an acceptable coverage for this study's purpose.

I build a series of binary Logit models following the above specifications. Except for the model with population as the socio-economic independent variable, all models yield statistically significant results for the socio-economic independent variable, with population, per capita PPP, and the square of per capita PPP entering different models but the land area variable not entering any of the models. I present the regression results in *Table 3*, and briefly discuss them in the following sections.

3.1.1. The Population Criterion

No statistically significant model has been built for this criterion using the WUP data. Considering that population concentration is a necessary condition for urbanization, this dimension of urban characteristics seems to be independent of any socio-economic and geographic backgrounds, thus the null result.

3.1.2. The Population Density Criterion

Two independent variables, per capita PPP (PPPpc) and population (Population) have entered the model (at a 0.1 significance level, and the same hereinafter). The latter is easy to explain: more populous countries tend to have larger human settlements, and thus the density criterion constitutes an effective supplement to the criteria solely based on the size of the population. The former indicates that the density criterion tends to be adopted more frequently in countries with higher income levels. I will discuss the meaning of this result later.

3.1.3. The Infrastructure Criterion

Both the independent variable per capita PPP (PPPpc) and its squared term (PPPpc_sqr) have entered the model. This means that as the socio-economic development of a country progresses, it would tend to adopt the infrastructure criterion in its urban definition at the beginning, and then after a certain tipping point ($12397.8 per capita PPP), behave the other way round. I will discuss the implications of this interesting quadratic relationship later.

3.1.4. The Employment Criterion

Similar to the previous model for the infrastructure variable, the model with the employment criterion as the socio-economic independent variable also displays a quadratic relationship between the independent and the dependent variables, with a tipping point of $15535.7 per capita PPP. I also leave the relevant discussions for later.

3.1.5. The Public Service Criterion

Again, the model with the public service criterion as the socio-economic independent variable displays a quadratic relationship between the independent and the dependent variables, with a tipping point of $15433.3 per capita PPP. I also leave the relevant discussions for later.

Table 3 Regression Results Summary

	Model 1			**Model 2**			**Model 3**			**Model 4**			**Model 5**		
Dependent variable	Population dummy			Population density dummy			Infrastructure dummy			Employment dummy			Public service dummy		
	Beta	SE	Sig.	Beta	SE	Sig.	Beta	SE	Sig.	Beta	SE	Sig.	Beta	SE	Sig.
PPPpc	-	-	-	5.42E-5	2.0E-5	.007	1.82E-4	1.03E-4	.078	9.57E-5	5.95E-5	.107	4.63E-4	2.33E-4	.047
PPPpc²	-	-	-	-	-	-	-7.34E-9	3.98E-9	.065	-3.08E-9	1.59E-9	.053	-1.5E-8	8.68E-9	.083
Population	-	-	-	1.29E-5	5.63E-6	.022	-	-	-	-	-	-	-	-	-
Land_area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Constant	-	-	-	-4.197	.745	.000	-2.192	.549	.000	-1.305	.396	.001	-5.229	1.479	.000
-2 Log likelihood	N.A.			57.464			103.078			146.847			46.541		
Pseudo-R^2 (Nagelkerke)	N.A.			0.354			0.128			0.081			0.183		

Table 4 Regression Results for the Urban Definition Complexity Model

Variable	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.919	.172		11.188	.000
PPPpc	4.759E-5	.000	.691	2.079	.040
PPPpc_sqr	-1.521E-9	.000	-.977	-2.939	.004
Population	1.818E-6	.000	.348	3.839	.000

Dependent Variable: Count_def_methods; Adjusted R^2=0.236

3.2. The Kuznets Curve for Urban Definition Complexity and the Hypothesis of the Unbalanced Urbanization Process

Next, I move on to explore the relationship between the overall complexity of a country's urban definition (as measured by different urban-defining criteria it contains) and its socio-economic condition. The preliminary analysis in section 2 appear to imply that middle-income countries tend to have more complex urban definitions compared to both higher- and lower-income countries. This observation is indirectly supported by the modeling results in section 3.1, as the quadratic relationship between the dependent variable and many independent variables implies a higher likeliness for middle-income countries to adopt each of the different urban-defining criteria. In this section, I build a model to directly testify this relationship.

I first construct the dependent variable that directly shows the overall complexity of a country's urban definition. A simple but effective way to do so is by just summing the different urban-defining criteria (as shown in Table 2, except for the administrative criterion) a country's urban definition contains. The independent variables for this model is the same as those in the previous model group. Also, I exclude from the sample the countries which adopt only the administrative criterion in their urban definitions as they constitute irrelevant samples given the purpose of the modeling. Thus I end up with a sample of 96 countries and regions with a total population of 5.46 billion, covering 80% of the world population in 2010. Under these specifications, I fit the model with the linear OLS method[2]. The results of the modeling is shown in

Table *4*.

The results show that the complexity of a country's urban definition is highly correlated with the country's population, and it also has a quadratic relationship with the country's level of socio-economic development. The former relationship is instinctive. As WUP pointed out, some populous countries may have human settlements that are very large but may lack the basic urban characteristics. Thus, these countries may require additional criteria for identifying urban areas, leading to a complex urban definition. The latter relationship, with a tipping point of $15550 per capita PPP (or roughly the World Bank's standard for high-income economies), coincides with the

[2] A note on the model fitting method: by the way it is constructed, the dependent variable can be either viewed as a scale variable, or an ordinal one. In the former case, a linear OLS fitting is enough; whereas in the latter case, an ordinal logit model appears a better choice. I have tried both, and found that the linear OLS model would better illustrate the quadratic relationship between the dependent and independent variables.

results from the previous analyses (*Figure 4*-a). Put concretely, this means the overall complexity of a country's urban DEFINITION, as measured by different urban characteristics reflected in that definition, will first go up at the initial stage of the country's socio-economic development, and then go down as the country steps over the threshold for high-income economies. In other words, this pattern forms a Kuznets Curve (*Figure 4*-b), only for the urban definition complexity (rather than the income distribution as the original Kuznets Curve covers). Is such pattern merely a coincidence?

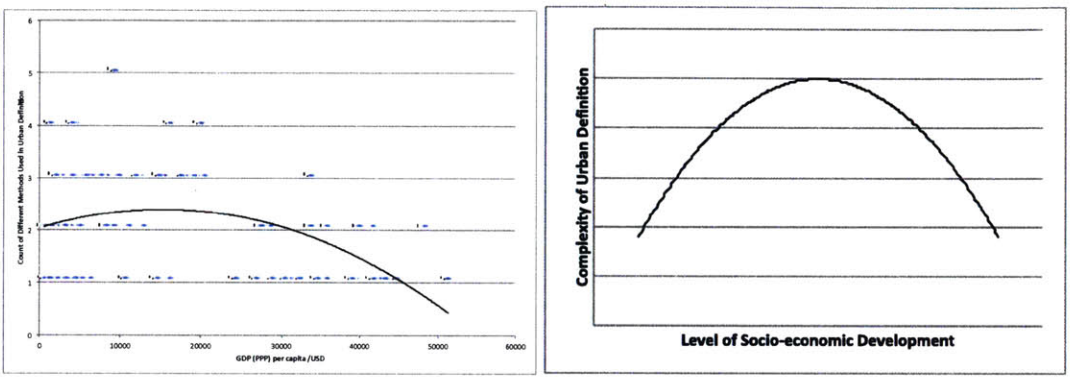


Figure 4 a (left): Urban Definition Complexity and Income Levels of Countries across the World (2010); b (right): The Kuznets Curve for Urban Definition Complexity

I argue that this is not merely a coincidence, and that the complexity of the measurement of urbanization actually reflects the complexity of the substance of the urbanization process. Specifically, this is to say that a middle-income country tends to include more urban-defining characteristics than its lower- and higher-income counterparts in its urban definition, because its urbanization condition in different aspects of urban development (and thus also as measured by different urban-defining criteria) may be considerably different. For example, a country may have settlements with a large population concentration, but these settlements may lack necessary functional urban qualities; or, a country may achieve great progresses in the physical aspect of urban development, but lags behind in non-physical aspects such as social and cultural urbanization. Such phenomena would render all single-dimensional criteria of urbanization biased to some extent, and a comprehensive reflection of the country's urbanization condition can only be yielded through a composited measurement containing multi-dimensional urban-identifying criteria, which give rise to a complex urbanization definition. According to the previous modeling results, middle-income countries are indeed more likely to adopt alternative urban-defining criteria (as opposed to the

"classic" demographic criterion) than lower- and higher- income countries, a fact that in some sense supports the this argument.

Moreover, by the principle of space-time equivalence I cited earlier, I further argue that the argument not only applies to a cross-section of the urbanization conditions across the world, but also reflects a fundamental rule concerning the urbanization **process** in the temporal dimension. It appears that as a country urbanizes, progress in different dimensions of urban characteristics may not advance in parallel, but ideally they will finally converge to a high level. As a result, a country's urbanization levels as measured by different criteria (corresponding to the different dimensions of urban characteristics) will first diverge, and then converge after the country reaches a certain level of development. Indeed, on the one hand, studies have shown that in highly developed countries where the urbanization process is generally complete, the urbanization condition as measured from any of the above mentioned aspects of humanity makes little difference (Champion and Hugo 2005), indicating a balanced status of progress among the different urban characteristic aspects. On the other hand, however, the modeling results in this essay show an opposite picture for countries in the middle stage of socio-economic development, and they also imply that the tipping point is roughly the threshold for high-income economies, thus the observed highest level of multi-dimensional complexity of urbanization conditions in middle-income countries. In terms of multi-dimensional complexity, such a first-diverge, then-converge urbanization process naturally gives rise to the Kuznets Curve in *Figure 4*b.

I call this argument **the Hypothesis of the Unbalanced Urbanization Process**. To some extent, the result of the second model in this section supports the hypothesis. However, it should be noted that the independent variable used in the model, the overall complexity of a country's urban definition, is still a proxy of the country's urbanization unbalancedness after all. To directly test the hypothesis, one needs a direct measurement of the multi-dimensional urbanization condition, as well as intensive empirical analyses based on it. I make a preliminary endeavor in the next section.

4. The Unbalanced Urbanization Process: A New Measurement System for Urbanization and Its Application

4.1. A New Multi-Dimensional Measurement System for Urbanization Conditions

In order to directly test the hypothesis of the unbalanced urbanization process, one needs an

explicit measurement for the multi-dimensional urbanization condition of a country. However, conventional measurements of urbanization are either based on only one specific criterion, such as the demographic or economic criteria, and thus convey single-dimensional information by nature, or involve multiple criteria but give an aggregated figure as the final result and thus lose any multi-dimensional information. These one-figure (i.e., the "urbanization level") measurements, therefore, are too simplified to reflect the multi-dimensional nature of urbanization. Alternatively, I can construct a new measurement for the urbanization condition which takes the form of a multi-indicator system and is thus disaggregated by nature. Compared to the conventional, single-dimensional, usually demographic criterion-based measurements, this new multi-dimensional system can picture a country's urbanization condition in a much more comprehensive manner, so as to reveal a country's urbanization unbalancedness and help test the hypothesis of the unbalanced urbanization process.

Technically, in constructing the new measurement system, I first include urban-identifying criteria reflecting the five urban characteristic dimensions as derived from the WUP evidence: the demographic, economic, physical, social, and cultural dimensions. I also include the official level of urbanization of a country as a frame of reference in the system, which, as WUP points out, regardless of the specific urban-identifying criteria it is based on, is still the best measurement for observers with no extra contextual knowledge. I therefore come up with a six-dimensional measurement system, with the measurement in each dimension reflecting the urbanization condition from its specific angle, and all the measurements from different dimensions combined presenting a comprehensive picture of a country's urbanization condition.

Under each of the five urban characteristic dimensions, one needs specific urban-identifying indicators to quantify the urbanization level. The selection of the indicators is worth special noting here. For general guidelines, they must satisfy the following criteria: (1) They must have standardized values, such as in the form of coverage rates, so that easy comparison between countries can be made. (2) they must have credible and easily accessible data sources with a good geographical and temporal coverage, such as the World Bank's development indicators database (The World Bank 2015). And finally, (3) they must have effective differentiating power in various contexts. The last criteria would then require a careful trade-off between the relevance and the stability of the indicator, because a very relevant indicator in one specific context may prove irrelevant in another, and vice versa. For an extreme example, "having a city wall" may well constitute a perfect indicator for the physical urban characteristic in the medieval times, but certainly not in modern times. Thus, regarding this issue, I face a situation that is somewhat analogous to the

selection of the basket of good for constructing the Consumer Price Index (CPI): one wants indicators that are stable enough across spatial-temporal contexts, and are meanwhile as relevant as possible. Such a selection, therefore, could be very subtle. I discuss the selection of specific indicators for each of the dimensions, as well as the particular criteria for each indicator for distinguishing urban and rural settlements in the rest of this section, and try to make the best choices one can. However, to be frank, I do not expect that my choices of indicators are unimpeachable. Rather, I would like to stress once again that my work presented here is still very preliminary and data coarse-grained, and that I hope the academic community engage in further efforts on this topic with refined indicator choices based on detailed empirical analysis.

4.1.1. The Demographic Dimension of Urbanization: The Population Concentration Criterion

The concentration of population alone may not sufficiently qualify an urban settlement, but it surely constitutes a necessary condition. In some sense, the degree of population concentration reflects a country's potential for urbanization, which *per se* has important policy implications.

Technically, different countries have adopted various indicators (such as population size or population density) with different criteria (thresholds for qualifying urban settlements) to identify urban areas from the demographic dimension. For establishing an internationally applicable and comparable measurement system, the question is, should one adopt a unified indicator and criterion for identifying urban settlements? Following similar principles with WUP, I argue that this is unnecessary: if one recognize that urbanisms in different historical and geographical contexts may have different appearances, it is then reasonable to accept a country's specific indicator and criteria which are very likely to be based on these contexts, even for the international comparison purpose because no better options exist. Also, given that there are 107 countries where the official urbanization level is based on a demographically defined urban concept, directly using these figures would greatly reduce the amount of estimation work for generating a global panel data, as well as minimizing the possible errors introduced in estimations.

Despite this strategy, finding the demographic urbanization level for countries that do not have a solely demographic-based urban definition such as China and India would still require estimations. The task could be challenging, for relevant data are usually not available, and third-party proxy data or even particular localized knowledge might be necessary to estimate the figures in a case-by-case manner. For example, in the following case study, I manage to invent a specific method to estimate the total population for all settlements having a population of 2000 or more for China as the I am quite familiar with China's context. However, as I lack comparable localized knowledge about India,

my estimation method for India is much less sophisticated and the result likely less accurate. What I would like to stress again is that I am fully aware of the limitations of my work when it comes to estimations, and I hope other members in the academic community develop better estimation methods for more effective empirical tests.

4.1.2. The Economic Dimension of Urbanization: The Employment Structure Criterion

An economic and employment structure that is completely different from that of rural places is among the most prominent features of the urbanism (Henderson 2003). Because of the economy of scale, industrialization promotes population concentration, and it in turn increases the momentum of industrialization through urbanization and localization effects, thus inducing population concentration in a greater scale. Such cumulative causations constitute a major driving force for urbanization (Isard 1998), and the skew of the employment structure toward non-agricultural sectors is thus regarded as one of the essential characteristics of the urbanism. Naturally, one can use the non-agricultural employment ratio as an ideal proxy for measuring the economic urbanization condition of a country, the source data of which is available from the World Bank's development indicators database (The World Bank 2015).

4.1.3. The Physical Dimension of Urbanization: The Infrastructure Criterion

Maybe the most impressive feature that differentiates urban from rural settlements is the physical appearance. Among the many aspects of the urban built environment, the condition of key infrastructures, such as road accessibility, water and electricity supply, and telecommunication facilities is regarded to have the most effective differentiating power when it comes to urban-rural differences, especially in developing countries (Komives, Whittington, and Wu 2001), I thus use it as a proxy for physical urbanization conditions.

Choosing a specific indicator for urban infrastructure conditions, though, is not as easy. Among the many urban physical items that meet the general definition of infrastructures (Prud'homme 2005), most of them have differentiating power problems to a certain degree. For example, water and electricity supplies have become a necessary living condition for most population across the world, and thus the respective indicators would make little differences among countries, rendering themselves ineffective. After due consideration, I propose using the indicator of the coverage rate of paved roads, available in the World Bank development indicators database, as the proxy for physical urbanization conditions, which generally satisfies the standards above.

4.1.4. The Social Dimension of Urbanization: The Public Service Criterion

Besides the physical infrastructures, another kind of public goods, the public services, also constitute an important dimension of urbanization. Indeed, many countries use public service criteria to identify urban settlements, implying its differentiating power between the rusticity and urbanity in these countries. Moreover, it should be noticed that such differences are not only found between urban and rural settlements, but also in many occasions within the urban area, as there exist institutional restrictions on accessibility to urban public services for certain urban residents. Some of such restrictions are trivial. For example, some US cities require a city residency to issue local street parking permits. Others, however, really make differences. For example, Ethiopia's Social Health Insurance (SHI) system is only accessible to those having a job in the formal urban economic sector, and in China, people only have access to some key public services, such as public healthcare and public education where their *Hukous* (household registration) are located, regardless where they actually live. Considering the high population mobility in some rapid urbanizing societies, such institutional arrangements may render a considerable portion of *de facto* urban residents without local public services. Again for the China example, as many as 220 million people, or 15.78% of the population in 2010 were in such status. Put another way, these people are temporary urban residents who permanently live in cities, and this situation has greatly hampered the country's building of a "complete" urban society. In this sense, the coverage of urban-level public services among the population constitutes the proxy for a country's level of social urbanization.

4.1.5. The Cultural Dimension of Urbanization: The Civil Society Criterion

Urbanization is not all about population concentration, physical building, and economic and social transitions. It is also about cultural changes. However, because of the wide references, sometimes even vagueness of the urban culture concept, finding a specific indicator of its development condition is even more challenging than that for previous urban characteristics. Indeed, despite that some countries vaguely mention the urban cultural element in their urban definitions, no technical indicators are used in any occasions. In this essay, focusing on the cultural differences between rusticity and urbanity from a social psychological perspective, I try to find a proxy for cultural urbanization from a civil society perspective.

The German sociologist Tönnies has properly illustrated the cultural difference between rusticity and urbanity using the dichotomy of *Gemeinschaft/Gesellschaft* (Tönnies and Harris 2001). The former, usually translated as community, refers to a form of acquaintance society that is based on blood and geographical relationships. Communities, usually found in rural areas, are sacred, ruled

by traditional customs, and stable in nature. People in communities live in hierarchical collectives, and collectivism also constitutes the foundation of the community. The latter, usually translated as society, is just to the opposite. It is usually secular, ruled by law, and in constant motions. The blood and geographical relationships give way to individualism and anonymity in societies, and egalitarianism and bureaucracy become the basis for social organizations. Nowadays, this form of society is also called the civil society, a mark of the modern urban culture.

In principle, one can use any indicator that differentiates the civil society from a traditional community as the proxy of the level of cultural urbanization. For example, the indicator of the number of Non-Profit Organizations (NPO) in every 1000 population is used in some occasions as an indicator for the "maturity" level of a civil society (Salamon et al. 1999). For this study's purposes, however, such unstandardized indicators again are not ideal. Alternatively, one can also use composite scores for civil society performances published by authoritative third-party organizations, such as the CIVICUS Civil Society Index (CSI) (Heinrich 2004), The Johns Hopkins Civil Society Studies Report (Salamon et al. 1999), and the Freedom House Freedom in the World Score (FH Score) (Freedom House 2014). In this essay, considering the criteria of coverage, comprehensiveness, and data accessibility, I use the FH Score as the indicator for the civil society maturity and thus the proxy for cultural urbanization conditions. The FH Score is a comprehensive measurement of the civil society condition in a country, with aggregated information ranging from political participation conditions to NGO activeness, and it also has a fairly long-period, panel data for most countries across the world, which is ideal for international comparative studies.

4.1.6. The Comprehensive Measurement of Urbanization Conditions and the Unbalanced Urbanization Index

The above presented five measurements, along with the country's official one, form the six-dimensional measurement system for urbanization conditions (Table 5). Here, I would like to stress that these measurements work as a whole to convey the full information of a country's urbanization progress, from its most necessary meanings to the remotest connotative implications. Therefore, though the single-dimensional measurements can be separately used in some occasions, one must keep in mind that such measurements are only meaningful within the whole multi-dimensional framework, for some of the indicators, such as the non-agricultural employment ratio, do not necessarily have any urbanization implications. Moreover, although my intention to create this system is to present the comprehensive condition of a country's urbanization in the form of a set of figures to convey multi-dimensional information, it can be aggregated to one figure, when necessary,

to present a simplified picture, though such a usage of the measurement system is not encouraged.

It is also worth noting here on how to synthesize the measurements from the six dimensions to yield the comprehensive picture. Generally speaking, it depends on the purpose of such synthesis. On the one hand, if an overall urbanization level is at concern, then in principle, urbanization levels as measured in the economic, physical, social, and cultural dimensions should not exceed that by the demographic criterion as population concentration constitutes the necessary condition for urbanization.

Table 5 The Six-Dimension Measurement System for Urbanization Conditions

Dimension of Urban Characteristics	**Proxy for Urbanization Levels**	**Specific Indicators for Urbanization Levels**
Demographic	Degree of population concentration	Percentage of population living in settlements of a certain scale or larger
Economic	Significance of non-agriculture employment	Percentage of non-agriculture employment
Physical	Conditions of physical infrastructure provision	Percentage of roads paved
Social	Conditions of public service provision	Percentage of population covered by urban-quality healthcare service
Cultural	Maturity of civil society	The FH Score
Administrative	Not a dimension of urban characteristics; Introduced as a frame of reference for other indicators	

On the other hand, if one wants to measure the degree of unbalancedness among the many dimensions of urbanization, original measurements from each dimension could be used for the purpose of preserving more information. For example, one can define the Unbalanced Urbanization Index (UUI) for a country in a "variance" style:

$$UUI = \sum_{i} (U_i - U_o)^2$$

Where i denotes the dimensions of urban characteristics, U_i denotes the urbanization level as measured in the respective dimension, and U_o denotes a certain measurement of the urbanization level as a frame of reference, such as the official figure, which I use in this essay (though other measurements such as the average or median of all measurements are also applicable, and they yield similar results in this study, too).

4.2. Case Studies: Unbalancedness in the Urbanization Process and Variations between Countries

Next, I apply the multi-dimensional measurement system in five countries: The United States, Mexico, China, India, and Ethiopia for a case study, so as to illustrate the new system's analytical capacity and to test the hypothesis of the unbalanced urbanization process. The five countries are all vast in territory and populous, with different income and (official) urbanization levels (Table 6). They therefore form a good cross-section for studying the cross-country differences in urbanization conditions. Particularly, three of the five countries – Mexico, China, and India are all middle-income, large developing economies, but with instinctively very different forms of urbanism, such that they form an ideal set for studying the unbalanced urbanization in developing countries.

Table 6 Population, GDP per capita, and Offical Levels of Urbanization in the Case Countries

	US	Mexico	China	India	Ethiopia
Population	309347057	118617542	1337705000	1230984504	87561814
GDP per Capita (PPP)	48374	14599	9239	4363	1054
Urbanization Level	81%	77.80%	49.2%	30.90%	17%

4.2.1. Notes on Some Special Estimations

As stated earlier, the proxies for economic, physical, and cultural urbanization conditions are drawn from third-party database which covers all case countries. The proxies for the demographic and social urbanization conditions, however, require special estimations in some occasions, which I elaborate here.

First, regarding the demographic dimension, the US, Mexico, and Ethiopia have an official urban definition that is based on demographic criteria, so I directly use these figures (it should be noted that a country's urbanization measurements of different dimensions are not necessarily different from each other). China and India, however, do not have such a shortcut, and thus require special estimations.

In general, the two countries' official urban definitions both include demographic criteria, only that they take effects together with other restrictive criteria. Therefore, the two counties' actual levels of demographic urbanization should be higher than the respective official figures. For China, first, I base my estimation on an urban population threshold of 2000 people, which is the criterion

for identifying an "established town" in China. At least two groups of settlements should have satisfied the pure demographic urbanization standards. The first group is the townships, whose population are not regarded urban residents under current statistical guidelines. However, according to the *China Urban-Rural Construction Statistical Yearbook (2010)*, the average population of the townships is 2357, far exceeding the demographic urban threshold. Thus, I count all township population, 32.36 million, as a rough estimation of demographic urban residents from this source. The second group is the large natural villages. Also from a data source in *China Urban-Rural Construction Statistical Yearbook (2010)*, simple calculations yield that the total population in villages with 2000 or more residents is about 57.50 million[3]. Summing the two groups yields an "extra" urban population of about 90 million, or 6.6% of the entire population of the country, which is added to the official urbanization level to yield the final figure for the demographic urbanization level (55.8%).

The above estimation requires extensive localized knowledge about and obscure data sources on China, which I happen to possess. For India, however, I am not as knowledgeable and cannot make estimations of comparable accuracy. In this essay, considering the fact that the both countries are so populous and densely populated, I directly apply the same ratio of "extra" urban population as in the China case to India and yield a very rough estimation of the latter's demographic urbanization level of 35%. I mark this figure with a special notation whenever cited in the rest of the essay to highlight its roughness.

Second, regarding the social dimension, the US, Mexico, and India do not have institutionalized discriminative policies for differentiating the provision of urban public services among different groups of actual urban residents, so the social urbanization levels in these countries equal to the respective official urbanization levels. China's social urbanization level can also be readily represented by its *Hukou* scale urbanization level. Ethiopia, however, does not have a readily made indicator, and I draw the figure from a proxy regarding the country's Universal Health Care system. As mentioned earlier, the country's Social Health Insurance (SHI) is designed to cover the urban residents with a job in the formal sectors, and the expected coverage rate when the SHI is fully implemented is 11% (Wang and Ramana 2014). I take this figure as the proxy for measuring the country's level of social urbanization. Again, this estimation is very rough, and I also specially mark the figure in the rest of the essay.

Lastly, regarding the cultural dimension, as stated earlier I use the FH Scores as the proxy mainly for its wide geographical and temporal coverage and availability. However, alternative proxies, such

[3] Refer to *China's Urbanization Myth* for detailed estimation methods.

as the three I mentioned earlier, should show generally consistent results. I show these figures in Table 7 (whenever applicable) to illustrate this, and thus show the robustness of my estimations.

Table 7 Four Possible Proxies for Cultural Urbanization and Their Performance in the Case Countries

Country	NGOs per 1000 population	CIVICUS Civil Society Index (Averaged and mapped into a 0-100 scale)	JHU Global Civil Society Index	FH FITW Score
United States	4.8	N/A	61	100
Mexico	N/A	N/A	24	67
China	0.36	18.75	N/A	10
India	2.5	N/A	26	73
Ethiopia	N/A	N/A	N/A	17

4.2.2. Results: The Multi-Dimensional Urbanization Conditions and the Unbalanced Urbanization Indices for the Case Countries

The estimation results are shown in Figure 5, where the star marks denote less accurate or reliable estimations. The result clearly shows that the urbanization conditions as measured in different dimensions are much less deviated from each other in the US (with both a high income and a high urbanization level) and Ethiopia (with both a low income and a low urbanization level) than in the middle-income countries. Particularly, the charts for Mexico and China are even concave-shaped, implying the existence of significant shortcomings in a certain dimension of urbanization development in these countries.

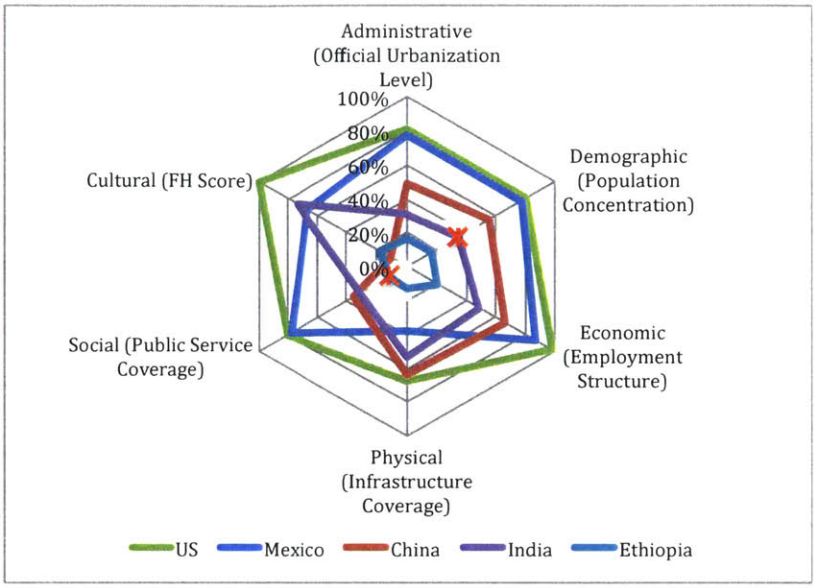
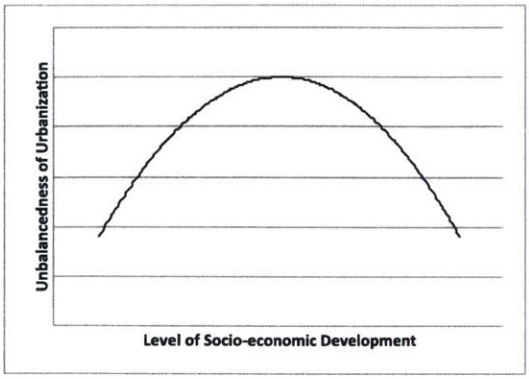


Figure 5 The Urbanization Conditions in Case Countries as Revealed in the Multi-Dimensional System

One can calculate the Unbalanced Urbanization Indices for the case countries accordingly, as shown in Table 8 and Figure 6. It is evident that the middle-income countries have much higher UUIs than the higher- and lower-income countries, thus testifying the hypothesis for the unbalanced urbanization process.

Table 8 The Unbalanced Urbanization Indices (UUI) and per capita GDP (PPP) of the Case Countries

	US	Mexico	China	India	Ethiopia
PPP per capita/USD (2010)	48374	14599	9239	4363	1054
UUI	0.0735	0.1457	0.2479	0.1023	0.0029



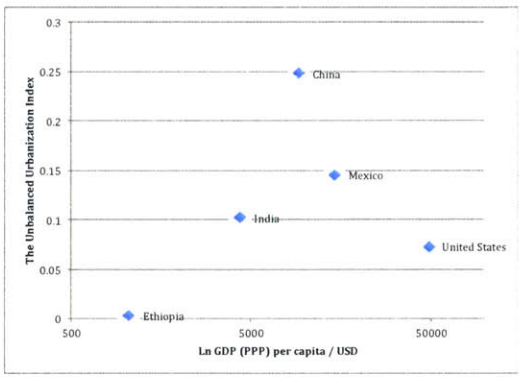


Figure 6 (left) The Conceptual Kuznets Curve for Urbanization Unbalancedness, (right) The Empirical Relationship between the Urbanization Unbalancedness and the Income Level

4.2.3. The Unbalanced Urbanization Process and the Different Paths of Urbanization: Comparison between China and India

The results presented above imply an important feature of the urbanization process, and it is that different countries may have divergent paths of urbanization, as reflected in the different priorities they put on the development of different dimensions of urbanism. Taking China and India as an illustration, as shown in Figure 7, both countries have a rather high UUI, but the way their urbanization process is unbalanced is quite different. China is advanced in the economic and physical dimensions and has shortcomings in the social and cultural dimensions, while India behaves just the opposite. It is therefore very obvious that the two countries have prioritized the development of different dimensions of urbanism in quite different ways, and thus followed two divergent paths of urbanization. I will further discuss the practical and theoretical implications of this finding in the conclusion section.

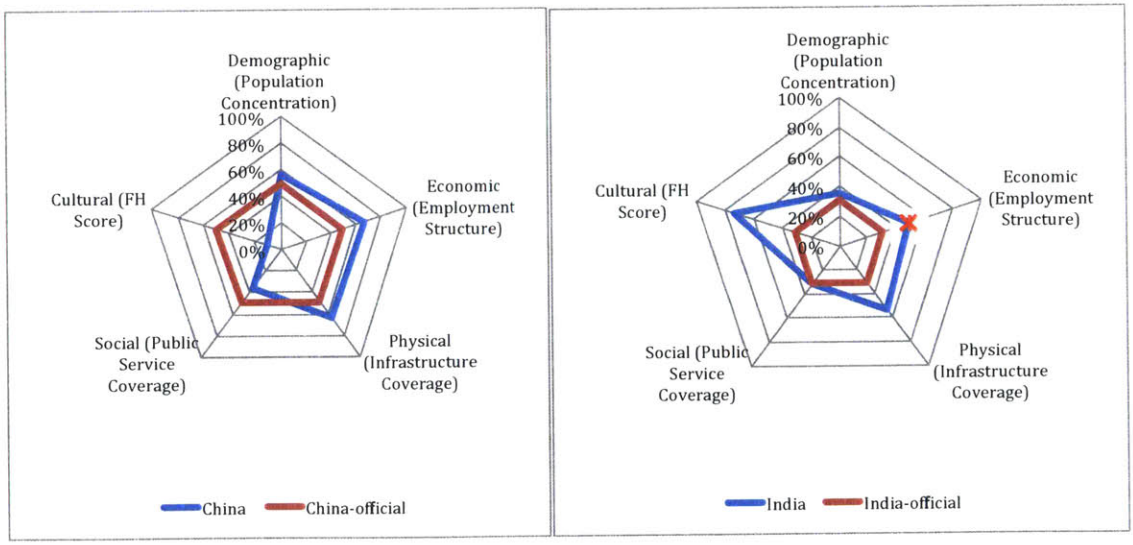


Figure 7 The Different Paths of Urbanization in China and India

5. Discussion and Conclusion

5.1. From the Paradigm of Rural-Urban Dichotomy to the Paradigm of Rural-Urban Continuum

The work presented above will help formulate a new paradigm for understanding the urbanization process. Researchers have for a long time realized the limits of the classic rural-urban dichotomy in addressing the increasingly complicated human settlement system today (Champion and Hugo 2005), and there have been calls for a new paradigm beyond this dichotomy which can enable more precise description and accountings of the demographic features of the modern human settlement system (Jones 2004; Champion and Hugo 2005). In some sense, my work in this essay has responded to this call in proposing the new multi-dimensional measurement system for urbanization conditions. However, the novelty in the new paradigm is not just about the measurement issue. By revealing the many alternative meanings of the urban concept, I introduce new measurements of urbanization conditions, thus extending the classic, demographic-based, linear model of urbanization into a multi-dimensional and comprehensive one. Moreover, through examinations of the additional information the newly introduced dimensions bring in, I reveal the innate unbalanced nature of the urbanization process, a finding that facilitates a further paradigm shift from the classic rural-urban dichotomy to the new concept of rural-urban continuum.

The rural-urban continuum *per se* is not a new concept. Urban sociologists have been using the concept in the sociological sense for decades (Dewey 1960), and they refer the concept as the continuous transition of lifestyle from a rural to an urban status. Geographers also use this concept to refer to a particular form of cultural landscape that have both rural and urban characters (McGee 1991), such as the *Desakota*, the urban fringe belts, the urban villages, etc. In the practice of urbanization statistics, it is also made clear that the human settlement system should be viewed as a continuum from small villages to megacities, and this view was formulated as early as 1952 in the *UN Demographic Yearbook* (Champion and Vandermotten 2004). In some sense, the rural-urban continuum concept in the spatial and sociological senses appears as natural as the rural-urban dichotomy.

My interpretation of the rural-urban continuum, however, differs from the aforementioned views in that it emphasizes the temporal dimension of urbanity – urbanization as a historical process. Therefore, I would like to challenge not only the geographical rural-urban dichotomy, but also the temporal one which clearly distinguishes the rural and urban status in the urbanization process.

According to this view, population is converted from the rural to the urban status, possibly monotonously, in the course of urbanization, and all transitional status are usually considered merely an incomplete or even inferior urban state, and are thus ephemeral, unimportant, and easily get neglected, consciously or unconsciously.

Such a view on urbanization is disputed by my conceptual and empirical analyses in this essay. As found in the case studies, in large developing countries such as China and India, the urbanization level as measured by one indicator can be different from that by another by as high as thirty percentage points within one country. This is to say, in the urbanization process, the transitions from rusticity to different dimensions of urbanity do not necessarily progress in parallel, which in populous and geographically complex countries like China and India means hundreds of millions of people may live in various forms of "quasi-urbanized" status at any given point of their urbanization processes. This finding has given rise to a new view on the historical significance of the transitional states in urbanization, which rather than ephemeral, negligible and unimportant, is actually persistent, enormous, and has profound impacts on the urbanity. Therefore, instead of the classic dichotomist view, the urbanization process is better viewed as a continuum, which is consist of a full spectrum from full rusticity at one end and complete urbanity at another, and in between are various kinds of quasi-urbanisms. These kinds of quasi-urbanisms, furthermore, can also be identical from each other in the way they are unbalancedly developed, and their existence in both spatial and temporal dimensions are so huge that rather than just be viewed as inferior forms of the "ideal" urbanism, they deserve a central place in the field of urbanization studies.

Moreover, I argue that the unbalanced state of urbanism is to gradually diminish in the final stage of a country's urbanization process. Put another way, the convergence of multi-dimensional urbanization levels in a country signals the completion of its urbanization process. This is a historical task for most developing countries, and it is not an easy one, as the urbanization progress in one dimension of urbanism does not automatically guarantee that in others. For example, the Latin American countries had generally achieved very high demographic urbanization levels decades ago, but their other urban development agenda, especially those in the economic and physical dimensions, have been persistently lagged behind. China, on contrary, has achieved significant progress in economic and physical urbanization, but much less so in the social and cultural aspects of urbanism. All in all, the aforementioned convergence may not naturally happen by itself; rather, it requires persistent development and governance endeavors.

The study, therefore, has direct policy significance in that it creates a practical framework for

diagnosing a country's urbanization problems. People have long realized that the urbanization process may go wrong, and have invented diagnostic concepts such as over-urbanization, pseudo-urbanization, and under-urbanization to help describe the syndromes in urbanization (Davis and Golden 1954; Sovani 1964; Konrad and Szelenyi 1977). These concepts are useful in some occasions. Nevertheless, they are still based on the linear view of the urbanization process, and the terms such as over-, pseudo-, and under- can only convey limited, one-dimensional, and sometimes arbitrary information. In contrast, the new multi-dimensional measurement system can present a far more informative and accurate picture of a country's urbanization condition, and is thus more efficient in evaluating its situation and finding specific problems. For example, two countries may have similar urbanization levels as measured by the classic demographic criteria, but their forms of urbanism may in fact have multi-dimensional structural differences, which can be explicitly revealed in the new measurement system, such that the policymakers can know the advantages and drawbacks in the country's urbanization and in turn make specific policies accordingly. For modest-urbanized developing countries where unbalancedness in urbanization prevails, the new diagnosing tool is of particular value as compared to conventional ones.

5.2. Reflection on Some Methodological Issues

This study is a preliminary endeavor into the new paradigm, and it surely has many imperfectness and unresolved questions left for future inquires. First, regarding the case study in the fourth section, it is limited in the number of case countries, and also contains many rough and coarse-grained estimations on the one hand; the indicators and criteria for measuring the multi-dimensional urbanization conditions *per se* are subject to refining on the other. Second, through the case studies, I test the hypothesis of the unbalanced urbanization process with a cross-sectional dataset; however, a more explicit way of testing it is still by using time-series or panel data, which is beyond the scope of this essay and I hope other members in the academic community contribute to this endeavor.

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Essay 2

The Circle of Life: The Life-Cycle Circular Migration Pattern of China's Internal Rural-Urban Migrants and Its Urbanization Implications

1 Introduction

China has undergone a spectacular urbanization process in the past three decades. By adding 600 million to its urban population, the country alone has contributed to one third of the world's total increase of urban population over the period (United Nations, 2012). However, this process has also created an urbanism full of paradoxes. On the one hand, it has been accompanied by an as spectacular economic growth and highly ordered physical urban expansion, such that the country has been able to exempt itself from the unfortunate but usual development story in many other developing countries which is featured by economic stagnation, chaotic physical urban development, and social problems caused by stubborn urban unemployment (Fuller & Romer, 2014; Leiwen Jiang, 2006). On the other hand, however, the country has a rather underdeveloped civil society, and the coverage of many key urban public services are unacceptably low even by a developing country's standard. All in all, this is a highly unbalanced urbanism as viewed from the multi-dimensional perspective of urbanization in Essay 1, and the reason for its unbalancedness is a topic of interest for many who study China's urban conditions.

Essay 1 also suggests one approach to understand the unbalanced urbanism, that is, to view the macroscopic phenomena as a reflection of the unparalleled advancement among different aspects of the urban residents' lifestyle at the microscopic level. Following this approach, a researcher who is familiar with China's urbanization would quickly discover the key to understand the country's unbalanced urbanism, and that is the so-called floating population. Technically, the floating population refers to the people who have different registered and actual living locations. In China's context, however, most of them are actually active internal migrants who have a permanent registered residency in rural places but would migrate to cities for a job. These people are statistically defined as urban population if they live in cities for more than six months a year, and the volume of them amounts to more than 200 million in recent years.

Studies based on census and some survey data reveal a general picture of the floating population's living status. They are mostly young people from rural areas who migrate to cities for a job, but retain a permanent residency in the home village, and in most occasions their family members, especially the elders and children, do not migrate together with them. The migrant workers would shuttle between the city and the home village throughout their stay in the city, and most of them would permanently return to the home village after spending a period of life in the city. Overall, the floating population do "float" over both the urban and rural societies rather than assimilating into either of them, and thus live a quasi-urban, quasi-rural lifestyle. Considering the

magnitude of the migration, the migrants' mixed lifestyle may well explain the macroscopic unbalancedness of the country's urbanism.

The above description of the floating population's lifestyle, however, is a highly stereotypic one. Though there have been plenty of statistical data and studies on the group's overall demographic characteristics, very limited information are yet available on these people's living and migration behavior patterns at the individual level. Their motivation for migrating, their choice of destination places, the time length and frequency of their migration trips, and, most importantly, the reason for their seemingly lack of permanent settlement intentions in cities, all these microscopic behavior patterns of the floating population remain to a large extent unclear. Particularly, to date, there have been no longitudinal analysis on the migrants' migration-related behavioral patterns in the entire life-cycle, such that the logics behind these behaviors are hard to understand. Rather, most research so far available has exclusively concentrated on the exogenous factors, especially the institutional ones, for explaining the group's seemingly lack of permanent settlement intention in cities. However, as the experiences of other countries where similar temporary migration patterns exist suggest, though the exogenous factors are undoubtedly important, they alone cannot fully determine the migrants' behavior, and endogenous reasons are in many occasions the key to understand the migrants' behavioral logics, as well as their urbanization implications.

In this essay, I present a thorough examination of the migration-related behavior patterns of China's floating population. Based on a first-hand dataset from a large-sample field survey carried out from 2014 to 2015, I not only present a description of the latest demographic characteristics of the floating population and the recent trends, so as to provide a larger picture of China's internal migration, but also dive into the individual level, and reconstruct the life history of the floating population through longitudinal analysis of their living and migrating behaviors, so as to answer the following research questions: at the microscopic, individual level, and from a longitudinal perspective, what is the life-time migration-related behavioral pattern of the floating population, including the urban-ward migration, return migration, and permanent urban settlement? What are the motivations and logics behind this behavior? Particularly, what are the endogenous factors, if any, that determine the floating population's choice of temporary and permanent living locations, such that most of them would live a floating way of life rather than assimilating into the urban society and become complete urban residents in a lifestyle sense? And finally, what are the macroscopic urbanization implications of the floating population's migration behavior from a multi-dimensional perspective?

Through a survival analysis of the floating population's life-cycle migration behavior, my answer to the above questions, put simply, is that the floating population's migration behavior pattern is a very special form of circular migration, which can be summarized in the following life-cycle story of a typical floating population. A typical rural resident in China would join the urban-ward migrating force at a certain point early in his/her life, either for education or for a job, so as to establish a temporary residency in the city. Throughout his/her life afterwards, the migrant would encounter a series of major events, including chance to get higher education, marriage, childbirth, promotion, retirement, etc. Each event would create a bifurcating life path either toward a permanent urban settlement or toward a continued temporary urban residency, and the migrant's endogenous endowments, including his/her own human capital possession as well as the living conditions of other members in the household, together with exogenous factors, would determine the direction of the migrant's life path at the bifurcating point. At each point, a portion of the migrants would be filtered out toward a permanent urban settlement, and therefore only a small portion of them would manage to establish a permanent urban residency in the end, while those who are filtered out would opt to retreat to the home village, where the next generations (their children) are about to join a new tide of urban-ward migrants with hopes of passing through the filters and become a permanent urban resident. Overall, this is an iteration and filtration process, which features an overlapping generational, iterative pattern of the internal migrants' migration behavior, which I call "the Circle of Life". I further argue that both the migrants' endogenous endowments and institutional factors have played an important role in shaping this migration pattern, and consequently give rise to China's unbalanced urbanism. However, I concentrate on the analysis of the migration pattern *per se* and its endogenous determinants, and leave the policy-related analysis for Essay 3.

The rest of the essay is organized as follows. Section 2 presents a review of relevant literature on population migration theories so as to provide an analysis framework of the essay. I also include a review of studies on China's internal migration and urbanization in the section, so as to reveal the research gaps to fill. Section 3 presents the data used in the essay and methods employed in the analysis of the migrants' behavior patterns and their determinants. Section 4 presents a description of the floating population's latest demographic characteristics and their living and working status, and provides an evaluation of the multi-dimensional urbanization impacts of the floating population's migration behavior. In sections 5 and 6, I move on to conduct survival analyses of the migrants' life-cycle migration behavior pattern, and develop hazard models to reveal the

endogenous determinants of this pattern. I summarize the analyses in the final section and present the "Circle of Life" model, thus concluding the essay.

2 Review of Literature on Population Migration and Its Condition in China

The modern history has seen the world transforming from a predominantly rural society to an urban-dominant one, in which rural-urban migration in different times and also in different parts of the world had emerged in different forms. Roughly, the rural to urban migration in the early industrial countries in the eighteenth and nineteenth centuries is widely considered to be one-direction and also of a permanent nature (Goldstein, 1993), and it thus gives rise to the neoclassic theories of population migration, which explains the population movement as the rural residents' response to the income or expected income difference between rural and urban places for a higher yield to their labor (Harris & Todaro, 1970; Lewis, 1954). However, later urban developments, especially those across the developing world after the Second World War, had witnessed different forms of rural-urban population movement. Though some of the forms, such as those seen in the urbanization of Latin American countries, seemed to fit the neoclassic model, others were apparently deviated from it. The rural-urban migration in most Africa and Asia countries have featured two-way or circular migration, and have been usually of a temporary nature. The new phenomena has given rise to alternative theories, among which the two most important ones are the dual labor market theory, and the New Economics of Labor Migration (NELM). Both the new theories go beyond the narrow individual economic rationales and explains labor migration within wider social and psychological scopes, and they combined constitute my framework of analysis in this essay.

Below I briefly review the modern history of rural-urban migration, as well as the relevant theories. I also review relevant research on China's history of rural-urban migration in the recent rapid urbanization era, so as to reveal the research gaps to fill, and also discuss the applicability of the above mentioned theories in China's context.

2.1 Population Migration Theories and their Evolution

2.1.1 The One-way Rural-Urban Migration in Early Industrial Countries and the Neoclassic Labor Migration Theories

The Modern Capitalism, Urbanization, and the One-way Rural-Urban Migration

Throughout the ancient times, urbanization had never become any meaningful long-time trend across the world (Grauman, 1976), until the emergence of modern capitalism in the sixteenth or seventeenth centuries, when the development of urban industry in certain western Europe countries began to draw population from rural areas, and thus induced a boom of urban population (Vries, 1984). For many, as Elkan (1967) noted, the picture of population migration in this era is one in which peasant families, who in most occasions are landless or have to abandon their farmland, leave their villages in stark poverty to stream into the towns and man new industries there, and so they are transformed into a new urban working class. This model of one-way, permanent rural to urban migration seems to fit the historical experiences in the early industrial countries, and it later gives rise to the neoclassic theories of labor migration.

Neoclassic Theories: from Lewis to Harris-Todaro

The modern migration theories stem from the push-pull paradigm first introduced by Ravenstein (1885), which takes individual migrants as the basic unit of analysis, and views migration as the response to the combined push-pull forces from the origin and destination places. Apparently, this paradigm is in line with the neoclassic economics, and appears to fit the historical experiences described above. Following this paradigm, Lewis (1954) presented a formal two-sector model of rural-urban labor migration which states that the productivity difference between the rural agriculture sector and the urban non-agriculture sector will induce surplus labors in the rural areas to migrate to cities. The model, through later development in the works of Ranis and Fei stressing the importance of agriculture productivity (Ranis & Fei, 1961), became in some sense the first standard theory for rural-urban labor migration.

The theory was later somewhat challenged by the urbanization experiences in some developing countries after the Second World War, where rapid rural-urban migration was accompanied by excess urban unemployment, a phenomenon difficult to explain by the Lewis-Ranis-Fei Theory. Harris and Todaro (Harris & Todaro, 1970), in analyzing the new empirical evidence, proposed a refined theory within the neoclassic framework (referred to as the HT Model hereinafter), which states that it is the expected income difference rather than the actual income

difference that dominates the rural laborers' migration behavior. Over time, the initial HT Model has been extended in various ways to allow for concurrent employments, informal sectors, the effect of education, employment fixity, endogenous urban wage setting, among others (Fields, 2005); It has proven a success in explaining the excess urban unemployment that accompanied the rapid urbanization process in Latin America and some African countries, and its policy suggestions were also found effective in many occasions (Fields, 2005).

2.1.2 Complexities in Post-WWII Labor Migration and the Emergence of the Non-Neoclassic Migration Theories

However, as urbanization unfolded throughout the developing world after the Second World War, new patterns of population migration soon emerged which fundamentally challenged the one-direction model of rural-urban migration, and also revealed the many limitations of the neoclassic theories. After all, the theory is based on equilibrium models for a simplified world, and its many strict assumptions have made it not realistic enough to address the real-world complexities. First, it assumes a strict rural-urban dichotomy, and thus excludes the possible existence of quasi-urban status, but such status are commonplace in the urbanisms in developing countries. Second, it assumes a one-direction population movement from rural to urban places, which is proven not necessarily so in the urbanization experiences in most post-WWII developing countries. Indeed, the two-direction movement of population between rural and urban places may well constitute a major reason for the emergence of the ubiquitous quasi-urban status. Lastly, the neoclassic model aims to maximize individual expected income, but real-world evidence shows that in most occasions the households rather than individuals are the more likely basic unit of migration decision-making. New theories beyond the neoclassic paradigm, therefore, are called for to respond to the new challenges.

Two-way, Temporary Internal Migration in Post-WWII Developing Countries and the New Economics of Labor Migration

As mentioned above, one prominent characteristic of the population migration in many developing countries in this period is its predominantly temporary nature. For example, studies in Indonesia in the 1970s show that two-thirds of the rural-urban migrating people are actually circulating between the two kinds of locations, and most of them do not seem to have an intention to permanently settle in the cities (G. J. Hugo, 1982). In the 1980s, follow-up studies in Indonesia further show that 50% of the urban workers are temporary migrant workers (G. Hugo, 1997), and the volume and relative importance of temporary migration had been increasing in the country.

Similar migration patterns are also observed in other developing countries, such as eastern and western African countries (Cordell, Gregory, & Piché, 1996; Elkan, 1967), Thailand (Goldstein, 1993), India (Gidwani & Sivaramakrishnan, 2003), and many other countries in the Asia-Pacific region (Guest, 1999).

Apparently, such a migration pattern cannot be explained within the neoclassic framework. Early studies had therefore resorted to cultural or social explanations. For example, Elkan (1967) summarized four explanations for the circular migrating behavior of young rural residents in Uganda, including ceremonial reasons (migration as an "initiation rite" for the young people), political-economic reasons (needs to earn cash and pay for the head tax), and socio-cultural reasons (the "target worker" theory). Such non-economic explanations, however, were considered inadequate, and the same author argued, through analysis of the migrants' behavior, that the social and cultural factors should be taken into consideration in combine with economic factors, and showed how the migrants seem to take circulation as a household strategy toward future permanent migration to the cities.

These early studies, in stressing the effect of social and cultural factors in migration, hinted at the later proposed New Economics of Labor Migration (NELM) (Stark & Bloom, 1985), which remedies the neoclassic theories' fault of taking for granted the individual migrants as the basic unit of analysis, and also their neglect of social and psychological factors in migration. The theory conceptualizes labor migration within specific social contexts, and stresses the central role of the households rather than the individual migrants as the basic decision-making unit in migration. The theory argues that because the whole household's welfare is at concern, the aim of migration should include not only the maximization of economic gains, but also the minimization of income risks for the whole household. Also, non-economic concerns such as the migrants and the household members' living conditions complement the narrow economic calculations, and they together determine the final migration decision (Stark & Bloom, 1985; Stark & Taylor, 1991). This leads to the involvement of the migrants' life-cycle status, as well as the cultural and social factors in modeling the migration process. Overall, the NELM offers a satisfactory approach to understand labor migration from various aspects of the migrants' endogenous endowments, and thus constitutes a powerful theory on rural-urban migration from the supply side of the migrant labor.

International Circular Migration and the Dual Labor Market Theory

In contrast, another major branch of theoretical progress, the dual labor market theory, covers the migration problem mainly from the demand side. The theory stems from the international labor

migration between the developed and the underdeveloped parts of the worlds which emerged in the 1960s and the 1970s. Examples of such population movements include those from Latin American countries to North America (Piore, 1979), those from the south and east Mediterranean region, and later, from Eastern Europe to Western Europe (Cassarino, 2008; Fargues, 2008), and sometimes those between different developing world locations (Stretton, 1983). Finally, people find similar migration patterns can even occur in a country's internal migration, such as in the case of South Africa (Collinson, Tollman, Kahn, Clark, & Garenne, 2006).

At first, both the labor-exporting and labor-importing countries view such population movements as a temporary phenomenon, and each side expects certain economic and social gains from the migration. However, though the kind of migration remains temporary in some sense, the temporary migration phenomenon *per se* soon turns out to be perpetual. Moreover, the original expectations on such migration's social and economic benefits seem only achieved in rare circumstances (Wickramasekara, 2011), while other socio-economic impacts, which are mainly negative, show up all around, causing long-lasting policy controversies (Angenendt, 2007; McLoughlin & Münz, 2011; Triandafyllidou, 2013).

In response to this new migration model, researchers first noticed that there is a stratification in the labor market between the temporary circular migrant laborers and local workers. For example, Todaro (1969) pointed out that because of the entry threshold of the urban formal sector, new migrants from rural places usually enter the informal sector, in which the jobs are described by some as 3-D jobs (Difficult, Demanding, and Dangerous). Based on the observation, Piore (1979) formally proposes the dual labor market theory, which states that there exist two kinds of labor markets: the primary market which requires relatively highly educated or skilled workers, and offers better job opportunities and wage in return, and the secondary market which is just opposite to the primary one. The theory further predicts that due to the periodical fluctuation in the economy, the economy has an intrinsic need for migrant workers to fill the secondary labor market as they are more tolerant to the low wage as well as insecurity of employment in the market. Consequently, the kind of migration thus inflicted, though is of a temporary nature at the individual level, meets the long-lasting demands of the economy, and therefore makes certain special migration patterns such as seasonal migration or circular migration not only possible, but also desirable. Overall, in stressing the difference between labor and ordinary goods and relating it to the inevitable needs for temporary jobs in modern industrial societies, the dual labor market theory reveals the importance of the migrant labors' human capital endowments in shaping their life paths, thus not only providing a satisfactory explanation of the circular migration pattern which is

otherwise difficult to theorize within the neoclassic framework, but also offering an approach to link individual behavior with macroscopic urbanization patterns, which is also a focus of this study.

2.2 China's Internal Migration and Urbanization

2.2.1 China's Urbanization, Internal Migration, and the Floating Population: an Overview

China has experienced spectacular economic growths and urban development since the country's 1978 Reform and Opening-up. During this period, the country's per capita GDP has grown from USD 155 (current dollar) in 1978 to USD 8000 in 2015, and urbanization level from 17.92% in 1978 to 54.77% in 2014. In absolute terms, this means an increase of urban population from 172 million to 749 million within 36 years. With a very low fertility in the urban places, which is also much lower than that in the rural areas, the most part of the increase has been realized through rural-urban population migration (Zhang & Song, 2003).

However, the above urban population statistics are based on the so-called "permanent resident" criteria, in which a permanent resident of a city is technically defined as one who lives at least six months consecutively in a place in one year. Apparently, this is a loose definition of permanent residency, and a stricter criteria, the Hukou criteria, which defines one's residency as the place where one's household registration (Hukou) is located, gives a rather different picture of urbanization in China. By the Hukou scale, the country's urbanization level only grows from 15.82% in 1978 to 36.63% in 2014 (*Figure 8*). The difference, which has been expanding throughout the past three decades, amounts to more than 220 million in recent years, and is predicted to keep the volume in the near future. Due to their different actual and registered living places, these 220 million people are generally called the "floating population", which is technically defined as those whose location of permanent residency is different from location of household registration (Hukou) at the prefecture level[4], and they indeed live a floating style of life typically by working in the city but still keeping a deep rural root. With their huge volume and special lifestyle, the existence of the floating population is widely regarded as one of the main characteristics of China's urbanization (Chan, 2001; Fan, 2008; L. J. C. Ma, 2002; Zhang & Song, 2003; Zhao, 2002).

[4] http://www.stats.gov.cn/tjsj/zxfb/201502/t20150226_685799.html

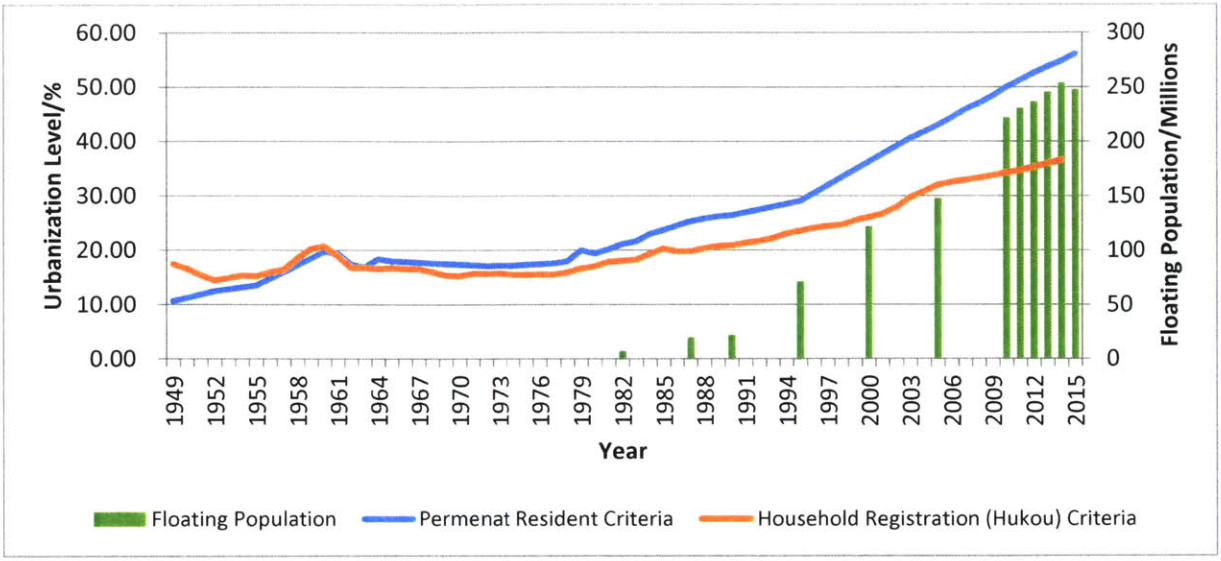

Figure 8 China's Urbanization Levels (Two Criteria) and Floating Population, 1949-2015

Source: China Conpendium of Statistics (1949-1999), China Population and Employment Statistics Yearbook (2000-2015), Duan, Yang, Zhang, & Xuehe Lu (2008)

2.2.2 General Characteristics of the Floating Population: Demographics, Migration Patterns, and their Evolution

There have been plenty of studies on the general characteristics of China's floating population, though most of them are published in Chinese. Also, most of the studies are based on macroscopic statistical data, such as data from the national census. In contrast, data from large-sample, direct field surveys are relatively limited. *Table 9* presents a list of major such surveys available since late 1980s. Based on these studies, below I present a brief summary of the general characteristics of the floating population, including the overall volume and basic demographics, the spatial-temporal patterns of their migration, their work status in cities, and their final settlement intentions. All these characteristics have obviously evolved with time, which I also cover below. It should be noted, however, that I only present the general patterns here, and I leave a more detailed description and analysis for section 4.

Table 9 List of Relevant Rural and Migrant Worker Surveys and Empirical Studies in the Past Three Decades

Survey Time	Surveyor	Survey Area	Sample Size	Sample Type	References
1987-1994	National Statistics Bureau	222 Villages across the country	N.A.	Migrant workers	(Geng, 1989)
1992	National Statistics Bureau	Nationwide	N.A.	General census	(Zhuang, 1995)
1995	Ministry of Agriculture	Nationwide	N.A.	Migrant workers	(Research team from the Ministry of Agriculture, 1995)
2001-2004	National Statistics Bureau	Nationwide	N.A.	General census	(China National Statistics Bureau, 2001)
2004	Research Department of the State Council	11 Provinces across the country	68000	Rural households	(Research team from the State Council, 2006)
2004	Guangdong Provincial Government	21 Prefectures in Guangdong Province	9672	Migrant workers from outside the province	(Research team from Guangdong Provincial Government, 2006)
2005	Zhongnan University of Economics and Law	The city of Wuhan	784	Migrant workers from outside the city	(Deng & Hu, 2007)
2007	Wuhan University	4 cities: Wuhan, Shenzhen, Guangzhou, Dongguan; a few villages in two provinces: Hubei, Henan	765	Urban migrant workers and rural households	(Jian & Huang, 2007)

It should also be noted that as the "floating population" is simply defined as those with different registered and actual living locations, it certainly includes some sub-groups. Logically, by the type of the origin and destination living locations, it is at least consist of four sub-groups: those who migrate from a rural place to another rural place, those from an urban place to a rural place, those from an urban place to another urban place, and those from a rural place to an urban place. Among the four sub-groups, studies have shown that the first two groups, though may be important in some countries (de Haan, 1999), are only of negligible population volumes in China. In contrast, the third group has been constituting 25% to 30% of all floating population in the past three decades (Duan et al., 2008), and the fourth group, mainly consist of the migrant workers and their dependents, is the largest sub-group of the floating population, and is thus usually referred to as THE floating population in a narrow sense. As the focus of this study is on the rural to urban migrant workers, I cover mainly the status of this sub-group below if not otherwise clarified[5].

[5] Hereinafter I use the terms of floating population and migrant workers interchangeably in this essay.

Overall Volume and Demographic Characteristics

As shown in *Figure 8*, the recent three decades have seen a boom in the volume of the floating population in China. In 1982, when migrant workers in their current senses did not actually exist in China, there were only 6.6 million of people living in a location different with their household registration location. The Hukou reform in 1984 marked the beginning of the migration era, and in 1987, there were already 18 million floating population. The figure further grows into 21 million in 1990, 70.7 million in 1995, over 100 million in 2000, 147 million in 2005, and 253 million in 2014, which constitutes more than 20% of the total population. However, in 2015, the figure, for the first time in history, had dropped by 6 million. Though there are controversies on whether this has marked the turning point of the volume of the floating population, national demographic statistics seem to imply that there is little room for a further increase in its volume. The most likely trend is that the volume of the floating population would keep the current level in the near future, and then steadily drop with time (Chen & Ye, 2013).

In terms of the age structure, statistics show that floating is largely a lifestyle for the young people. Over the three decades, the ratio of work age people (16-64) in all floating population has increased from less than 60% in 1982 to 84% in 2010, though the average age of the floating population has also increased from 28 in 1982 to 31 in 2010 (Duan et al., 2008).

The gender structure of the floating population shows a "U" shape throughout the three decades. Before the 1984 Hukou reform, female constituted the majority of the floating population (54.35% in 1982). The situation had dramatically changed since the 1984 reform. In 1988, the male ratio was for the first time above 50%, and it reached a peak in 1990 when the ratio was 55.56%. The ratio dropped to 51.69% in 2000, and has kept relatively stable since then, and statistics from different sources generally show a range between 51% and 53%. In 2010, statistics from a general census show that the ratio was 52.38%.

With regard to education status, the floating population is in general more educated than the rural population, but less educated than the urban population, though the absolute level of education had steadily increased from 5.58 years in 1982 to 8.89 years in 2005. However, in 2005, only 2.21% of the floating population were with a college or advanced degree.

The last aspect of the floating population's demographic characteristics to note is the marital status, which have followed a trend similar to the gender structure. The ratio of married people in the floating population was 63.45% in 1982, and then it reached the peak of 68.37% in 1987. In 1990, the ratio dropped to 59.73%, and then slowly grew to 64.84% in 2000, and 68.41% in 2005.

Moreover, though the married migrants increasingly tend to migrate with their spouse and children, the ratio of whole household migration have remained low, and is never over one-third of all migrant households (Chaolin Gu et al., 1999; Duan et al., 2008).

Spatial-Temporal Pattern of Migration

Most floating population has a rural origin. As noted earlier, over the past three decades, rural residents have steadily constituted 70% to 75% of all floating population, and they have been roughly evenly distributed among the country's rural areas, with slight regional differences that are likely to relate to cultural-geographical reasons. On the destination side, however, thing are more complicated. Overall, the trend skews to long-distance migration. In the early 1990s, empirical studies show that within-county migration constitutes the majority of the floating population (though the accurate figure is unavailable), and those from outside of the county but within the province and those from outside of the province constitute about 55% and 45%, respectively of the rest of the migrants (Chaolin Gu et al., 1999). In 2000, however, the figures from the national census were 45.5%, 25.2%, and 29.4% from each of the categories, and in 2010 they became 34.6%, 32.5%, and 32.9%, respectively, and some small-scale surveys show even higher ratio of long-distance migration in the same period (Deng & Hu, 2007; Research team from Guangdong Provincial Government, 2006). Moreover, the floating population has become increasingly concentrated in the main mega-city groups along the country's eastern coast, especially in the Yangtze River Delta and the Pearl River Delta.

In terms of the temporal migration patterns, just as the name "floating population" suggests, they generally live a rather mobile life, but the magnitude of the mobility has also been evolving. Early floating population in the 1980s were predominantly seasonal temporary workers; while by mid-1990s, studies show that seasonal workers constitute only half the migrant workers, while the other half would live more than six months a year in cities (Chaolin Gu et al., 1999). Further, by mid-2000s, empirical studies show that pure seasonal workers only constitute less than 20% of all migrant workers (Hu, Xu, & Chen, 2011). Meanwhile, not only the migrants' time spent in a year have increased, their total lengths of stay in cities have also increased. Statistics show that floating population who had lived in cities for more than 5 years had increase from 7 million in 1987 to 46 million in 2005. Overall, the floating population's tendency of longer city stays is clear.

Work Status

In general, while some highly educated or skilled migrant workers manage to be employed in formal urban sectors, most of the floating population have to work in the sectors with an inferior

work condition and a significantly lower salary than that of formal urban sectors. However, the situation has been changing, too, since the beginning of the migrant workers era in late 1980s, and the work condition and income for most migrant workers have been greatly improved, though the gaps still exist until today.

In late 1980s and early 1990s, though the newly emerged migrant workers had effectively filled the labor gap in the cities, they were viewed as a threat to the local urban laborers in terms of employment opportunities, and municipal governments used to make local regulations depriving the migrant workers from access to certain formal urban sectors. For example, in 1995, Shanghai passed a local regulation which identified three types of jobs, and only the type A jobs which are described as "difficult, labor-intensive, dirty, and dangerous" are fully open to migrant workers, while the type C jobs which are mainly public sector or State-Owned Enterprise positions are reserved exclusively for the local residents (Lihua Jiang, 2002). As a result, a 1999 study described the employment opportunities for the floating population as "simple, unstable, temporary, unguaranteed, unskilled, and underpaid" (Chaolin Gu et al., 1999).

Such blatant institutional discrimination against the floating population had been abolished across the country in the 2000s. Since then, structural changes in China's labor market and the enforcement of stricter labor protection laws have greatly improved the work condition and income of the migrant workers. In recent years, studies show that the average income level of the migrant workers has reached about 60% the level of average urban resident workers (Chen & Ye, 2013). Nevertheless, the low education and skill levels of most floating population still prevent them from obtaining a well-paid job in the formal urban sectors.

Permanent Settlement Location Intentions

A final topic that is of interest is the settlement intentions of the floating population. Here, it should be noted that the term "intention" is somewhat vague: it can refer to an ideal wish regardless of all real-world constraints, or a realistic action plan to be seriously carried out. The former, in some sense, implies the motivation of the urban-ward migration; while the latter determines the permanent/temporary nature of their migration. Interestingly, in China's context, studies have shown that the floating population's urban settlement intentions in these two senses are rather deviated from each other.

On the one hand, in an ideal sense, most studies have concluded that the migrant workers generally wish to settle in cities, especially those who began to migrate after 2000. For example, Roberts (2002) shows that the vast majority of the married female migrant workers in Shanghai

were potential settlers, rather than pure "floaters". Another study in similar time and place but with a wider scope of subjects (all migrant workers) shows that 90.7% of the migrant workers expressed the wish to settle in Shanghai, while the rest were uncertain about the option (Wen, 2006). Migrant workers in other cities expressed similar settlement intentions, too. The ratio of those wishing to settle was about 75% in cities in Zhejiang Province (Zuhui Huang, Wenrong Qian, & Yingchun Mao, 2004), and 67.8% in other large cities including Wuhan, Shenzhen, and Guangzhou (Jian & Huang, 2007).

On the other hand, in a practical sense, the floating population's serious intentions for a permanent urban settlement have been low throughout the past three decades. Indeed, except for the part of floating population who migrate for non-economic purposes (education, marriage, retirement, etc., constituting about one-third of all floating population), studies have shown that most of the floating population, mainly the migrant workers, have consistently expressed low intentions for settling in cities where they work when all realistic constraints are considered. A study in mid-1990s concludes that only 15% to 25% of the floating population were seriously planning to permanently settle in cities (Chaolin Gu et al., 1999). The figure remains stable since then: figures in mid-2000s and around 2010 range from less than 20% to 36.8% in various studies (Hu et al., 2011; Li, 2003; J. Ma & Meng, 2003; Wu, Qi, & Feng, 2003).

2.2.3 Academic Treatments on the Migration Behavior of the Floating Population

The tension between the floating population's high idealistic and low realistic permanent urban settlement intentions naturally lead to the question of what makes them cannot settle in cities. Curiously, rather than trying to explain the phenomena within the framework of the many theories on labor migration as I reviewed earlier, the mainstream of the academic treatments concerning this question, especially those in the English-language literature, have shown a notable China-exceptionalism. Specifically, few studies yet available have considered the behavioral and economic determinants of labor migration as addressed in the dualism or NELM theories, as if they were irrelevant in China's context. Rather, most researchers have resorted exclusively to China's institutional environment for an answer. In general, these studies argue that the floating population's low realistic permanent urban settlement intentions have been a direct result of China's Hukou system which explicitly suppresses the floating population's intentions and abilities to establish a permanent urban residency. For example, Froissart (2008) presents a very typical treatment of the argument. In extreme cases, some researchers even claim that temporary migration is a phenomena unique to China as other countries do not have similar suppressive social

institutions such as the Hukou system (Yu, 2002). Though from the above review of literature we know such an argument is certainly incorrect, it is a very typical and popular bias that may have influenced the academic inquiry on this topic. Opposite arguments, though do exist, such as in Fan (2008) and Zhu (2007), are to say the most, largely marginalized[6].

On balance, such a China-exceptionalism is not necessarily wrong. After all, China is indeed unique in many ways including its political and social institutions, and thus the institution-related explanation does contribute an important insight on the problem. However, I argue that this explanation has overemphasized on the exogenous, institutional determinants of the floating population's migration and settlement behaviors (i.e., the Hukou system), and insufficient academic examinations have been done concerning the role the migrants' endogenous factors have played in the formation of their settlement intentions. That being said, to be fair, due to the lack of empirical evidence on the floating populations' individual behavior patterns, even those holding an opposite position to the mainstream opinion, as cited above, have hardly presented any direct proof on the relevance of the migrants' endogenous endowments in influencing their migration and settlement behaviors.

I, however, try to present such proofs with this essay's analysis. Specifically, given the discussions on the relevant migration theories above, I pay special attention on the relationship between the migrants' human capital endowments and their migration and settlement behaviors, as well as on the migrants' life-cycle status and household status that may weigh in in their migration-related decision-making. Overall, combining these elements, I try not only to present a comprehensive picture of the migrants' life-time migration behavior pattern, but also provide a behavioral explanation of the pattern.

3 Data and Methodology

3.1 Empirical Basis: The 2014-2015 Rural Household Survey

The empirical data on which this study is based is drawn from a large-sample, nationwide survey on rural households' livelihood in China in 2014-2015. Working with a joint team from Peking University (PKU) and China Academy of Science (CAS), I have participated in the survey as the organizer of the survey, and also as a surveyor, so the data are first-hand to me. The survey, to

[6] I am not presenting a detailed review of the literature of both sides of opinions as well as one on the Hukou system here, as I will go detail on this topic in Essay 3 and such a review can be found there.

some extent, constitutes a follow-up of the similar surveys as listed in *Table 9*, and is also a response to the dramatic changes in economic and institutional environments in China since the 2008 global financial crisis, which may give rise to new migration and other behavioral patterns of the floating population.

3.1.1 The Sample

The subject of the survey includes all members of a rural household, including the ones who are currently migrating in cities, so information on the migrant workers is also collected. We employed a stratified random sampling method in the survey. Based on our prior knowledge on China's population and migration geography, we chose 100 villages in 25 counties, covering 13 provinces in all major regions of China. We then randomly select 20 rural households in each of the villages.

The survey was conducted throughout the year from August 2014 to September 2015, so as to avoid any bias caused by possible seasonal migration activities. Finally, we have 2097 valid household respondents across the country, whose members go to 260 destination cities, thus constituting a very representative sample (*Table 10, Figure 26*)[7].

Table 10 Individual and Household Samples in the Survey

	Sample Size	Male	Female	Male Ratio	Female Ratio
Sample Size					
Households	2097				
Persons	9609	4908	4701	51.1%	48.9%

[7] Note that the data source of all the tables and figures below is the 2014 survey data, if not otherwise indicated.

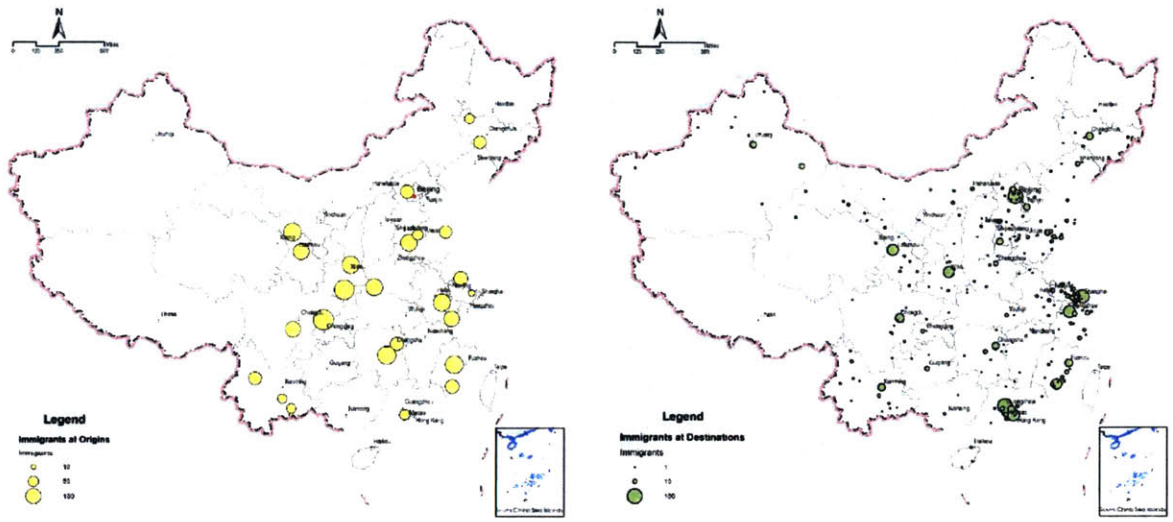

Figure 9 Migrant Samples at Origins and Destinations

3.1.2 The Questionnaire

The survey takes the form of a structured (questionnaire-based), in-depth interview during which a trained surveyor interviews the respondent who does not see the questionnaire. The aim of the survey was to retrieve information on all major living and working status of the rural-urban migrants and rural households. We designed the questionnaire to this end, which is in many dimensions similar to other surveys with similar aims, such as the World Bank's Living Standard Measurement Surveys (LSMS) (Grosh & Glewwe, 2011). The content of the questionnaire covers a wide range of the life of rural and migrant households, including the information on their personal and household demographics, capital property possessions, land tenure, work and migration experiences, social networks, and everyday living status. I will explain the specific survey questions and the respective variables in detail whenever needed in this essay.

The original questionnaire is in Chinese. A translation of the relevant contents of the questionnaire is available in the appendix.

3.2 The Behavior Characteristics of the Migrants and Their Urbanization Implications: Statistical Facts and Analyses

I first study the macroscopic characteristics of the floating population's migration behavior through descriptive statistical analyses of the migrants' migration experiences. The outcome

includes detailed statistics on the migrants' demographic characteristics, the spatial-temporal patterns of migration, the working and living conditions of migrant workers, and the general picture of the migrants' return migration and permanent city settlements.

These analyses should accommodate a comprehensive evaluation of the lifestyle urbanization conditions of China's migrant workers. Under the reasonable assumptions that China's urban residents live a totally urbanized life and that the non-migrant rural residents live a totally rustic life, the migrant workers' partially urbanized lifestyles constitute the only source of an unbalanced urbanism. Thus, such an evaluation would help reveal the urbanization impacts of the migrants' behavior by linking their microscopic lifestyles to the macroscopic urbanization conditions.

I base the evaluation on the five-dimensional measurement system developed in Essay 1[8]. However, because the system is designed to measure the overall urbanization conditions and uses macroscopic statistical indicators, it need to be adapted to the evaluation task here, which concerns the microscopic urbanization conditions and thus should use individual or household level indicators.

Thus, in keeping the overall five-dimensional structure of the measurement system, I choose alternative indicators of urbanization conditions in each dimension. Specifically, I use the percent of the migrants' time spent in cities in a year as the indicator for demographic urbanization. I use two indicators, percent of the migrant workers who are employed in non-agricultural sectors, and the percent of the migrant households' income from non-agricultural sources, as the indicators for economic urbanization. For physical urbanization, I used two indicators, percent of the migrant households' consumption in cities, and percent of the migrant households' housing investment in cities. For social urbanization, I use three welfare and public service-related indicators: percent of children in the migrant households who go to elementary or secondary school in cities, percent of migrants who enroll in city health insurance program, and percent of migrants who enroll in city pensions program. Lastly, for cultural urbanization, I use three indicators: percent of migrant households with two parties of the spouses migrating in same city, percent of migrant households with children migrating in same city, and percent of migrants who celebrate the spring festival in cities. It should be noted that in cases when multiple indicators are included in one dimension, the final value is the simple mean of the indicators. These are, of course, very crude measurements of the lifestyle urbanization, and virtually all indicators as well as the weighing method are subject to

[8] The sixth dimension, the official urbanization level, is obviously irrelevant in the microscopic sense, and is thus removed from the system.

controversy in some sense. However, like in the similar evaluation in Essay 1, my point is not to present an "accurate" evaluation free from controversies, but is rather to provide a general sense of the lifestyle urbanization conditions of China's migrant workers, which the measurement system presented above should do.

3.3 The Longitudinal Migration and Settlement Patterns of the Migrants: Survival Analysis and Hazard Models

Next, I employ the method of survival analysis (or referred to as event history analysis) to study the longitudinal behavioral pattern of the migrants. Taking a rural resident's urban-ward migration or permanent return migration as a terminating event, the migrant's life can be viewed as a process in which he/she "survives" the event (in the case of the event not happening) or not, with the survival rate ($S\ (t)$) and hazard function ($\lambda(t)$) of:

$$S\ (t)\ =\ P\ (T\ \geq\ t)$$

$$\lambda(t)\ =\ \lim_{\Delta t \to 0} \frac{P(t \leq T \leq t + \Delta t | T \geq t)}{\Delta t}$$

Where the survival rate ($S\ (t)$) indicates the probability that the event does not happen after time t, and the hazard function ($\lambda(t)$) indicates The instantaneous rate of occurrence of the event in time t.

Specifically, respective to the urban-ward migration and return migration events, two survival processes can be defined as follows.

3.3.1 Process 1: Migration to Cities

The first survival process concerns the urban-ward migration behavior. For all samples in the dataset over the age of 16 and also have the complete information on their household members, I define the event as "migrating to cities"[9], and those who had experienced the event are thus designated a state of 1. All other samples who had not experienced the event by the time of the survey are censored, and are thus designated a state of 0. Regarding the time variable of the survival process, as the aim of the analysis is to examine the migrants' life-long migration behavior,

[9] On condition that the migration have taken place after the year of 1984, for those before that obviously had a different migration mechanism.

it is defined as the age at which the migrants first migrated to cities (for the samples who are censored, the value of the time variable is the age at the censored time).

3.3.2 Process 2: Permanent Return Migration / Permanent Settlement in Cities

Next, conditional on migrating, a migrant ends up either permanently settling in cities, or permanently returning to home village. Because the two endings complement each other, one can define either of them as the event for the second survival process. For example, for all migrants who had migrated in the first place, taking the case of "permanently returning to home village"[10] as the event, the migrant samples who had done so are designated a state of 1. Further, for this event, censoring occurs for two reasons. A migrant may either have permanently settled in cities at some time before the survey, or is without a definite settlement status (i.e., those who are either in the city or in the home village but had not decided where to permanently settle in the future at the point of the survey). These censored samples are thus designated a state of 0. Again, as the aim of the analysis is to examine the migrants' life-long migration behavior, the time variable of this survival process is define as the age at which the migrants completed their permanent settlement actions. For the samples who are censored, the value of the time variable is either the age at which they permanently settled in cities, or the age at the time of the survey.

Alternatively, the second survival process can also be defined using the opposite event "permanently settling in cities"[11], in which case the value of the state variable is reversed, and the survival and hazard functions are just to the opposite as the above described case. Nevertheless, though the two processes are equivalent, plotting the survival and hazard functions for the latter process is convenient for the researcher to observe the pattern of the migrants' permanent urban settlement behavior. I thus also do the analysis.

3.4 The Determinants of the Migrant's Lifetime Migration and Settlement Behavioral Patterns: Hazard Models

Lastly, Respective to the two survival processes, I develop two Cox proportional hazard models to examine the contributors of the migrants' behavior in each of the processes. Note that for process

[10] In the survey, if a former migrant is currently at home (i.e., not migrating) and has expressed an explicit intentions of not migrating to cities any more in the future, the migrant is regarded as a permanent returnee.

[11] In the survey, if a former migrant has obtained an urban Hukou, or if the migrant has an owned place of resident in a city and he/she has expressed explicitly that he/she would take that place as the primary residency, the migrant is regarded to have established a permanent urban residency.

2, I only use the event definition of return migration, as the complementary event definition of permanent city settlement should give equivalent results. The model take the following form:

$$\lambda(t|X) = \lambda_0(t)exp\ (X'\beta)$$

$$Log\ \frac{\lambda(t|X)}{\lambda_0(t)} = \sum_i X_i\beta_i$$

Where $\lambda_0(t)$ denotes the hazard function, and X represents the covariates vector with coefficients vector β. The overall hazard, therefore, can be viewed as the combined effect of both the basic hazard $\lambda_0(t)$, which is not important here, and the impacts from a series of other factors, which are shown in *Table 11*.

Regarding the covariates, first, the dualism theory of the labor market stresses the importance of the migrants' human capital endowments and life-cycle-related demographic characteristics in influencing their migration behavior. Thus, I include the variables of the gender, age, marital status, and education level of the migrants. Plus, I also include four other variables indicating a migrant's social capital property possessions, which are the ethnicity (majority or minority) of the migrant, that whether the migrant is a member of the village council, that whether the migrant had served in the armed forces, and that whether the migrant is a member of the ruling China Communist Party (CCP). Second, the New Economics of Labor Migration (NELM) reveals that the whole household rather than the individual migrant is a more proper unit of analysis in terms of labor migration as the former is usually the real unit of migration decision-making, and also stresses the role of cultural and social factors in affecting people's migration behavior beyond pure economic calculations. I thus include variables for the migrants' household attributes, as well as socio-cultural factors that may influence the migration behavior. Variables in the former category include the numbers of children and grand-children in the household who are in pre-school, elementary or secondary school, high school, and college[12], all of which constitute the "burden" of the household. I also include a variable indicating if the migrant's parents are still alive[13], as well as one indicating the number of siblings of a migrant. Lastly, to represent the household's economic status, I include

[12] In actual modeling, the sample for survival process 2 includes no individual records with grand-children in high school or college, and that for survival process 1 includes too few individual records to produce any meaningful coefficient estimation, thus the two respective variables are excluded from the two hazard models.

[13] Ideally, one should include a (time-dependent) variable indicating the number of elder members in the household. However, as we only covered the alive members in the households in the survey, those who died before the survey but were alive during the span of the research are not accounted for. This may inflict serious problems in constructing the above mentioned variable. I thus exclude it from the models.

two other variables, one of the total revenues of the household[14], the other indicating whether the household had built or bought a house within the last five years, which is also an important life-cycle event for China's rural households. Variables in the latter category include the migrant's contact frequency and strength[15] with the household, that whether the household engages in a formal annual ancestor worship ceremony, dummy variables of the original geographic and linguistic region of the migrant, a dummy variable indicating whether the migrant migrates across linguistic regions, and the per person income in the migrant's home town. I also include the squared terms of the income variables as there may be quadratic relationships between these variables and the migration behavior. For a list of the variables, and also the descriptive statistics of the variables in both models, see *Table 11*, *Table 12*, and *Table 13*.

Lastly, it should be noted that the Cox proportional hazard model requires the two survival processes satisfy the proportional hazard assumption, which states that the hazard ratio (of city-ward migration or return migration) for any two individual migrants at any point of time (age) should be the same. Intuitively, this means that a migrant should follow the same time-independent mechanism of migration behavior throughout his/her life, which sounds reasonable. Additionally, judging from the shapes of the stratified hazard functions, the proportional hazard assumption does seem to hold for both processes. However, for rigorousness purposes, I still perform the Schoenfeld Residual Test for both models to test for the proportional hazard assumption. In case that any independent variable does not satisfy the assumption, I include an interaction term of the variable with time, so as to remedy the non-proportionality problem.

Table 11 Variables in the Hazard Models

Variable Group	Variable	Time-dependent
Dependent Variables	State - Migration (Model 1)	N
	Duration - First Migration Age (Model 1)	N
	State - Permanent Return Migration (Model 2)	N
	Duration - Last Return Migration Age (Model 2)	N
Personal Attributes	Male	N
	Age	N
	Married	N
	Education	N
	Ethnicity Majority	N
	Village Council Member	N

[14] A few samples with exceptionally high household income are removed from the sample.

[15] I use the variable of "to what degree do you consult with your household members when it comes to big deals in life (scale 1 – 5)" as a proxy for the contact strength.

	Military Service	N
	CCP Member	N
Household Attributes	Number of Preschool Children in Household	Y
	Number of Elementary or Secondary School Children in Household	Y
	Number of High School Children in Household	Y
	Number of College Children in Household	Y
	Number of Preschool Grand-children in Household	Y
	Number of Elementary or Secondary School Grand-children in Household	Y
	Number of High School Grand-children in Household	Y
	Number of College Grand-children in Household	Y
	Had Built/Bought House within 5 Years	Y
	Parents Alive	N
	Numbers of Siblings	N
	Total Household Revenues	N
Migration Origin Place Attributes	Region=Eastern	N
	Region=Middle	N
	Region=Western	N
	Original Linguistic Zone=Mandarin Central	N
	Original Linguistic Zone=Mandarin Jiang_Huai	N
	Original Linguistic Zone=Mandarin Lan_Yin	N
	Original Linguistic Zone=Mandarin North	N
	Original Linguistic Zone=Mandarin Northeast	N
	Original Linguistic Zone=Mandarin Southwest	N
	Original Linguistic Zone=Min Dialect	N
	Original Linguistic Zone=Xiang Dialect	N
	Original Linguistic Zone=Yue Dialect	N
	Home Town Income per Person	N
Cultural and Social Factors	Home Contact Frequency	N
	Home Contact Strength	N
	Ancestor Worship	N
	Trans-Linguistic Zone Migration	N

Table 12 Descriptive Statistics – Hazard Model 1

	N	Minimum	Maximum	Mean	Std. Deviation
State (Migration)	3794	0	1	0.371	0.483
Duration (First Migration Age)	3794	12	84	39.974	16.933
Male	3794	0	1	0.506	0.500
Age	3794	16	84	43.967	14.395
Married	3794	0	1	0.910	0.286
Education	3794	0	19	7.725	3.690
Ethnicity Majority	3794	0	1	0.946	0.226
Village Council Member	3794	0	1	0.040	0.196
Military Service	3794	0	1	0.045	0.206
CCP Member	3794	0	1	0.087	0.282
Parents Alive	3794	0	1	0.999	0.028
Numbers of Siblings	3794	0	3	0.143	0.414
Total Household Revenues	3468	-439295.000	630140.000	53300.814	63587.820

Region=Eastern	3794	0	1	0.354	0.478
Region=Middle	3794	0	1	0.266	0.442
Region=Western	3794	0	1	0.380	0.485
Original Linguistic Zone=Mandarin Central	3794	0	1	0.144	0.352
Original Linguistic Zone=Mandarin Jiang_Huai	3794	0	1	0.138	0.345
Original Linguistic Zone=Mandarin Lan_Yin	3794	0	1	0.098	0.297
Original Linguistic Zone=Mandarin North	3794	0	1	0.168	0.374
Original Linguistic Zone=Mandarin Northeast	3794	0	1	0.064	0.244
Original Linguistic Zone=Mandarin Southwest	3794	0	1	0.185	0.388
Original Linguistic Zone=Min Dialect	3794	0	1	0.082	0.275
Original Linguistic Zone=Xiang Dialect	3794	0	1	0.082	0.274
Original Linguistic Zone=Yue Dialect	3794	0	1	0.040	0.196
Home Town Income per Person	3794	1200.000	48000.000	9647.364	6972.882
Valid N (listwise)	3468				

Table 13 Descriptive Statistics – Hazard Model 2

	N	Minimum	Maximum	Mean	Std. Deviation
State (Permanent Return Migration)	1294	0	1	0.100	0.300
Duration (Last Return Migration Age)	1294	12	67	33.838	9.274
Male	1294	0	1	0.627	0.484
Age	1294	16	74	36.063	9.929
Married	1294	0	1	0.845	0.362
Education	1294	0	19	8.890	3.138
Ethnicity Majority	1294	0	1	0.965	0.183
Village Council Member	1294	0	1	0.026	0.160
Military Service	1294	0	1	0.045	0.207
CCP Member	1294	0	1	0.066	0.249
Parents Alive	1294	0	1	0.999	0.028
Numbers of Siblings	1294	0	1	0.232	0.422
Total Household Revenues	1172	-377084.000	427900.000	65777.438	63880.010
Region=Eastern	1294	0	1	0.310	0.463
Region=Middle	1294	0	1	0.307	0.461
Region=Western	1294	0	1	0.383	0.486
Original Linguistic Zone=Mandarin Central	1294	0	1	0.206	0.404
Original Linguistic Zone=Mandarin Jiang_Huai	1294	0	1	0.144	0.351
Original Linguistic Zone=Mandarin Lan_Yin	1294	0	1	0.101	0.302
Original Linguistic Zone=Mandarin North	1294	0	1	0.156	0.363
Original Linguistic Zone=Mandarin Northeast	1294	0	1	0.049	0.217
Original Linguistic Zone=Mandarin Southwest	1294	0	1	0.145	0.352
Original Linguistic Zone=Min Dialect	1294	0	1	0.088	0.284

Original Linguistic Zone=Xiang Dialect	1294	0	1	0.094	0.292
Original Linguistic Zone=Yue Dialect	1294	0	1	0.017	0.129
Home Town Income per Person	1294	1200.000	48000.000	8929.502	7297.056
Home Contact Frequency	1294	0	30	4.769	7.360
Home Contact Strength	1294	1	5	3.803	1.216
Ancestor Worship	1294	0	1	0.266	0.442
Trans-Linguistic Zone Migration	1294	0	1	0.444	0.497
Valid N (listwise)	1172				

4 China's Internal Rural-Urban Migration: Statistical Facts, New Trends, and Urbanization Implications

4.1 Rural-Urban Migration: Basic Statistical Facts

Out of the 9608 individual samples in the survey, 2683 are currently (as of the time when the survey was conducted, and the same hereinafter) migrating in cities, and 938 are currently at home but have previously migrated to cities. Therefore, rural residents who have migration experiences constitute 37.69% of all rural population (*Table 14*). Moreover, of the 2683 current migrants in cities, 129 have permanently settled in cities and will not go back to home villages, constituting 1.34% of all individual samples. In the following analysis, I first focus on the current migrants in most parts of this section, and then examine the conditions of the past migrants in the *Return Migration* section, and finally examine the conditions of those who have permanently settled in cities in the *Permanent Migration to Cities* section.

Among the 2683 current migrants, 1948 are migrant workers (72.61% of all current migrants). Other groups that follow are students (17.85%), other dependents (5.33%), and pre-school children (4.21%) (*Table 15*). Obviously, migrant workers constitute the vast majority of the current migrants. Thus, in the following analysis, I emphasize on the migrant workers, and integrate the analysis on the dependents with that on the migrant workers.

Table 14 Basic Statistics: Current and Past Migrants, and Migrants Who Have Permanently Settled in Cities

	Individual Samples	Percent
All Samples	9608	100.00%

Previously Migrated but not Currently Migrating	938	9.76%
Currently Migrating in Cities	2683	27.92%
In Which Permanently Settled in Cities	129	1.34%
Sum of Current and Past Migrants	3621	37.69%

Table 15 Sub-groups by Profession among the Current Migrants

	Individual Samples	**Percent**
Migrant Workers	1948	72.61%
Students	479	17.85%
Pre-school children	113	4.21%
Other Dependents	143	5.33%
Sum – Currently Migrating Population	2683	100.00%

4.2 Migrant Workers: Basic Demographics

4.2.1 Age and Gender Structure

Among the 1948 migrant workers, 1258 are male (64.58%), and 690 are female (35.42%). The average age of the migrant workers is 34.9 (35.9 for the male and 33.0 for the female). A further analysis on the migration ratios of the migrant workers (i.e., the ratio between the number of migrant workers and all individual samples) by age and gender is shown in *Figure 10*. In general, most young rural residents (up to 55% at the 20s for both genders and 70% for the male) would migrate to cities for a job. Considering that students are not counted as migrant workers, but they also constitute a considerable part of the sample, the 55% migration ratio for the 20s is very high. As age increases, the overall migration ratio remains roughly steady until around the age of 35, and after that it steadily drops with age. After the age of 55, the migration ratio is generally very low (below 10%). Also, gender differences are huge at all ages, though the age structures for both genders show similar trends.

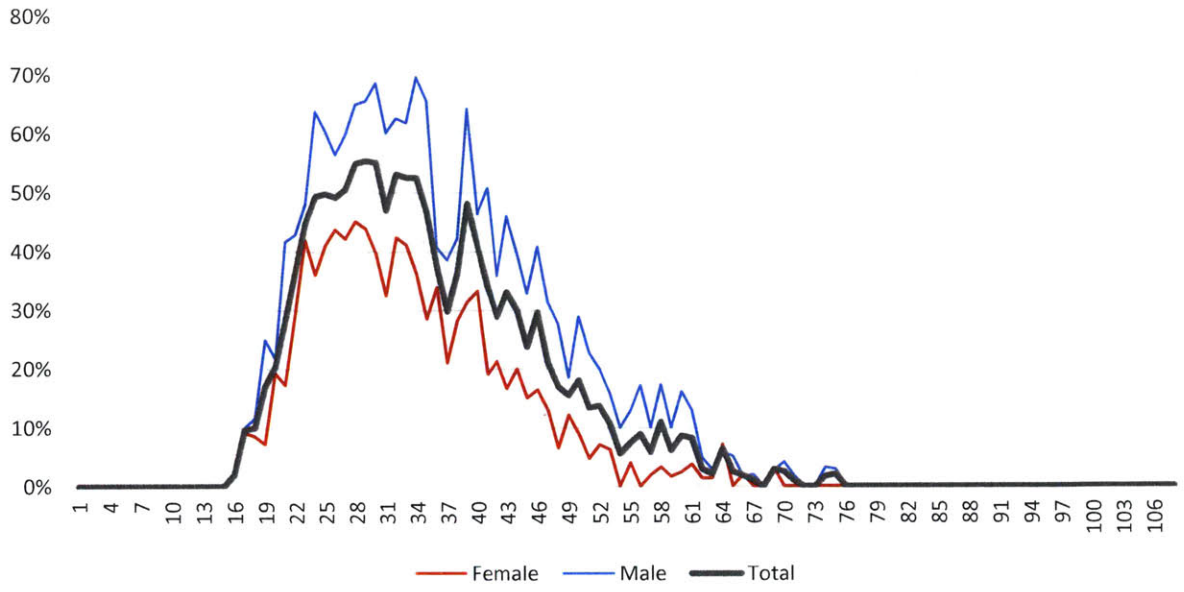

Figure 10 Migration Ratios of the Migrant Workers by Age and Gender

A longitudinal comparison with the results from previous surveys shows some basic trends concerning the age and gender structures of the migrant workers. First, as shown in *Table 16*, the average age of the migrant workers has been increasing steadily since early 1990s, and this also holds true for both genders. Second, concerning the gender structure of the migrant workers, figures in 1986, 1991, 1994, and 2004 are 21.8%, 23.7%, 30.4%, and 34.6% respectively (Research team from the Ministry of Agriculture, 1995; Research team from the State Council, 2006). As shown above, the figure in this survey is 35.42%[16]. Though the gender difference is still huge, the increasing percent of females among all migrant workers does imply a structural change in rural China where the traditional dichotomist gender roles are weakening, a trend discovered almost two decades ago (Hare, 1999).

Table 16 Comparison of the Average Age of Migrant Workers in Six Surveys from 1992 to 2015

Survey Year	Average Age of the Migrant Workers	Male	Female
1992	25.2		
1998	25.4		

[16] Note that these figures are for the migrant workers, such that they differ from the figures for all floating population as given in section 2.

2001	27.8		
2004	28.6		
2008	31.9	33.0	30.5
2014-2015 (This Survey)	34.9	35.9	33.0

Source: China National Statistics Bureau (2001, 2004); Wang, Tong, Su, Wei, & Tao (2011); Zhenwu Zhai & Chengrong Duan (2006); Zhuang (1995), and author's compilation of data from the 2014-2015 survey.

4.2.2 Education Structure

The education structure of the migrant workers in this survey is shown in *Table 17*. The average education level (years in school) is 9.47 for the migrant workers. In comparison, on the one hand, the figure for the workers staying in home villages is 7.01, substantially lower than the migrant workers. On the other hand, however, the figure for urban resident workers in the same year is 11.23[17], substantially higher than the migrant workers. For a longitudinal comparison, the average education level of the migrant workers in this survey is the highest as compared to that in all previous surveys, as shown in *Table 18*, though it is still not high in absolute terms. On balance, the education levels of the three groups of workers properly indicate their positions in the labor market, which I will show later.

Table 17 Education Structure of the Migrant Workers

	Individual Samples	Percent (Excluding Invalid Samples)
Uneducated	40	2.07%
Elementary School	318	16.42%
Secondary School	998	51.52%
High School	343	17.71%
College and Above	238	12.29%
Unknown	11	-
Sum	1948	100.00%

Table 18 Comparison of the Migrant Workers' Education Structures in Five Surveys from 1986 to 2015

Survey Year	Uneducated	Elementary School	Secondary School	High School	College and Above	Average Education Level (Years)
1986	34.50%	37.20%	21.20%	7.10%	0.10%	4.7

[17] Based on Table 3-16 in The 2015 China Yearbook of Population and Employment.

1992	10.30%	36.10%	40.80%	12.20%	0.70%	7.0
2005	3.50%	21.30%	64.90%	7.00%	3.40%	8.1
2007	3.30%	16.60%	59.60%	18.80%	0.70%	8.7
2014-2015 (This Survey)	2.05%	16.32%	51.23%	17.61%	12.22%	9.47

Source: Deng & Hu (2007); Geng (1989); Jian & Huang (2007); Zhuang (1995), and author's compilation of data from the 2014-2015 survey.

4.2.3 Other Demographic Structures

Among the migrant workers in this survey, 73.15% are married, a result conforming to those from other recent surveys, which fall typically within 60% to 70% (Deng & Hu, 2007; Hu et al., 2011). 96.20% of the samples are ethnic Han (the majority ethnic group), which is slightly higher than the national average (91.51% in 2010). 6.67% of the samples are members of the ruling China Communist Party (CCP), which is very similar to the national average. 0.87% of the samples are village council members; 4.52% used to serve in the armed forces; 4.67% have a non-rural Hukou status (*Table 19*). Overall, the joint distribution of these key demographic statistics is in accordance with the macroscopic statistics, and thus testifies the randomness of the sample.

Table 19 Various Demographic Statistics of the Migrant Workers

	Yes		**No**	
	Samples	Percent	Samples	Percent
Married	1425	73.15%	523	26.85%
Ethnic Majority	1874	96.20%	74	3.80%
CCP Member	130	6.67%	1818	93.33%
Village Council Member	17	0.87%	1931	99.13%
Military Service	88	4.52%	1860	95.48%
Non-Agriculture Hukou	91	4.67%	1857	95.33%

4.2.4 Household Demographics

Lastly, as the basic unit of the respondent in the survey is the household, and that one household may (and usually) have more than one migrant workers, the 1948 migrant worker samples are from 1264 households, which constitute 60.3% of the household samples. Some basic household demographic information are shown in Table 20 and Table 21.

A notable feature in the household demographics of the migrant workers is that these households tend to be not very big. Most households have two minor children or less, and 87.10%

of the households have 6 members or less, indicating that they have at most three generations of members. Further, 38.45% of the households have only 4 members or less, which means that they are likely the core families. The picture is somewhat different from the traditional one that Chinese families tend to be extended ones in which multiple generations of household members live together. However, some complications should be noted. In rural China, the formation of the core families is usually through the "household splitting" process, in which a grown-up and married child of a household is legally separated from the original household and forms a new one with his/her spouse (and children, if any), by establishing a new record in the household registration (Hukou) system. However, the new household may still physically live together with (or very close to) the original one, thus is still functionally related to the parent household. For example, the grand-parents may still help take care of the grand-children in the home village when the parents of the children are migrating in cities, even though the households are legally split. Therefore, the core families may provide incomplete household information when it comes to the functioning of the households, and may thus constitute improper subjects of analysis in some circumstances. In the survival analysis below, for example, I exclude the core families from the household samples such that only those with full household functions are examined.

Table 20 Distribution of Household Sizes of the Migrant Workers

Household Size	Household Samples	Percent
1	1	0.08%
2	28	2.22%
3	173	13.69%
4	284	22.47%
5	329	26.03%
6	286	22.63%
7	75	5.93%
8	41	3.24%
9	26	2.06%
10	14	1.11%
More than 10	7	0.55%
Sum	1264	100.00%

Table 21 Basic Household Demographics of the Migrant Workers

	Pre-School Children	Elementary and Secondary	High School and College Children	Seniors over 65

	School Children							
Persons	Household Samples	Percent	Household Samples	Percent	Household Samples	Percent	Household Samples	Percent
0	834	65.98%	801	63.37%	962	76.11%	775	61.31%
1	331	26.19%	355	28.09%	267	21.12%	278	21.99%
2	83	6.57%	90	7.12%	31	2.45%	204	16.14%
3	15	1.19%	14	1.11%	4	0.32%	6	0.47%
4	1	0.08%	4	0.32%	0	0.00%	1	0.08%
Sum	1264	100.00%	1264	100.00%	1264	100.00%	1264	100.00%

4.3 Migrant Workers: Migration Spatial-Temporal Patterns

The average length of migration (as measured by the years staying in cities) is 8.5 years in this survey (*Figure 11*). Compared to the results from some previous surveys (*Table 22*), though short city stay terms dominate in all surveys, they are becoming longer and longer. Also, it should be noted that the short stays may well reflect that the migrant workers' short migration history. As Duan et al. (2008) explained, because of the rapid increase of the total volume of migrant workers, at any given time point, most migrant workers should have joined the force within the past few years. Therefore, an indicator showing the percent of time a migrant worker has spent in cities since the first migration may constitute a better measurement of the temporal pattern of his/her migration. *Figure 12* presents such a measurement. It shows that once migrated to cities, the migrant workers actually tend to spend most of the time in cities. Specifically, the migrant workers before the age of 30 would generally stay in cities for more than 90% of the time since their first migration. The figure steadily drops with age but remains relatively high until the age of 45, when the migrant worker still spend an average of 70% of the time in cities.

Table 22 Comparison of Length of Migration (in Years) of the Migrant Workers in Three Surveys from 2005 to 2015

Years in Cities	0-5	6-10	11-15	16-20	More than 21	Average Years in Cities
2005	50.5%	30.7%	18.8%			-
2008	43.2%	26.7%	25.8%		4.3%	8.1
2014-2015 (This Survey)	46.57%	25.33%	12.69%	6.85%	8.55%	8.5

Source: Deng & Hu (2007); Hu et al. (2011); and author's compilation of data from the 2014-2015 survey.

Figure 11 Length of Migration (in Years) of the Migrant Workers

Figure 12 Percent of Time (in Years) Living in Cities since First Migration

Moreover, in each year, about 70% of the migrant workers would stay in cities for more than 10 months (*Figure 13*). Overall, from a pure temporal perspective, it is safe to conclude that the lives of most migrant workers are to a very large extent urbanized.

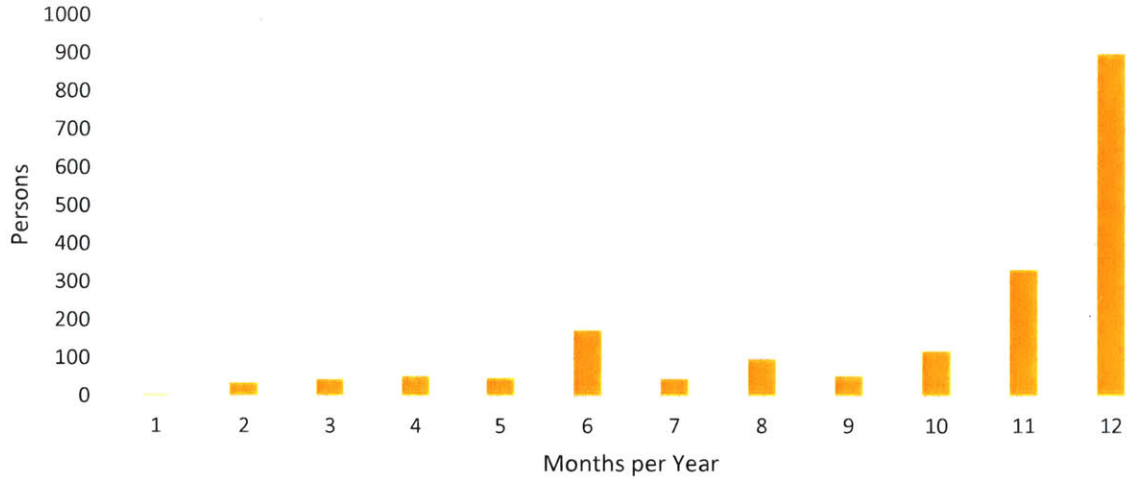

Figure 13 Months Staying in Cities in a Year of the Migrant Workers

Regarding the spatial pattern of the migration, the result in this survey inherits the long-time trend toward a longer migration distance (*Table 23*). In general, long-distance, cross-province migration constitutes more than half of all the migration, and short-distance, within-county migration only constitutes a fraction of all the migration. The Origin-Destination Map in *Figure 14* further shows that the mega-city groups along the eastern coast of China are the main destination for cross-province migration, and the inland cities attract mainly migrants from the same province. Overall, the results show no structural differences from those of previous surveys, implying a stable spatial-temporal pattern of China's internal migration over time.

Table 23 Comparison of the Migration Distance of the Migrant Workers in three Surveys from 2004 to 2015

Migration Distance	Within Township	Within County	Within Prefecture	Within Province	Within Country	Outside of the Country
2004	24%		25%		51%	0
2008	0.43%	1.33%	39.03%		59.21%	0
2014-2015 (This Survey)	1.90%	9.86%	12.02%	23.67%	52.40%	0.16%

Source: Hu et al. (2011); Research team from the State Council (2006); and author's compilation of data from the 2014-2015 survey.

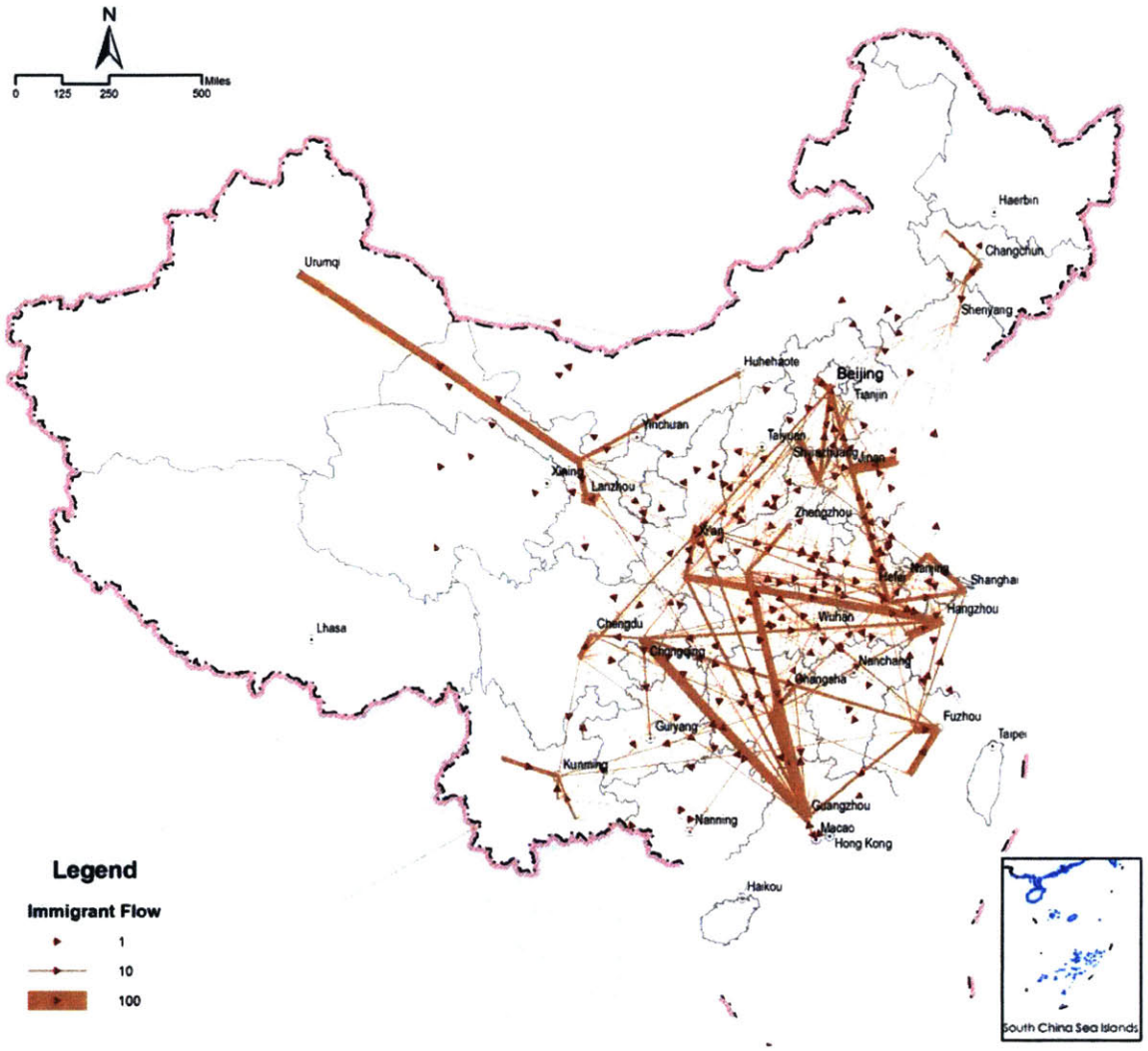

Figure 14 Origin-Destination Map of the Migrant Workers in the 2014-2015 Survey

4.4 Migrant Workers: Economic Activities

4.4.1 Employment

The migrant workers are predominantly employed in the non-agricultural sector, and only 25 out of the 1948 migrant workers are in the agricultural sector which only constitutes 1.28% of the employment among the migrant workers. For a comparison, the agricultural employment ratio for the rural residents who do not migrate is 54.22%. Alternatively, from a sectorial perspective, the migrant workers only occupy 1.12% of all agricultural employment in the survey, while they

occupy 50.83% of non-agricultural employment (*Table 24*). All in all, the employment structure of the migrant workers differs greatly from that of the non-migrant rural workers, but is similar to that of urban resident workers.

Table 24 Employment by the Sector for the Migrant and Non-Migrant Workers

	Individual Samples	Percent	Agricultural Employment	Percent	Non-Agricultural Employment	Percent
Migrant Workers	1948	32.41%	25	1.12%	1923	50.83%
Non-Migrant Workers	4063	67.59%	2203	98.88%	1860	49.17%
All Active Working Population	6011	100.00%	2228	100.00%	3783	100.00%

Further, I examine the stability of the migrant workers' employment. I define the employment stability index as the ratio between the time length since a migrant worker began his/her current job and the time length since the migrant worker's first migration. The result shows that the migrant workers tend to have rather stable jobs: 63% of them have never changed the job since first migrated as a migrant worker. Though somewhat surprising, the result is actually in line with those from other recent surveys. For example, Hu et al. (2011) show in a 2008 survey that 49% of the migrant workers never changed the job within the past five years, and only 6% of the migrants change jobs every year. In other words, the "floating population" is not as floating as they appear to be, and this is certainly a new characteristic of the work status of the migrant workers in the recent decade.

Table 25 Employment Stability of the Migrant Workers

Employment Stability	Individual Samples	Percent (Excluding Invalid Samples)
0.1	109	6.68%
0.2	130	7.97%
0.3	91	5.58%
0.4	75	4.60%
0.5	94	5.76%
0.6	24	1.47%
0.7	34	2.08%
0.8	28	1.72%
0.9	18	1.10%
1	1028	63.03%

Unknown	317	-
Sum	1948	-

4.4.2 Income

Individual Level

The migrant workers' average annual income from the migrant jobs is 36307 CNY[18], and the distribution of income is roughly Normal (*Table 26*). The average income is about 64.44% of the national average annual salary for urban employees in 2014, which is 56339 CNY[19]. This is certainly not a very high percent, and it inherits the same pattern from previous surveys, too. Some researchers argue that this reflects the labor market's discrimination against the rural Hukou holders (Afridi, Li, & Ren, 2015). However, considering that the migrant workers are generally less educated and are thus in a disadvantageous position in the labor market, the implication of the income gap may be complicated. For example, as shown in *Table 27*, the migrant workers with college and advanced degrees have a considerably higher income than those who without such endowments.

Table 26 Job Income Distribution of the Migrant Workers

Income from Migrant Jobs / 10000 CNY	Individual Samples	Percent (Excluding Invalid Samples)
Less than 1	136	8.77%
1-2	275	17.73%
2-3	392	25.27%
3-4	328	21.15%
4-5	216	13.93%
5-6	95	6.13%
More than 6	109	7.03%
Unknown	397	-
Sum	1948	-

Table 27 Education Levels and Income of the Migrant Workers

Education Level	Average Annual Income
Elementary School	31316

[18] CNY stands for the Chinese Yuan; 1 CNY roughly equals 0.15 USD as of 2014-2015 when the survey was conducted.

[19] Source: http://www.stats.gov.cn/tjsj/zxfb/201505/t20150527_1110630.html

Secondary School	32603
High School	32932
College	53818
Advanced Degrees	86625

Household Level

At the household level, the income status is similar to that at the individual level. The average household income for the rural households with migrant workers is 56593 CNY, and the per person household income is 11518 CNY, which is 116% of the national average per person income of rural residents in 2014 (9892 CNY), but only constitutes 40% of the national average per person income of urban resident households in 2014 (28844 CNY)[20] (*Table 28*, *Table 29*).

Table 28 Annual Household Income for the Rural Households with Migrant Workers

Total Household Income / 10000 CNY	Household Samples	Percent
Less than 0	67	5.30%
0-2	212	16.77%
2-4	246	19.46%
4-6	211	16.69%
6-8	137	10.84%
8-10	93	7.36%
10-12	51	4.03%
12-14	32	2.53%
14-16	19	1.50%
16-18	14	1.11%
18-20	15	1.19%
More than 20	36	2.85%
Unknown	131	10.36%
Sum	1264	100.00%

Table 29 Annual per Person Household Income for the Rural Households with Migrant Workers

Per Person Household Income / 10000 CNY	Frequency	Household Samples
Less than 0	67	5.30%
0-0.5	264	20.89%
0.5-1	285	22.55%

[20] Source: http://www.stats.gov.cn/tjsj/zxfb/201502/t20150226_685799.html

1-1.5	217	17.17%
1.5-2	127	10.05%
2-2.5	62	4.91%
2.5-3	38	3.01%
3-3.5	17	1.34%
3.5-4	20	1.58%
4-4.5	13	1.03%
4.5-5	12	0.95%
More than 5	11	0.87%
Unknown	131	10.36%
Sum	1264	100.00%

In terms of the source structure of the income, revenues from migrant jobs contribute a predominant part, constitute 72.45% of the migrant workers' total household income. Accounting for the 11.74% of household income from private businesses which are also operated in cities, as high as 84.19% of the total household income are from urban sources. In contrast, the income from agricultural products is nearly negligible (less than 3% of total household income). However, it should be noted that the 1460 CNY agricultural income is a NET revenue, i.e., sales of SURPLUS agricultural products after the rural households reserve the part for their own subsistence. Thus, a positive net agricultural income *per se* indicates that the yield from agricultural operations can in average satisfy a subsistence level of living. Lastly, other sources, mainly including government payments and transfers such as pensions and subsidies, contribute another 7115 CNY which constitutes 12.57% of total household income. The value roughly equals to the governmental subsistence living allowance for two persons in most part of the country, a reflection of the government's financial responsibility to the rural residents.

Table 30 Income Structure of the Rural Households with Migrant Workers

Source of Income	Value	Percent
Income from Migrant Jobs	41001	72.45%
Private Business Income	6646	11.74%
Agriculture Income	1460	2.58%
Farmland Subcontracting Income	371	0.66%
Other Sources (Governmental Compensation & Subsidies, Pensions, Gifts, etc.)	7115	12.57%
Total Household Income	56593	100.00%

4.4.3 Remittance

Though income from urban sources constitutes 84.19% of the migrant workers' total household income as indicated above, the migrants do not actually remit much of the income. In general, remittance on average only constitutes 20.45% of the total household income in the households with migrant workers, and 46.95% of the households do not receive any remittance at all (*Table 31*). However, at the individual level, there is a clear tendency that the older a migrant worker is, the more he/she remits money home. It is thus possible, as argued by some researchers, that the aim of migrating and working in cities is different for migrant workers of different ages (or generations) (Clark & Huang, 2006; Zhao, 1999). Unlike the older generation, for whom the income from migrant jobs matters subsistence, the younger generation typically has less household burdens and may migrate to cities for higher level needs, such as personal development or self-achievements.

Table 31 Remittance as a Percent of Total Household Income

Percent of Income Remitted	Household Samples	Percent (Excluding Invalid Samples)
0%	532	46.95%
10%	120	10.59%
20%	99	8.74%
30%	91	8.03%
40%	56	4.94%
50%	49	4.32%
60%	39	3.44%
70%	41	3.62%
80%	29	2.56%
90%	28	2.47%
100%	25	2.21%
More than 100%	24	2.12%
Unknown	131	-
Sum	1264	-

Figure 15 Remittance Ratios by Age

4.4.4 Consumption

The average annual household consumption is 57592 CNY, which is higher than the average annual household income. This is because, on the one hand, different households have different propensities of consumption, and thus despite the higher-than-average-income average consumption figure, the total value of consumption is still less than the total household income; on the other hand, many researchers have pointed out that China's rural residents tend to overstate their expenses while understate their income in surveys. In this survey, to avoid the problem, we had itemized the income so that it is difficult to understate it, but the consumption is much more difficult to itemize such that an overestimation is possible. Nevertheless, the problem does not seem serious, and would not affect other analysis such as the distribution of household consumption, either (*Table 32*).

Table 32 Distribution of Total Consumption Values of the Rural Households with Migrant Workers

Total Household Consumption / 10000 CNY	Household Samples	Percent (Excluding Invalid Samples)
Less than 1	12	1.35%
1-2	86	9.70%
2-3	138	15.56%
3-4	139	15.67%
4-5	110	12.40%
5-6	86	9.70%
6-7	69	7.78%

7-8	65	7.33%
8-9	44	4.96%
9-10	33	3.72%
More than 10	105	11.84%
Unknown	377	-
Sum	1264	-

One interesting aspect of the consumption habit of the migrant workers is the location where the consumption takes place. On average, the migrant workers allocate 55.07% of their total household consumption in cities (*Table 33*). This partly explains where the unremitted money goes, while the other part of the unremitted money probably becomes the migrants' capital assets, which I cover in the next section.

Table 33 Percent of Household Consumption Taken Place in Cities

Percent City Consumption	Household Samples	Percent (Excluding Invalid Samples)
0%	95	10.71%
0-10%	23	2.59%
10%-20%	30	3.38%
20%-30%	60	6.76%
30%-40%	56	6.31%
40%-50%	70	7.89%
50%-60%	85	9.58%
60%-70%	101	11.39%
70%-80%	165	18.60%
80%-90%	117	13.19%
90%-100%	85	9.58%
Unknown	377	-
Sum	1264	-

4.4.5 Capital Assets, Savings, and Investments

Overall Capital Assets Structure

We surveyed the households' cash savings, durable consumer goods, agricultural machines, private business capital, and housing investments, and let the respondents estimate the present value of each of the items. Based on the estimations, we are able to calculate the value of the

households' capital assets, with the former four items combined as the movable assets, and the housing properties as the fixed assets. It should be noted that this does not include the value of the households' farmland tenure as its value is difficult to estimate. Results show that the average value of the households' capital assets is about 353.7 thousand CNY, in which the fixed assets contribute 253.6 thousand CNY and thus constitute the predominant part (72% of all household capital assets) (*Table 34*). In rural China, 253.6 thousand CNY means at least a fair two-story detached house. This probably explains the use of the other part of the unremitted income.

Table 34 Distribution of Total Capital Assets Values of the Rural Households with Migrant Workers

Total Household Capital Assets Value / 10000 CNY	Household Samples	Percent (Excluding Invalid Samples)
0-5	126	10.24%
5-10	117	9.51%
10-15	155	12.60%
15-20	136	11.06%
20-25	156	12.68%
25-30	98	7.97%
30-35	104	8.46%
35-40	58	4.72%
40-45	45	3.66%
45-50	27	2.20%
More than 50	208	16.91%
Unknown	34	-
Sum	1264	-

A closer look into the structure of the household capital assets reveals further information on the households' allocation of income (*Table 35*). First, a popular theory states that the income from migrant jobs are mainly diverted to the luxurious, non-productive consumption, and thus the productive investment will be crowded out (Rozelle, Taylor, & DeBrauw, 1999). Concerning this, on the one hand, the result of the survey shows that the average value of agricultural machines in each household is only 2700 CNY, constituting 0.75% of all capital assets and 2.66% of movable assets. As the value is hardly worth any proper agricultural machines, it reflects an absolute lack of interest in agricultural investment, a phenomenon also found in other developing countries (De Haas, 2006). However, these studies generally attribute the reason of this phenomena to the lack of agricultural labor due to the out migration in rural places. I will show later that this is not the case in China, as the per person arable land is too little to accommodate any meaningful agricultural

investment, especially on machines. On the other hand, on the contrary, private business investment constitutes 8.75% of the households' capital assets and 30.91% of movable assets, much more than the agricultural investment, and is also more than the durable goods consumption which takes up 7.58% of the households' capital assets and 26.77% of movable assets. This contradicts the above mentioned theory, and shows that productive investment does constitute a considerable part of the households' expenses, though not necessarily in agriculture.

Second, the largest part of the movable assets is cash savings, constituting 11.23% of the households' capital assets and 39.66% of movable assets. The NELM theory goes that the cash savings play a role similar to the income insurance for the rural households (Lucas & Stark, 1985). The result seems to fit the theory.

Table 35 Structure of Household Capital Assets of the Rural Household with Migrant Workers

	Average Value (10000 CNY)	Percent	Percent of Movable Assets
Movable Assets	10.01	28.31%	100.00%
Cash Savings	3.97	11.23%	39.66%
Durable Consumer Goods	2.68	7.58%	26.77%
Agricultural Machineries	0.27	0.75%	2.66%
Private Business Capital	3.09	8.75%	30.91%
Fixed Assets (Housing Investments)	25.36	71.69%	
Total Capital Assets	35.37	100.00%	

Real Properties: Farmland and Homestead

Part of the households' capital assets that is neglected from the above analysis involves the farmland tenures of the households. Through a collective land ownership among the village members, the rural households are generally entitled some land rights. As shown in *Table 36*, only 12.18% of the households do not have farmland tenures. This may be because that the village collectives they belong to do not have any farmland at all, or that the members in the households are too young to receive a farmland tenure in 1998, after which year the reallocation of farmland among the village collective members have been frozen for 30 years in most part of the country. However, even for the households who do have farmland tenures, the tenures are generally very small: the average per person farmland area is only 0.07 hectares, and only 0.24% of the households have a per person farmland area of more than 1 hectare. Given China's national average per person arable land area of about 0.1 hectare, the result is not so surprising. The rather small

farmland tenures explain to some extent the low agricultural income, as well as the households' lack of interest in agricultural investment. Indeed, an absolute labor surplus as determined by the extreme scarcity of farmland in the rural places is the very reason for the emergence of the huge amount of China's migrant workers in the first place.

Despite the lack of arable land, the rural households' living conditions are to some extent fair. As shown in *Table 37*, most migrant households have a rather large resident house, with an average living area of 240 square meters for each household, which is very generous as compared to that of China's urban residents (32.9 square meters per person in 2012), and judging from the values of the houses (*Table 38*), most of the houses have good quality, too. Overall, the results mean that most migrant households actually have a decent living place, though the following analysis will show that these houses are predominantly located in the migrants' home villages, rather than the cities where they work.

Table 36 Distribution of per Person Farmland Areas of the Rural Households with Migrant Workers

Farmland per Person / Ha	Household Samples	Percent
0	154	12.18%
0.1	874	69.15%
0.2	163	12.90%
0.3	32	2.53%
0.4	18	1.42%
0.5	9	0.71%
0.6	4	0.32%
0.7	4	0.32%
0.8	2	0.16%
0.9	0	0.00%
1	1	0.08%
More than 1	3	0.24%
Sum	1264	100.00%

Table 37 Distribution of Resident House Areas of the Rural Households with Migrant Workers

House Size / m2	Household Samples	Percent
0	14	1.11%
50	17	1.34%
100	208	16.46%
150	195	15.43%

200	236	18.67%
250	155	12.26%
300	152	12.03%
350	68	5.38%
400	98	7.75%
450	31	2.45%
500	19	1.50%
More than 500	71	5.62%
Sum	1264	100.00%

Table 38 Distribution of House Values of the Rural Households with Migrant Workers

House Value/10000 CNY	Household Samples	Percent (Excluding Invalid Samples)
0	40	3.32%
5	153	12.69%
10	201	16.67%
15	170	14.10%
20	181	15.01%
25	85	7.05%
30	107	8.87%
35	38	3.15%
40	40	3.32%
45	33	2.74%
50	41	3.40%
More than 50	117	9.70%
Unknown	58	-
Sum	1264	-

Location of Housing Investments

As shown in *Table 39*, though the majority of a migrant workers' household investment is on housing, the investment, unlike the conditions for consumption, is predominantly diverted to rural places. Only a fraction (6.67%) of households would invest in real estate properties in cities. However, such investments constitutes 20.51% of the total real estate investment of the migrant households. This figure *per se* explains the reason for the migrant households not investing in urban real estate to some extent: the urban real estate is too expensive. Therefore, in most occasions, investing on real properties in the home village or in the city is an either-or problem for the migrant households. Indeed, for those who do invest in urban real estate, most of them do not invest in both locations; and for those who do make double investment, the investment clearly skews to the city.

In most cases, if a migrant worker invests in houses in cities, he / she would no longer invest in their old housing properties back in the home village. On balance, the analysis reveals that the migrant workers generally have a fair owned living place in home village, but not in cities. This fact has a profound implication in the permanent settlement intentions of the migrant workers, which I will discuss in the rest of the essay, and also in Essay 3.

Table 39 Percent of Real Estate Investment in Cities among the Rural Households with Migrant Workers

Percent of Housing Investment in Cities	Household Samples	Percent (Excluding Invalid Samples)
0	1007	93.33%
1% - 50%	7	0.65%
51% - 99%	30	2.78%
100%	35	3.24%
Unknown	185	-
Sum	1264	-

4.5 Migrant Workers: Other Living Conditions

Lastly, I study the non-economic aspects of the living conditions of the migrant workers' households. Specifically, I first examine the migration status of the migrant workers' family members, including spouses and children; then, I discuss the governmental welfare and public service coverage of the migrant workers and their households. In some sense, these facts present the degrees of lifestyle urbanization of the migrant workers.

4.5.1 Family Migration Status

As shown in previous discussions on the sub-groups among the migrants, migrant workers constitute the predominant part, indicating a very low propensity for migration of the non-working dependents along with their working household members. This is manifest in the migration status of the children in the migrant workers' households, as shown in *Table 40*. Out of the 702 surveyed migrant households with children, 507 (72.22%) do not bring any of their children with them when migrating; only 151 (21.51%) bring all of their children with them, while 44 (6.27%) bring some of their children with them.

As for the spouses, however, the situation is a little bit different in that not all spouses are necessarily dependents. Nevertheless, examining the migration status of the spouses of the migrant

workers still helps reveal the degree at which their lifestyle is urbanized, as the migrants migrating together with their spouses are apparently more likely to establish a stable livelihood in the cities. However, as shown in *Table 41*, the chance of such together migration is not high. Out of the 964 surveyed households with married couples, 326, or only 33.82% have both parties of the spouses migrating together in the same city, while 863, or 66.18% do not. Overall, the migrant workers' family migration status imply a rather low degree of lifestyle urbanization.

Table 40 Migration Status of Dependent Children of the Rural Households with Migrant Workers

Percent of Children Migrating with Parent (s)	Household Samples	Percent
0%	507	72.22%
25%	1	0.14%
33%	4	0.57%
50%	39	5.56%
100%	151	21.51%
Sum	702	100.00%

Table 41 Migration Status of the Spouses of the Migrant Workers

Spouses Migrating in the Same City	Household Samples	Percent
Yes	326	33.82%
No	638	66.18%
Sum	964	100%

4.5.2 Welfare and Public Service Coverage

Another important aspect of the lifestyle urbanization status of the migrant workers concerns the location where they register to be eligible for governmental welfare and public services. China's Hukou system requires one to register one's household in a specific place (i.e., the Hukou location), which is either of an urban or a rural status. In general, one can get access to governmental welfare and public services at the Hukou location either for free or at a subsidized price, and the quality of the benefits are associated with the rural/urban status of the location. At other locations, however, people's access to the benefits is either limited (for example, they should pay for the otherwise free or subsidized services) or non-existent at all. For the migrant workers, because it is not easy or desirable to change one's Hukou location (I will elaborate on this in Essay 3), this dual-track system means that they have to choose between the following two options: that only accepting rural-level

benefits in the home village (where the Hukou locates) and bearing the inferior quality and possible operational difficulties (for example, the rural health insurance program only covers the expenses at local hospitals, which means a migrant worker needs to travel back home to be covered whenever in need of health service), or that enrolling themselves in city-level programs at their own expenses. Therefore, the urban-level welfare and public service coverage ratios are also good indicators of the migrant workers' lifestyle urbanization. I examine three specific programs in this section: compulsory education, health care, and pensions, and they overall show very low degrees of lifestyle urbanization of the migrant workers.

Compulsory Education

In China, the 9-year compulsory education is free of charge if the student goes to a school at the Hukou location. Going to schools elsewhere is allowed but is at the student's own expenses. Thus, the migrant workers with school-age children face a dilemma: while leaving young school children in the home village is usually not desirable, bringing them to the cities for schooling could be expensive. Given the economic conditions of the migrant households, it is not surprising that most of them would opt not to bring the children to cities. Indeed, the result of the survey shows that only 79 out of the 565 (13.98%) compulsory-education-age students go to school with their migrant parents in cities, while the rest go to school in their home villages, despite that at least one of their parents are working in cities (*Table 42*).

Table 42 Compulsory Schooling Locations of the Children in the Rural Households with Migrant Workers

	City		Home		Sum	
	Individual Samples	Percent	Individual Samples	Percent	Individual Samples	Percent
Elementary and Secondary Education	79	13.98%	486	86.02%	565	100.00%

Health Care

As mentioned above, China has a dual-track public health insurance system, which is composed of three specific programs: The New Rural Cooperative Medical System, The Basic Medical Insurance System for Urban Employees, and The Basic Medical Insurance System for Urban Residents. The New Rural Cooperative Medical System is only open to rural Hukou holders. It charges a nominal annual fee, and covers basic as well as certain advanced medical services. The

Basic Medical Insurance System for Urban Employees is only open to urban employees with an urban Hukou. It has a much higher annual premium, but also provides much better medical services and wider coverages. The Basic Medical Insurance System for Urban Residents, despite the name, is open to everyone, regardless of the Hukou status. It is largely like The Basic Medical Insurance System for Urban Employees, with a slightly less annual premium and slightly weaker services and narrower coverages.

Rural residents, therefore, are eligible for both the rural program and the urban residents program. However, in practice, only 4.43% (56 out of 1264) of the migrant families have enrolled in the city resident program (*Table 43*).

Table 43 Enrollments in City and Rural Health Insurance Programs among the Rural Households with Migrant Workers

	City		Home		Sum	
	Household Samples	Percent	Household Samples	Percent	Household Samples	Percent
Health Insurance Program	56	4.43%	1208	95.57%	1264	100.00%

Pensions

Like the health insurance programs, China also has a dual-track public pensions program with three major programs, designed respectively for rural Hukou holders, urban employed Hukou holders, and urban Hukou holders in general. The urban programs charges a much higher annual premium, and yield a much generous pension, too.

Rural residents are again eligible for both the rural and urban residents programs. However, in practice, only 1.11% (14 out of 1264) of the migrant families have enrolled in the city resident program (*Table 44*).

Table 44 Enrollments in City and Rural Pensions Programs among the Rural Households with Migrant Workers

	City		**Home**		**Sum**	
	Household Samples	Percent	Household Samples	Percent	Household Samples	Percent
Pensions Program	14	1.11%	1250	98.89%	1264	100.00%

4.6 Return Migration

Besides the currently migrating workers, another notable phenomenon concerning the overall migration status is the existence of the returned migrant workers, who include 938 individual samples and are almost half the volume of current migrant workers. However, it should be noted that not all of them are permanent returnees. I focus on the migration status of these people in this section.

4.6.1 Basic Statistics on Return Migration and its Reasons

We asked the returned migrants whether they plan to migrate to cities again in the future, and only 337 out of the 938 returned migrants expressed definition willingness not to migrate again, and the rest all planned to do so sometime in the future. An analysis of the age structure of the return and permanent return migration shows the longitudinal pattern of such behaviors (*Figure 16*). Overall, return migration can happen at any ages, but permanent return migration tends to happen after the middle age, and most return migration are permanent after the age of 60.

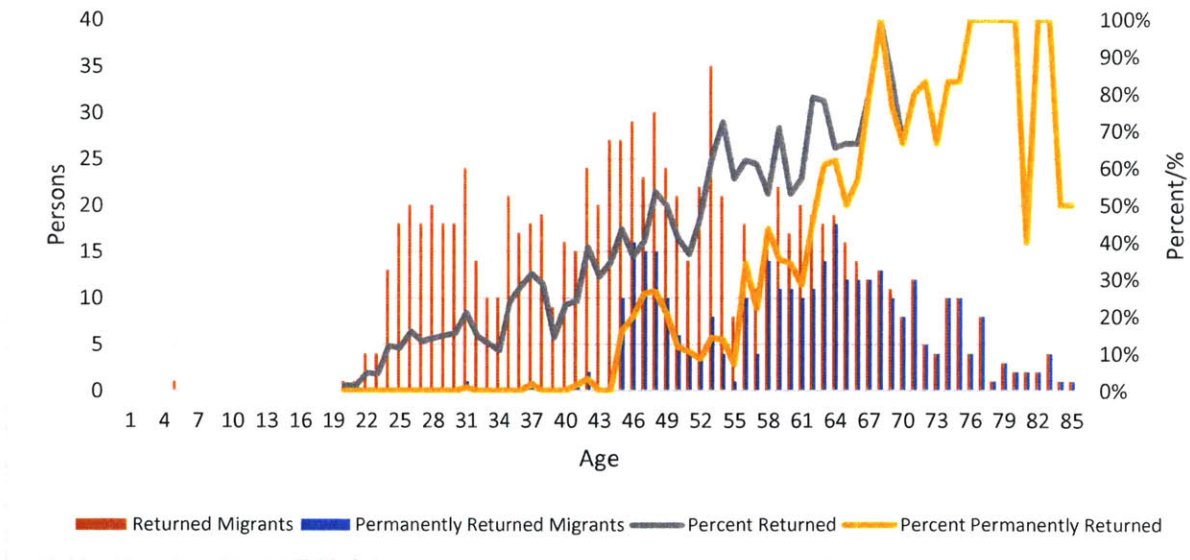

Figure 16 The Age Structure of Return and Permanent Return Migration

A further examination on the reasons for temporary and permanent return migration, as shown in *Table 45*, reveals the similarity and difference between the two types of return migration besides the age structure. It should be noted, however, that the reasons listed below are by no means mutually exclusive, so carefully analysis is needed to reveal the true patterns.

On the one hand, the life-cycle related reasons constitute the major difference. 13.32% of the temporary returnees had returned for marriage reasons, and only 1.06% of the permanent returnees had done so for that reason. In contrast, 24.30% of the permanent returnees had returned because of retirement, and the percentage is only 2.62% for the temporary returnees. Also, though the most popular reason for both groups, the needs for caring of household members, shows no significant difference in influential power between the two groups, a closer look would reveal that they actually have different implications. Interestingly, those who had temporarily returned for the reason are mainly mothers of small children in the household, who are generally young and expect to resume working again when the children grow bigger. In contrast, those who had permanently returned for the reason are mostly grand-parents of small children in the household, and they generally do not expect to migrate and work again due to their old age. Thus, this is still a life-cycle related difference, and these reasons combined show the importance of the life-cycle related concerns in influencing the migrants' migration and return migration behaviors.

On the other hand, other reasons, including the job-opportunity-related ones, health-related ones, and policy-related ones, all function similarly in each of the groups. Particularly, virtually no migrants elected the Hukou-related reason for both groups, and only a negligible portion of them elected the land-tenure related reason. Overall, this means that the policy-related reasons are almost irrelevant when it comes to the migrants' return migration behavior. I will elaborate on this interesting phenomenon in Essay 3.

Table 45 Reasons for Temporary and Permanent Return Migration

Reason for Return Migration	Temporarily Returned Migrants	Percent (Excluding Invalid Samples)	Permanently Returned Migrants	Percent (Excluding Invalid Samples)
Better Non-agricultural Job Opportunity at Home	65	14.19%	29	10.21%
Quit Previous Job for Intolerable Work Conditions	60	13.10%	22	7.75%
Laid off	51	11.14%	43	15.14%
Better Agricultural Job Opportunity at Home	32	6.99%	20	7.04%

Needs for Caring of Household Members	119	25.98%	63	22.18%
Too Old to Find Jobs	14	3.06%	18	6.34%
Sickness	38	8.30%	15	5.28%
Worries for Losing Land Tenure at Home	3	0.66%	2	0.70%
Unaffordable Living Expenses in Cities	3	0.66%	0	0.00%
Impossibility to Obtain a Hukou in Cities	0	0.00%	0	0.00%
Marriage	61	13.32%	3	1.06%
Retired	12	2.62%	69	24.30%
Other/Unknown Reasons	143	-	53	-
Sum	601	-	337	-

4.6.2 Seasonal Return Migration, or just Vacations?

One may note that we did not offer any seasonal reasons for the return migration in the survey, which, according to some studies as cited in section 2, could play an important role in causing the return migration in developing countries. However, in our survey, even the returnees electing "Other Reasons" seldom mentioned any of such reasons for their return migration. This hints that the seasonal factors may not constitute a major reason for return migration in China at all.

To further examine this, we include in the survey a series of questions asking the migrant workers whether they would return for certain seasonal (for example, in intense farming seasons) and other occasional (for example, major festivals and community events) reasons (*Table 46*). Results show that only a small portion (less than 20% on average) of the migrant workers would return to the home village for these reasons. Specifically, farming is hardly a concern, neither are most community events and festivals. The only exception is the Spring Festival, which is the most important festival in the Chinese culture, and nearly 90% of the migrant workers would return home for it. Nevertheless, the return happens just once a year, and in most occasions it only lasts a few weeks. Apparently, this should be better viewed as a vacation leave, rather than seasonal return migration. All in all, the seasonal migration pattern seems not prominent in the Chinese context. This may constitute a major characteristic that differentiates China's internal migration with those in other developing countries, which I will discuss later.

Table 46 Seasonal, Festival, and Community Events-Related Reasons of Return Migration

	Individual Samples	**Percent (Excluding Invalid Samples)**		

Returning Home Village at...	Always	Usually	Sometimes	Seldom	Unknown	Always	Usually	Sometimes	Seldom	Unknown
The Spring Festival	1437	48	43	81	339	89.31%	2.98%	2.67%	5.03%	-
The Qingming Festival	287	56	84	1179	342	17.87%	3.49%	5.23%	73.41%	-
Other holidays	335	91	130	1052	340	20.83%	5.66%	8.08%	65.42%	-
Wedding or funeral ceremonies in the village community	270	63	127	1147	341	16.80%	3.92%	7.90%	71.38%	-
Intensive farming seasons	221	43	47	1252	385	14.14%	2.75%	3.01%	80.10%	-

4.7 Permanent Migration to Cities

Lastly, 129 of the 1948 current migrant workers have permanently settled in cities, and the age structure of them is shown in *Figure 17*. Two peaks of permanent city settlement can be identified from the chart, with the first one from the 20s to early 30s, and the second one around the age of 45. I will show in later analysis that these two peaks seem to represent two different channels of the migrant workers' permanent city settlement.

While only constituting a fraction of the migrant workers, these migrants have considerably higher human capital endowments and wealth possessions. The average education level is 12.11 years, and the average annual household income is 111.9 thousand CNY. These levels are not only much higher than those for the average migrant workers, but are also higher than those for the average urban residents. In some sense, the two qualifications imply two channels for permanent city settlement: through higher education, or through accumulation of capital properties. I will elaborate on it in the survival analysis section.

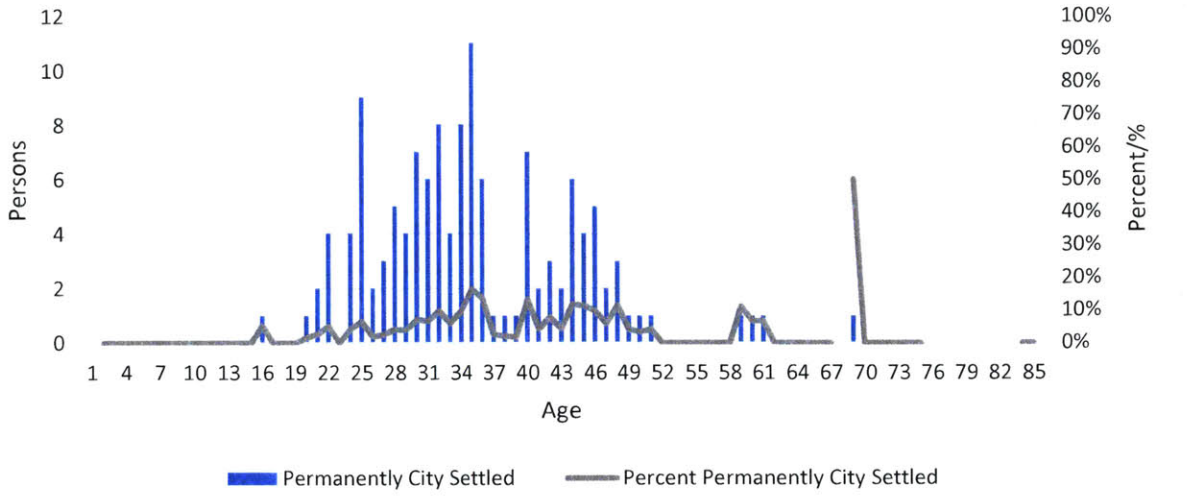

Figure 17 The Age Structure of Permanent Migration to Cities

4.8 Summary: the Unique Lifestyle of China's Migrant Workers and its Urbanization Implications

Overall, the above described statistical facts and behavior characteristics combined give rise to a unique lifestyle of China's migrant workers.

In general, a typical Chinese rural-urban migrant would be born and grow up in a rural place, but never have the chance to work in a farm. Rather, he/she would migrate to a city at an early age, and work there in the manufactural or service sector. Once migrated, the migrant would live in the city for a long period of time, and his/her job is generally stable. He/she would spend most of the time in a year in the city, and only go back to the home village once a year to celebrate the Spring Festival. While living in cities, he/she would spend the most part of their income in city-based consumption, and not remit much money to the home village.

All the behaviors above appear to suggest a rather urbanized lifestyle. However, there is another side in the migrant worker's lifestyle. While living in cities him/herself for most of the time, he/she usually leave the children, and sometimes even the spouse in the home village, and relies on the children's grand-parents to take care of them. Neither does he/she typically enroll him/herself in the city-based welfare and public service programs. Rather, he/she would join these benefit programs back home, even though this may mean operational difficulties. Lastly, most of the

migrant's investment is also made in the home village, very likely on the construction or purchase of a new resident house.

Further, we also know from the analyses that while some of the migrant workers will eventually settle permanently in cities, most of them seem more inclined to return migrate to their home villages after they retire. However, because the vast majority of the migrant workers in the survey have undetermined settlement status, these analyses are insufficient in making any conclusion on the final settlement status of the migrant workers. I leave this task to the survival analysis section.

Moreover, the findings in this section have enable me to conduct a comprehensive evaluation of the migrant workers' multi-dimensional lifestyle urbanization conditions. The result of the evaluation is presented in *Table 47* and *Figure 18*. Like in the macroscopic level as shown in Essay 1, China's microscopic urbanization condition, as measured by the multi-dimensional lifestyle urbanization conditions of the migrant workers, show rather dramatic contrasts between different dimensions. In general, the migrant workers' lifestyle is rather urbanized in demographic and economic terms, but only moderately or even poorly urbanized in physical and cultural terms, and almost not urbanized at all in the social dimension. This pattern is in accordance with the unbalanced picture of macroscopic urbanization in China as shown in Essay 1. Given that the migrants' partial urbanized lifestyle is the very microscopic cause of the unbalanced macroscopic urbanization condition, the result is not a surprising one.

Table 47 The Multi-Dimensional Lifestyle Urbanization Conditions of China's Migrant Workers

Dimension	Indicator	Sample Type	Mean	Comprehensive Indicator
Demographic	Percent of Time Spent in Cities	Individual	0.83	0.83
Economic	Percent of Migrants who are Non-agricultural Employed	Individual	0.99	0.91
	Percent of Income from Non-agricultural Sources	Household	0.84	
Physical	Percent of Consumption in Cities	Household	0.55	0.38
	Percent of Housing Investment in Cities	Household	0.21	
Social	Percent of Children who have Compulsory Education in Cities	Individual	0.14	0.07
	Percent of Migrants who Enroll in City Health Insurance Program	Household	0.04	
	Percent of Migrants who Enroll in City Pensions Program	Household	0.01	
Cultural	Percent of Households with Spouses in Same City	Household	0.34	0.24
	Percent of Households with Children in Same City	Household	0.28	

	Percent of Migrants who Celebrate the Spring Festival in Cities	Individual	0.11

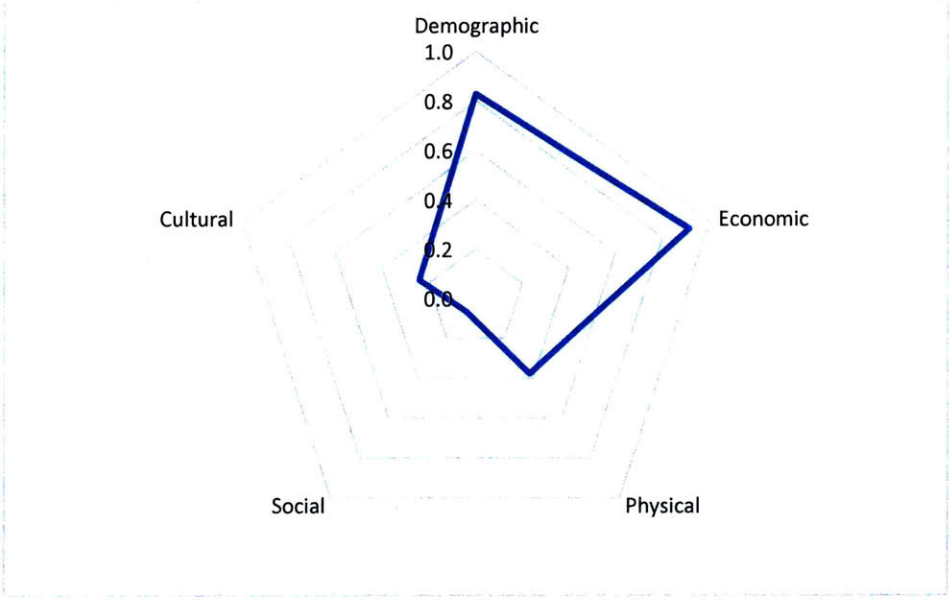

Figure 18 The Multi-Dimensional Lifestyle Urbanization Condition of China's Migrant Workers

5 The Longitudinal Migration Behavioral Patterns of the Migrants: A Survival Analysis

5.1 Results for Survival Process 1: Migration to Cities

Overall, one has 3794 individual samples for this survival process, and can thus calculate and plot the survival and hazard functions according to the settings described in section 3. Also, considering the rapid change of China's institutional environments in the past three decades, potential migrants of different age groups have faced different policy constraints in migration, and this may have influenced their migration behavior. Thus, I also plot the survival and hazard functions by different age groups, and perform log-rank tests between the results for different age groups. Age groups are classified every 10 years from the age of 16, and those above 66 are all classified as one group.

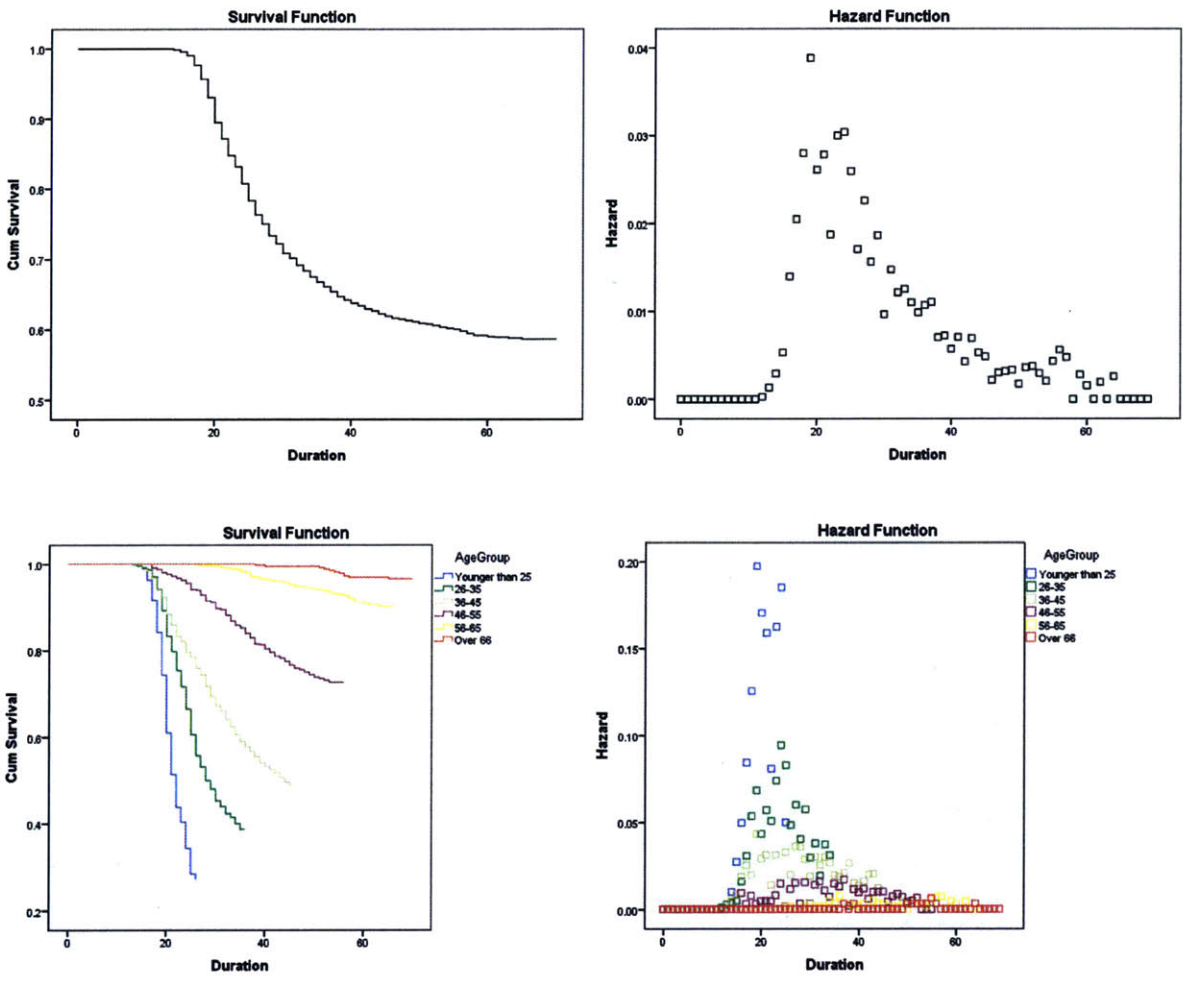

Figure 19 Survival and Hazard Functions for the City-Ward Migration Process

Table 48 Age Group Differences Log-Rank Tests for the City-Ward Migration Process

Age Group	0 (<=25)		1 (26-35)		2 (36-45)		3 (46-55)		4 (56-65)		5 (>=66)	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
0 (<=25)			106.099	0.000	239.863	0.000	500.833	0.000	663.523	0.000	346.842	0.000
1 (26-35)					77.250	0.000	324.063	0.000	529.692	0.000	282.738	0.000
2 (36-45)							122.124	0.000	355.755	0.000	214.417	0.000
3 (46-55)									98.727	0.014	86.386	0.000
4 (56-65)											11.968	0.001

The following conclusions can be drawn from the survival and hazard functions:

First, about 40% of the rural residents would migrate to cities in some point of their lives. However, the migration rates vary greatly between different age groups, and the difference is very significant in a statistical sense between any two age groups. Rural residents over the age of 66 seldom migrate throughout their lives, and those between 56-65 show only a slightly higher propensity for migration than the previous group with a final cumulative survival rate of less than 10%. In contrast, rural residents of other age groups show considerably higher propensity for migration, and the younger they are, the more likely they migrate. More than 70% of the rural residents in the 16-25 age group would migrate by the age of 25. Considering that the cutoff age of 25 for this group is still a very young one, those who have not yet migrated by this age may well start migrating later, as the survival functions for other age groups show, so as to yield an even higher propensity for migration for this group.

As I mentioned above, the increasing propensity for migration with the decrease of the age of the rural residents may have shown an institutional environment that has been increasingly less restrictive and even encouraging for internal population mobility. One may also note that there seems to exist a major tipping point of migration propensity around the ages of 50-55 (born 1960-1965), which is not likely to be a mere coincidence, as these people were around the ages of 20-25 in 1984, the year the first major reform to the Hukou system was carried out, allowing rural residents to migrate to cities for a job. Apparently, some of the young rural residents back then had seized the opportunity, as a peak around the age of 25 shows up in the hazard function for the age group of 46-55, indicating a surge of migration immediately after the reform.

Second, for the rural residents younger than 55, the survival and hazard functions also show that they tend to migrate early in their lives, and the peak age for migration also becomes younger for younger migrants: about 30 for those between 36 to 55, 25 for those between 26 to 35, and 20 for those younger than 25. This could be a reflection of the institutional change discussed above, or the endogenous change of the migrants' behavior, which I will examine in the hazard modeling in the next section.

5.2 Results for Survival Process 2

5.2.1 Permanent Return Migration

Overall, one has 1294 individual migrant samples for this process, and can similarly calculate and plot the survival and hazard functions and curves accordingly. Similarly, I also plot these

functions by age groups, which are classified the same way with the first process, and perform log-rank tests.

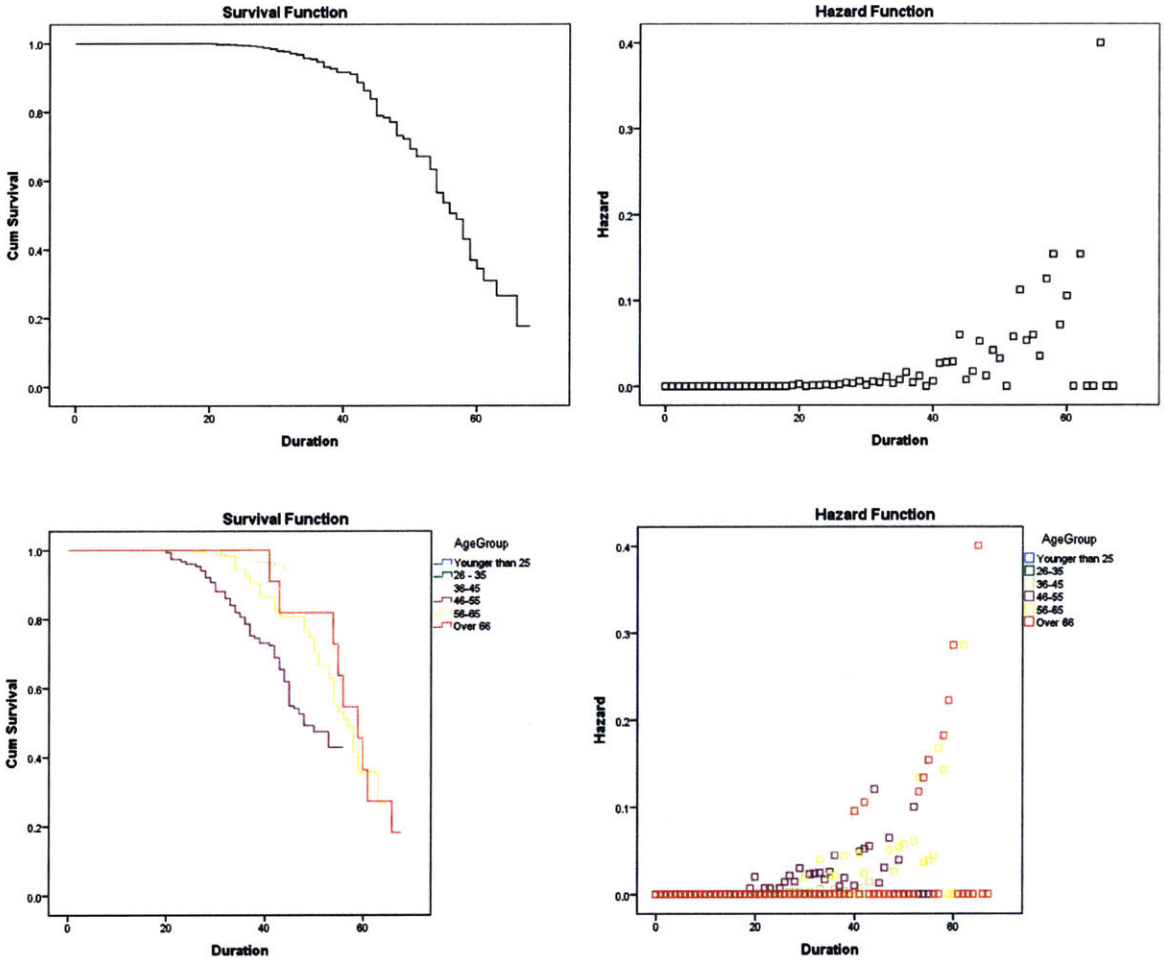

Figure 20 Survival and Hazard Functions for the Return Migration Process

Table 49 Age Group Differences Log-Rank Tests for the Return Migration Process

Age Group	0 (<=25)		1 (26-35)		2 (36-45)		3 (46-55)		4 (56-65)		5 (>=66)	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
0 (<=25)			N/A		N/A		N/A		N/A		N/A	
1 (26-35)					N/A		N/A		N/A		N/A	
2 (36-45)							84.212	0.000	13.135	0.000	2.889	0.089
3 (46-55)									6.089	0.014	2.509	0.113
4 (56-65)											0.070	0.791

The following conclusions can be drawn from the survival and hazard functions:

On the one hand, most migrants would eventually return to their home villages. By 70, about 80% of them would permanently return. Further, such return migration seldom happen before the age of 40, but the hazard would increase rapidly with age after the age of 45. These return migration patterns imply that most migrants tend to work in the cities until they cannot do so for some reasons. From the qualitative analysis in the previous section, we know these reasons may include retirement, or other household-related matters. For example, considering the general tendency of early marriages and childbirths among China's rural residents, many of them become grand-parents at the age of 45-50. Thus, the need for caring of the grand-children usually constitutes a major reason for the migrants to stop working and go back home.

On the other hand, age group differences concerning the return migration patterns show different patterns from the previous process.

First, none of the migrants in age groups 16-25 and 26-35 have permanently returned, such that they are all censored.

Second, the migrants in the oldest age group show none-different return migration patterns from those in the next two younger age groups. The test results are insignificant between the age groups of over 66 and 56-65, implying that the two groups have similar return migration behaviors. Given the fact that migrants in these two groups both belong to the so-called first generation of migrant workers after the country's Reform and Opening-up, whose migration generally had a temporary nature as many studies show, the result is not so surprising. Similarly, a none-significant test result shows up between the age groups of over 66 and 46-55. However, the difference between the age groups of 46-55 and 56-65 is again significant. Moreover, unlike in the previous process, the return migration behavior of migrants in these three age groups does not show consistent trends. These phenomena may have complicated reasons, which I also will discuss in the next section.

Lastly, the test results between the age group of 36-45 and any other age groups are significant, implying a different return migration behavior of migrants of these ages. I also leave it for later discussions.

5.2.2 Permanent City Settlement

As noted in section 3, this is a complementary survival proves to the permanent return process. Again, I plot these functions by the same set of age groups, and perform log-rank tests.

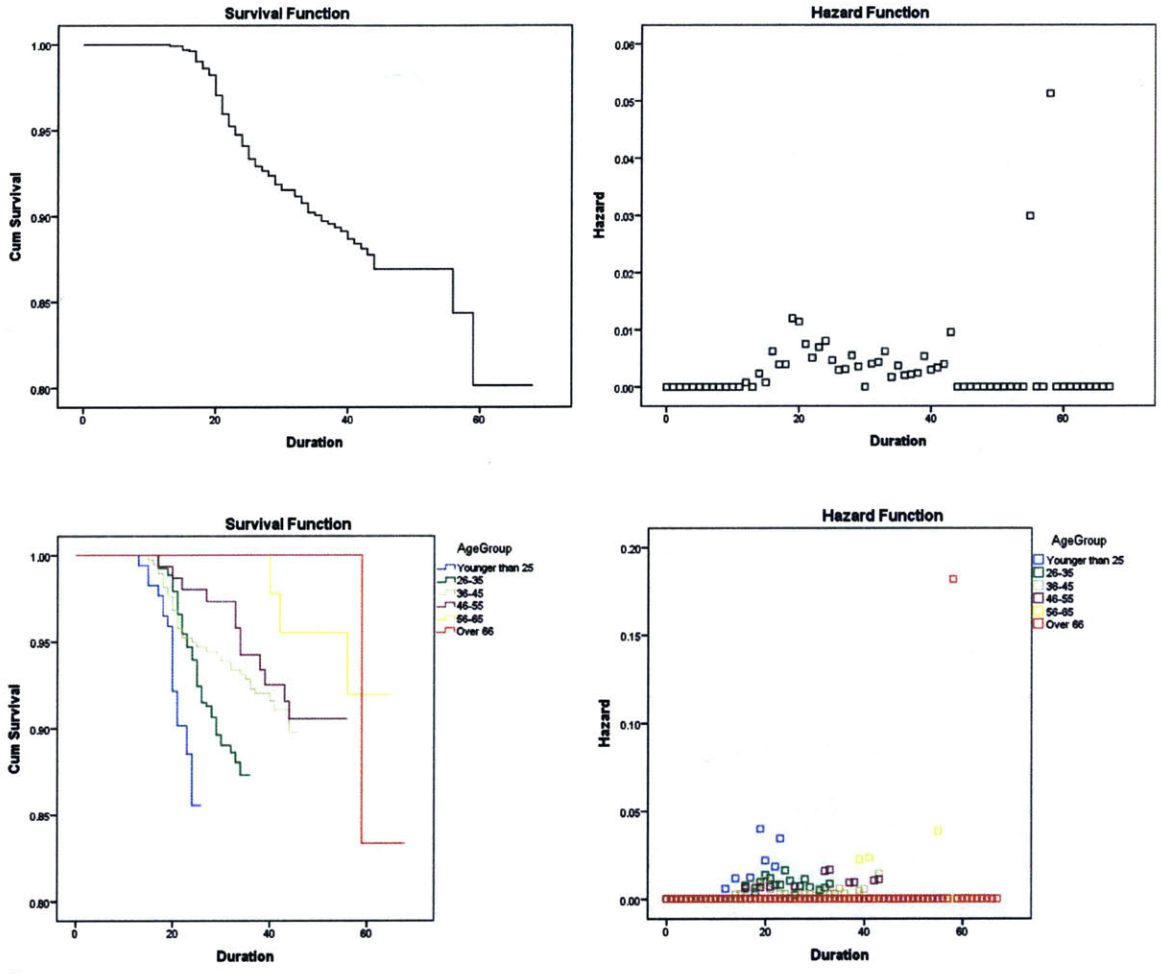

Figure 21 Survival and Hazard Functions for the Permanent City Settlement Process

Table 50 Age Group Differences Log-Rank Tests for the Permanent City Settlement Process

Age Group	0 (<=25)		1 (26-35)		2 (36-45)		3 (46-55)		4 (56-65)		5 (>=66)	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
0 (<=25)			6.510	0.011	10.530	0.001	14.172	0.000	7.732	0.005	1.646	0.200
1 (26-35)					5.476	0.019	6.166	0.013	6.815	0.009	1.450	0.229
2 (36-45)							0.203	0.653	1.894	0.169	1.123	0.289
3 (46-55)									1.272	0.259	1.047	0.306
4 (56-65)											0.029	0.864

The following conclusions can be drawn from the survival and hazard functions:

First, about 20% of the immigrants would eventually settle in cities permanently by the age of 70, and the hazard function clear shows two peaks of the permanent city settlement behavior. The first peak is around the age of 20, and judging from the qualitative analysis of the migrants' city settlement behavior, this peak is very likely to be related with educational causes, i.e., these are mainly the migrants who acquire a permanent city residency through getting the higher education (and then a formal and well-paid job). After the first peak, the city settlement hazard reaches a low point around the age of 30, and then increases again to reach a second peak after the age of 45. Again, from the qualitative analysis, I argue that the trend reflects the other permanent city settlement approach of the rural-urban migrants, the one in which the migrants accumulate capital properties (savings) and eventually obtain a formal owned place of living in the city with the savings such that they establish a permanent city residency. I will test these arguments in the hazard models in the next section.

Second, in terms of age-group differences, unlike what happens to the return migration process, a consistent trend with the increase of ages once again shows up. Specifically, on the one hand, the beginning age of the permanent city settlement behavior is lower for younger migrants. On the other hand, the younger an age group is, the higher the final cumulative hazard for permanent city settlement is, despite that younger ages mean shorter time for accumulating the hazard. All in all, this reflects the acceleration of the permanent city settlement behavior among the migrants.

Moreover, except for the age group of over 66 years old which only has 1 case of permanent city resident and thus has limited statistical meaning, the migrants in the two youngest age groups show statistically significantly different hazards with each of the other groups, while the migrants in the other three age groups show no different hazards between each other. The results may imply a changed mechanism for the migrants' permanent city settlement behavior with time, which I also examine in the hazard models in the next section.

5.3 Summary: the Migrants' Lifetime Migration Pattern

The above analyses accommodate the construction of a synthesized stream flow chart of the rural residents' urban-ward migration, return migration, and permanent city settlement behaviors (*Figure 22*). First, most rural residents would migrate to cities at some point of their lives, and such migration tend to happen early in their lives. The latest trends show that about 80% of the rural residents would migrate before the age of 35. Second, most of the city-ward migrants would eventually return migrate to their home villages, and the return migration surge after the age of 45.

Finally, a small portion of the migrants (about 20%) would permanently settle in cities, and the city settlement behavior has two peak ages, each accounting for about half the settlers, and probably representing different mechanisms of the permanent city settlement behavior.

It must be noted, however, that this stream chart is synthesized from migrants of different ages, and is therefore not necessarily representative of the migration behavior patterns of any specific generation of migrants. In fact, analyses on the differences between the age groups show increased chances of urban-ward migration and an accelerated process of permanent city settlement with time, as well as complicated time-related patterns of return migration. Behind the patterns is China's constantly evolving socio-economic and institutional environment, as well as a behavioral mechanism of internal migration to be revealed. I do the analysis with the hazard modeling below.

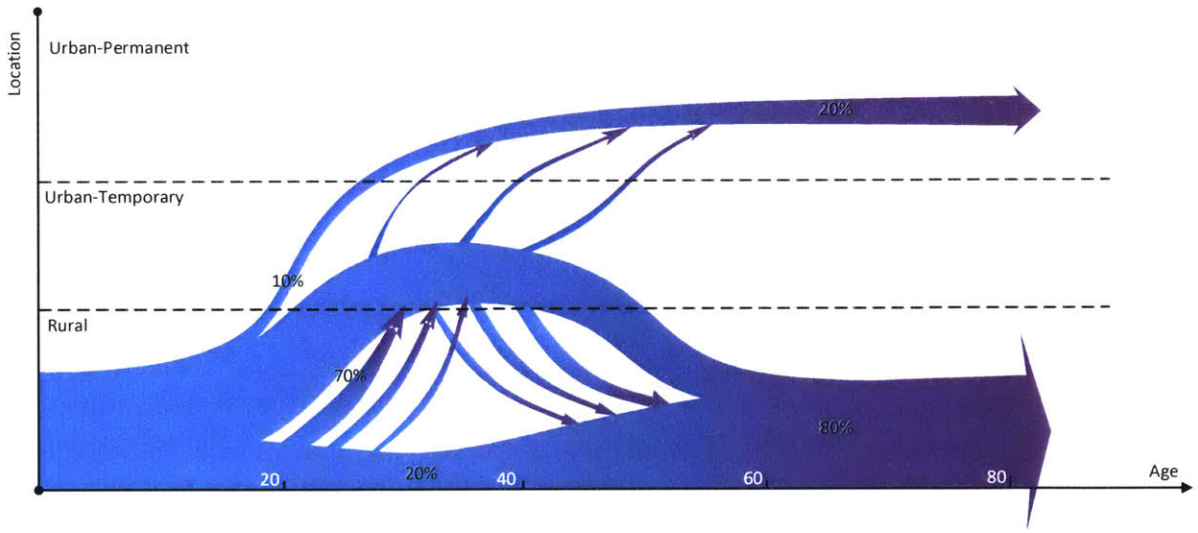

Figure 22 Stream Chart of China's Internal Migrant Flows

6 The Mechanism of the Lifetime Circular Migration Pattern: Hazard Models

6.1 Process 1: Migration to Cities

The results of the hazard model for survival process 1 are presented in *Table 51*. The first two columns present the regression results of all original independent variables, and the following four columns present the result of the proportionality test, which shows though most independent variables do satisfy the proportional hazards assumption, five of them, namely Education, Village Council Member, Military Service, and Home Town Income per Person and its squared term do not. Specifically, the regression coefficients for the last two variables are statistically significant, thus the coefficients can be interpreted as the variables' average effect on migration over time, which is acceptable in this study. However, the regression coefficients for the first three variables are not statistically significant, indicating that the effect of these variables may have opposite directions along one's lifetime such that they cancel each other out. To remedy the problem, I develop another model with three additional time (age) interaction terms of the three variables, and present the regression results in the last two columns[21]. All interaction terms, as well as their respective original variables are statistically significant in this model, thus fixing the non-proportionality problem.

Table 51 Regression Results: Survival Process 1 (Migration to Cities)

	Cox regression results (without interaction terms)		Test of proportional-hazards assumption (Schoenfeld Residual Tests)				Cox regression results (with interaction terms)	
Variable	b	Hazard Ratio	rho	chi^2	df	Prob. >chi^2	b	Hazard Ratio
Main Effects								
Male	0.816***	2.261	0.045	2.630	1	0.105	0.806***	2.239
Age	-0.107***	0.898	-0.010	0.100	1	0.752	-0.108***	0.898
Married	-0.276***	0.759	-0.010	0.130	1	0.719	-0.291***	0.748
Education	0.003	1.003	0.067	5.250	1	0.022**	-0.058**	0.944

[21] Another reason not to include the time-interaction terms of the home town income per person variable and its squared term is that the regression coefficients for such terms are very hard to interpret, while the "average effect" interpretation is good enough for the purpose of this study.

Ethnicity Majority	0.440***	1.552	-0.029	1.090	1	0.297	0.438***	1.550
Village Council Member	-0.043	0.958	-0.063	5.480	1	0.019**	1.360**	3.897
Military Service	0.046	1.047	-0.066	6.020	1	0.014**	1.187***	3.276
CCP Member	-0.111	0.895	-0.048	3.310	1	0.069	-0.070	0.932
Number of children in preschool (T)	0.006	1.006	0.001	0.000	1	0.972	0.003	1.003
Number of children in elementary or secondary school (T)	0.183**	1.200	-0.011	0.120	1	0.726	0.183**	1.200
Number of children in high school (T)	-0.144	0.866	-0.001	0.000	1	0.965	-0.178	0.837
Number of children in college (T)	-0.848	0.428	-0.022	0.590	1	0.443	-0.917	0.400
Number of grand-children in preschool (T)	0.079	1.082	-0.020	0.510	1	0.473	0.070	1.072
Number of grand-children in elementary or secondary school (T)	-0.018	0.982	0.004	0.020	1	0.882	0.005	1.005
Had built/bought house within 5 years (T)	-0.184	0.832	-0.008	0.070	1	0.792	-0.183	0.833
Parents Alive	0.263	1.301	-0.010	0.130	1	0.715	0.284	1.328
Number of Siblings	0.028	1.029	-0.011	0.140	1	0.704	0.035	1.035
Total Household Revenues/10000	0.086***	1.090	0.004	0.050	1	0.824	0.087***	1.091
Total Household Revenues/10000 Squared	-0.002***	0.998	0.001	0.000	1	0.950	-0.002***	0.998
Region=Eastern	-0.732***	0.481	0.014	0.280	1	0.597	-0.715***	0.489
Region=Middle	-0.167	0.846	-0.001	0.000	1	0.977	-0.151	0.860
Original Linguistic Zone=Mandarin Central	0.049	1.050	0.008	0.070	1	0.787	0.070	1.072
Original Linguistic Zone=Mandarin Jiang_Huai	0.296	1.345	0.027	0.910	1	0.341	0.308	1.361
Original Linguistic Zone=Mandarin Lan_Yin	-0.330	0.719	-0.002	0.010	1	0.940	-0.311	0.732
Original Linguistic Zone=Mandarin North	0.210	1.234	-0.008	0.080	1	0.782	0.220	1.246
Original Linguistic Zone=Mandarin Northeast	-0.480*	0.619	0.021	0.540	1	0.462	-0.490*	0.613
Original Linguistic Zone=Mandarin Southwest	-0.594*	0.552	-0.005	0.030	1	0.868	-0.571*	0.565
Original Linguistic Zone=Min Dialect	0.850***	2.341	0.029	1.150	1	0.285	0.869***	2.385
Original Linguistic Zone=Xiang Dialect	0.062	1.064	0.016	0.320	1	0.575	0.077	1.080
Home Town Income per Person/10000	-0.867***	0.420	-0.084	9.560	1	0.002***	-0.875***	0.417
Home Town Income per Person/10000 Squared	0.150***	1.162	0.073	7.370	1	0.007***	0.152***	1.164
Interaction terms with age								
Education x age							0.002**	1.002
Village Council Member x age							-0.049**	0.952
Military Service x age							-0.048**	0.953
N (valid samples)	3468						3468	
-2 Log Likelihood	18091.265						18071.323	

* Significant at .1 level

** Significant at .05 level
*** Significant at .01 level

The results indicate that a rural resident who is young, male, unmarried, and is ethnic majority is more likely to migrate than those with opposite endowments, of which age is the most important factor as its cumulative hazard may far outweigh that from other sources in the long run. Moreover, possession of greater social capital (being a village council member or having served in the armed forces) further increases one's chance to migrate, and the coefficients of the time-interaction terms of these two variables suggest that the age variable has a similar decreasing effect controlling for the migrants' social capital endowments. All these effects are in accordance with the empirical observations and are straightforward to interpret.

Education levels, however, have a negative effect on migration *per se*, while the time-interaction term has a slightly positive effect. The former is simply a reflection of the fact that most rural-urban migrants are relatively lowly educated, and the latter suggests that controlling for the education level, each one additional year of age slightly increases a rural resident's chance to migrate.

None of the household and life-cycle-related covariates are influential, except the one for the "Number of children in elementary or secondary school", which has a positive effect on migration. The result indicates that the migrant workers tend to leave their school-age children in the home village while they migrate to cities, a fact that, in combination with the result of the next hazard model, gives rise to a grand-parenting behavior which may in turn shape the overall "Circle of Life" pattern.

The two income-related variables both show quadratic effects. For the total household revenues variable, the tipping point is around CNY 215000, which is a relatively high level of household income, three standard deviations from the mean; for the home town income per person variable, the tipping point is CNY 28900, which is also a relatively high level of income three standard deviations higher than the average level.

Lastly, rural residents in the Eastern region (the most developed region in China) show lower hazards for urban-ward migration, and those from some specific linguistic regions show higher or lower hazards, apparently for cultural reasons.

Overall, the main takeout of the results is that rural-urban migration tends to happen when a migrant is from a relatively rich household in a moderately developed region, and when the

migrant possesses greater human and social capital endowments and has less household burdens to bear.

6.2 Process 2: Permanent Return Migration

The results of the hazard model for survival process 2 are presented in *Table 52*. Similarly, the result of the proportionality test is also shown in the next four columns. The test result shows that proportionality is perfectly held, such that no time-interaction terms is needed.

Table 52 Regression Results: Survival Process 2 (Permanent Return Migration)

	Cox regression results (without interaction terms)		Test of proportional-hazards assumption (Schoenfeld Residual Tests)			
Variable	b	Hazard Ratio	rho	chi^2	df	Prob. >chi^2
Male	-0.239	0.787	-0.060	0.470	1	0.495
Age	0.042***	1.043	-0.218	3.530	1	0.060
Married	0.800	2.225	-0.144	2.510	1	0.113
Education	-0.058*	0.944	0.032	0.120	1	0.732
Ethnicity Majority	0.675	1.965	0.062	0.590	1	0.444
Village Council Member	1.169***	3.217	-0.101	1.740	1	0.187
Military Service	-0.351	0.704	0.094	1.570	1	0.210
CCP Member	0.009	1.009	-0.034	0.170	1	0.681
Number of children in preschool (T)	-0.327	0.721	0.039	0.220	1	0.639
Number of children in elementary or secondary school (T)	-0.286	0.751	-0.010	0.010	1	0.923
Number of children in high school (T)	-0.193	0.825	-0.022	0.050	1	0.816
Number of children in college (T)	0.179	1.196	0.042	0.220	1	0.643
Number of grand-children in preschool (T)	0.810***	2.248	-0.100	1.380	1	0.241
Number of grand-children in elementary or secondary school (T)	-0.784	0.457	0.047	0.170	1	0.685
Had built/bought house within 5 years (T)	0.187	1.206	-0.076	0.750	1	0.386
Parents Alive	28.617	2.68E+12	-0.050	0.000	1	1.000
Number of Siblings	-1.265	0.282	-0.060	0.420	1	0.517
Total Household Revenues/10000	-0.066**	0.937	-0.067	0.380	1	0.535
Total Household Revenues/10000 Squared	-0.001	0.999	0.010	0.010	1	0.933
Region=Eastern	-1.331*	0.264	-0.080	0.860	1	0.355
Region=Middle	-0.909*	0.403	-0.063	0.530	1	0.465
Original Linguistic Zone=Mandarin Central	-0.396	0.673	-0.081	0.890	1	0.344
Original Linguistic Zone=Mandarin Jiang_Huai	0.096	1.101	-0.116	1.670	1	0.196
Original Linguistic Zone=Mandarin Lan_Yin	-1.019	0.361	-0.096	1.280	1	0.257
Original Linguistic Zone=Mandarin North	0.601	1.823	-0.082	0.870	1	0.350
Original Linguistic Zone=Mandarin Northeast	0.179	1.196	-0.021	0.050	1	0.816

Original Linguistic Zone=Mandarin Southwest	-0.838	0.433	-0.138	2.470	1	0.116
Original Linguistic Zone=Min Dialect	0.185	1.203	-0.011	0.020	1	0.892
Original Linguistic Zone=Xiang Dialect	0.159	1.173	-0.123	1.950	1	0.163
Home Town Income per Person/10000	0.946*	2.574	0.036	0.190	1	0.661
Home Town Income per Person/10000 Squared	-0.193*	0.825	-0.039	0.220	1	0.641
Home Contact Frequency	0.016	1.016	0.065	0.620	1	0.431
Home Contact Strength	-0.018	0.982	0.130	2.430	1	0.119
Ancestor Worship	-0.102	0.903	-0.077	0.840	1	0.361
Trans-Linguistic Zone Migration	-0.416*	0.660	0.107	1.460	1	0.227
N (valid samples)	1172					
-2 Log Likelihood	1173.860					

* Significant at .1 level
** Significant at .05 level
*** Significant at .01 level

The results indicate that the hazard for the permanent return migration behavior tends to increase with the age of a migrant, and that it is more likely to happen to those with lower education levels and a greater home village social capital (being a village council member).

The life-cycle-related effect is prominent, as having pre-school age grand-parents in the household will significantly increase a migrant's hazard of return migration. The result, combing with that from the first model showing that migrants tend to leave their school-age children home when they migrate, conforms to the widely reported grand-parenting behavior of China's rural households, and thus gives rise to a major reason of return migration of the migrants – to care for the grand-children in the home village when the parents of the children are migrating.

For the total household revenues variable, the quadratic effect vanishes, and the result shows that migrants from poorer households are more likely to return migrate, and vice versa. The economic development level of the home town, once again, shows a quadratic influence on return migration, with a tipping point of CNY 24507.

Lastly, migrants who migrate across the linguistic boundaries are less likely to go back home. If one views the cross-cultural migration as a proxy of a migrant's entrepreneurship, the result is not surprising.

Overall, the results seem to give rise to two different mechanisms of return migration for migrants with different human capital endowments. On the one hand, for most lowly educated, less skilled migrants, the typical life routine is to return home at a certain point of life when the household needs hands to care for the young grand-children. Given the potential decreasing yields

to labor relative to the migrants' age who are lowly educated and less skilled, this grand-parenting behavior constitutes an effective strategy for the household to maximize its welfare, as the NELM theory predicts. On the other hand, the highly educated migrants are much less likely to return migrate to home village, probably because they are more likely to enter the primary labor market and thus secure a job in cities that would facilitate a permanent city settlement.

7 Conclusion: the "Circle of Life" Migration Behavior Model of China's Internal Migrants

Combining the results from the survival processes and the hazard models which show the influencing factors of the migrants' migration behavior, I present the following life-path model of China's rural residents, which I call the "Circle of Life" model (*Figure 23*).

The three concentric circles represent rural, urban (migrant workers, or temporary residents), and urban (permanent residents) residential status, respectively (from outer to inner circles). These are the three living locations and resident status a rural resident or migrant worker may be in throughout the life.

The life trajectory of a rural resident starts from the baby icon in the left of the figure in the rural circle, and the life trajectory is finished through the following steps, in which there are two major bifurcating points:

1. The baby grows up and is ready to join the labor force, when he/she encounters life-path bifurcating point A:
2. a – if he/she is able to get higher education, he/she is very likely to directly become a permanent city resident after graduation (when he/she may find a formal job in the city); b – otherwise, he/she will migrate to a city, and start working as a migrant worker there, presumably in a less desirable or even informal job position;
3. (implicitly) he/she will get married at a certain point of life, most likely to someone who is also of rural birth;
4. (implicitly) the couple will continue to work in cities as migrant workers;
5. (implicitly) he/she will have child (ren);
6. In most occasions, the child (ren) will be sent to the home village, where the grand-parents take care of them;

7. The migrant worker continues to work in cities, and will encounter a second life-path bifurcating point sometime in his/her life, where a – if he/she accumulates enough savings to be able to secure a formal place of living in a city (most likely an owned apartment), the whole household will permanently move to the city; b – otherwise, he/she will return to the home village, where he/she has a guaranteed land tenure and shelter place;
8. Back at the home village, the former migrant worker will find him/herself becoming grand-parents, and thus will assume the responsibility of taking care of the grand-children while the children's parents are working in cities as migrant workers.

These steps form a closed circular trajectory of the rural residents' life paths, and the trajectory overall shows an overlapping-generations, iteration and filtration pattern of the rural residents' migration and settlement behavior. In each generation, a small portion (not necessarily the same for each generation) of the rural residents would become permanent city residents through either of the two channels (higher education and capital accumulation), while the rest of them would eventually return to the home villages after a period of stay in cities as temporary migrant workers. The pattern repeats in each generation of rural residents, and thus gives rise to China's macroscopic internal migration pattern, as shown in *Figure 22*.

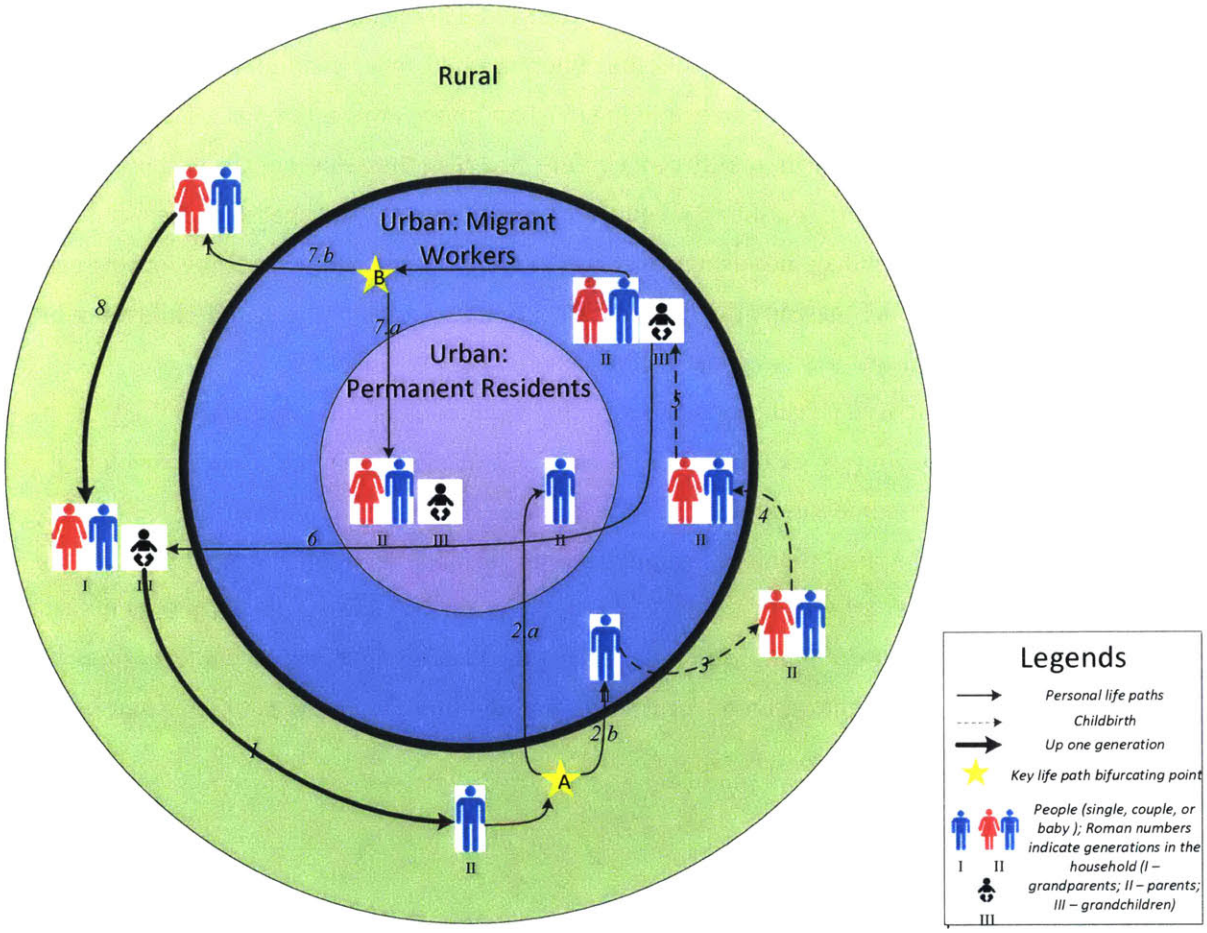

Figure 23 the "Circle of Life" Model

I further argue that such a lifestyle is a rather unique form of circular migration, which in many ways differs from that of most migrant groups in other countries as documented in the relevant literature. Simply put, on the one hand, with a two-way population movement between rural and urban places, it obviously does not fit the one-direction rural to urban migration model derived from the neoclassic migration theories. On the other hand, despite the common feature of circular population movement, China's migration pattern is still notably different from the forms of circular migration in other developing countries.

First, the movement of China's population is almost entirely internal, such that it differs from all international cases of circular migration, such as those happened between North America and Central American countries (Piore, 1979), and that between Western Europe and Eastern Europe and the Mediterranean countries (Cassarino, 2008). Unlike the international case, in which

institutional barriers such as visa or permanent residency requirements largely determine the temporary nature of the migration, China does not have such barriers that make the migration necessarily temporary. Yet, temporary migration is still pervasive in China, implying a different mechanism of population movement.

Second, though temporary or circular migration can also be found in the internal population movement in other countries, China's circular migration is still in many ways unique from these cases. First of all, it concerns the motivation of the urban-ward migration. Usually, the temporary migrants in developing countries try to support their families back home through their work in cities (and they thus remit a considerable part of income home (de Haan, 1999)), and do not plan to permanently settle in cities in the first place. On the contrary, China's floating population, especially the young migrants, migrate mainly for personal developmental purposes (and thus do not remit much money home), and they generally have idealistic wishes to settle in cities when they first join the migrant force. Second, concerning the temporal pattern of the circular migration, usually such migration involve relatively short-term and frequent or seasonal travels between origin and destination places, and it tends to end at a middle stage of the life-cycle (Constant & Zimmermann, 2011; Guest, 1999). However, circular migrants in China seem to have an opposite movement pattern. They stay in cities for a long period of time and spend most of the time in a year in the cities, with the annual home village-coming more like a vacation rather than return migration, and they tend to end their migration at the retirement age. These behaviors all in all give rise to a rural-urban circulation migration frequency of once per lifetime, which is very unique as compared to that in other countries. Lastly, it concerns the very reason why the migration is temporary. A common explanation for the temporary nature of migration in many developing countries is that employment is generally unstable for the rural-urban migrants, and this temporary nature of employment opportunities determines the temporary nature of the migration *per se* (Piore, 1979). However, the analyses above show that China's floating population have relatively stable jobs. Thus, rather than simply being forced to leave the city for loss of employment opportunity, China's migrant workers make the return migrate decision under complex social and economic constraints, and they do so to realize the maximized welfare for the whole household.

These differences, furthermore, help explain why the unbalanced urbanization in China has not seem to hamper the country's economic development, while that in many other developing countries has. Many researchers have pointed out that the temporary and circular migration behavior may have complicated urbanization and developmental implications. It may have resulted in the "structural underdevelopment and massive poverty" in both urban and rural places (Cordell

et al., 1996; Deshingkar & Farrington, 2009) under certain circumstances, or it may facilitate "a process that lowers the cost of development" and thus contributes to an healthy urban and economic development under others (Elkan, 1967; Stretton, 1983). The key, however, is whether the migrants circulate because they have to for subsistence, or they actively opt to do so for developmental purposes and are successful in doing so. China's case, obviously, belongs to the latter. Nevertheless, it should also be noted that the migrants' inability to permanently settle in cities may have well inflicted China's underdevelopment of a mature civil society, which may have negative urban development implications in the long run. In this sense, the migration and urbanization model of China includes both lessons to learn from and pitfalls to avoid.

Lastly, I would like to reiterate that the analysis in this essay focuses exclusively on the floating population's endogenous endowments and their influence on the migration behavior, in which the policy-related factors actually work as the hidden assumptions of the analysis. Thus, though the "Circle of Life" model presents a seemingly rational life-cycle living location decision-making process, it should be noted that the decisions are made under a specific institutional environment. Then, what is the role of the institutional environment? I leave the treatment for the questions for Essay 3.

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Essay 3

Institutional Suppression or Free Choice: Variations in Hukou Policies, Land Ownership Institution, and Impact on Internal Rural-Urban Migration in China

1 Introduction

Rural-urban migration has been a crucial process which has deeply shaped today's urban-dominant world since the beginning of modern urbanization in the sixteenth or seventeenth centuries (Grauman, 1976), and history has witnessed different forms of such population movements in different times and also in different parts of the world. Roughly, one can identify two types of rural-urban migration patterns: the one-direction migration, and two-way migration. From the former arisen the neoclassic theory of population migration, which predicts that as there is an income or expected income difference between rural and urban sectors in the modern economy, rural population tend to move to urban places for a higher yield to their labor (Harris & Todaro, 1970; Lewis, 1954). The model constitutes the standard model for population movement in the early industrialized countries in the eighteenth and nineteenth century (Piore, 1979), and also explains the population movement patterns in countries which had undergone urbanization later, such as the Latin American countries(Elkan, 1967). However, in the urbanization of many developing countries after the Second World War, such as in South Africa, India, Indonesia, and Thailand (Collinson, Tollman, Kahn, Clark, & Garenne, 2006; Gidwani & Sivaramakrishnan, 2003; Goldstein, 1993; Hugo, 1982), and also in the population flows between developed and developing countries in the same period (see Piore, 1979), rural-urban population mobility has shown an alternative pattern. Featuring a two-way population flow this pattern allows for temporary migration behaviors and even circular movements between origin (usually rural) and destination (usually urban) places (Skeldon, 2012).

China's internal rural-urban migration, however, as demonstrated in Essay 2, appears to fit none of the models above. In general, it features a circular movement between a rural origin and an urban destination that couples with the migrants' life-cycle rhythms, and thus I call it the Circle of Life pattern. This pattern is unique in many senses. On the one hand, with a two-way population movement between rural and urban places, it obviously does not fit the neoclassic model. On the other hand, despite the common feature of circular population movement, China's migration pattern is still notably different from the forms of circular migration in other developing countries. First, the movement of China's population is almost entirely internal, such that it differs from all international cases of circular migration, such as that between North America and Central American countries (Piore, 1979), and that between Western Europe and Eastern Europe and the Mediterranean countries (Cassarino, 2008), thus implying a different mechanism of migration with these cases. Second, compared to their counterparts in other countries with circular internal

population movements, China's migrant workers still show different behaviors such as relatively stable jobs, long-term city stays, infrequent rural-urban circular travels, and much less remittance, all of which imply a rather urbanized lifestyle. Nevertheless, most of China's migrant workers still opt to return to home villages in a certain point of life, thus forming a unique circular life routine.

Why, then, do China's rural-urban migrants go back to the home village, even if they have had an entire career in the city? Essay 2 has partly revealed the logics behind the migrants' behavior: grand-parenting is necessary for maximizing the utility of the whole extended household for most migrant workers who have limited education and work skill endowments, and grand-parenting requires circulation. There is, however, a remaining problem in the explanation: why must the children and their grand-parents live in the home village, rather than in the city where their parents work? Based on different views on the role of the institutional factors, which in China include an overall Marxist-socialist structure and many specific policies, two opposite explanations have been developed to answer this question. One stresses China's notably unique institutional environment and argues that it has a suppressive nature on internal population mobility, and thus explains the migrants' observed reluctance to a permanent urban settlement as the direct result of many institutional constraints, especially the Hukou (household registration) system. I thus call it the Institutional Suppression Explanation. The other, on the contrary, states that despite the institutional factors, the observed low level of the migrants' permanent urban settlement mainly reflects the migrants' free choice, thus I call it the Free Choice Explanation.

Specifically, the Institutional Suppression Explanation takes many approaches to stress the relevance of a suppressive institution in determining the migration behavior of China's rural-urban migrants. First, China has been notably under-urbanized, especially before the 2000s, as compared to countries of similar development conditions (Konrad & Szelenyi, 1977; L. Zhang, 2004); also, Chinese cities are too small, as judged by the rank-size distribution of China's urban system (Au & Henderson, 2006). The researchers attribute these signs of under-urbanization to the country's suppressive rural-urban migration policies, especially the Hukou system, and argue that it is because of the existence of such suppression that permanent urban-ward migration for China's rural residents is made difficult, thus leading to an overall under-urbanization. Further, numerous studies have shown that the Hukou system prevents the rural-urban migrants to get access to certain urban welfare and public services, thus revealing the specific mechanism through which the institutions suppress the migrants' permanent urban settlement (Chan, 1994; Fan, 2002; Solinger, 1999). Lastly, from an international comparative perspective, some scholars compare China's Hukou system to South Africa's apartheid policy, and show that the latter, apparently also a

suppressive institution to migration, had also created a circular population movement(Collinson, Tollman, Kahn, Clark, & Garenne, 2006), which may share a similar mechanism that also gives rise to China's circular migration.

In contrast, the Free Choice Explanation argues that first, mathematical modeling on the migration process have proven that in a purely theoretical sense, circulation behavior does not necessarily require a restrictive institution to emerge (Constant, Nottmeyer, & Zimmermann, 2013; Djajić & Milbourne, 1988). Second, in practice, the circulation behavior can be found in countries without a Hukou system or equivalent institutions, such as India or Indonesia (Gidwani & Sivaramakrishnan, 2003; Hugo, 1982); and non-circular migration can occur in countries with suppressive policies on internal mobility, such as Ethiopia (de Haan, 1999). In other words, a suppressive institution constitutes neither a sufficient nor a necessary condition of the circular migration behavior. Oppositely, studies have shown how the circulation behavior can emerge from the migrants' free choice, in which the spontaneous circulation behavior performs as a mechanism that lowers the cost of development for all parties in urbanization (Elkan, 1967; Fan, 2008; Zhu, 2007). Lastly and more importantly, though it is tempting to explain China's low level of urbanization with institutional reasons, and it might also be true that the Hukou system has indeed discriminated against rural residents, there is no direct empirical evidence that can establish a causal relationship between the discrimination and the migrants' suppressed urban settlement intentions or behavior, nor has the Institutional Suppression Explanation managed to present any research based on counterfactual constructions that can reveal such a causal relationship. In fact, quite to the contrary to what the Institutional Suppression Explanation would predict, empirical evidence from some case studies shows that when offered the opportunity to get an urban Hukou (and thus acquire a permanent city residency), the migrants seem not interested at all (T. J. Wen, 2002; Yan, 2012; Zhu & Chen, 2010).

On balance, one thing that is made clear through the debate is that circular migration can occur with or without a suppressive institution. In this sense, simple comparative studies shed little light on the question in debate, nor do any other indirect approaches, and one needs direct empirical evidence to establish a causal relationship between China's institution and the migrants' non-settlement in cities. Concerning this, fairly speaking, though it is evident that the Institutional Suppression Explanation failed to do so, the Free Choice explanation does not offer any direct evidence, neither. Though the empirical evidence citied above concerning the effect of a relaxed urban Hukou acquisition restriction on the migrants' urban settlement intentions appears

persuasive, they are after all isolated cases and are by no means representative of the general situation. Both explanations are flawed in this sense.

Further, both explanations suffer from two more important problems. First, it concerns the timeliness issue. One should note that China's Hukou system has always been evolving(Chan, 2009, 2015), and that the content of the Hukou system in one period could be by far different from what it used to be in another. Therefore, what constitutes a satisfactory explanation for the previous era, even with perfect theoretical and empirical grounds, may render outdated today. Unfortunately, due to the apparent lack of recent basic research on the topic, which I will elaborate in the next section, most literature on the Hukou system only cover the institution's status at least ten years ago, and thus cannot possibly offer any insights on its latest development and impacts. Second, in explaining China's institutional environment, both explanations emphasize almost exclusively on China's Hukou system, while largely neglect other institutions that are closely related to the Hukou system and may also weigh in when it comes to the migrants' migration and urban settlement behaviors. The land ownership policy, among others, is a possible influential institution, but its relevance is either neglected as in the case of most studies, or understated such as in the study by Young (2013b). Again, without the coverage of other relevant institutions, one cannot possibly understand the overall institutional impact on the migrants' behavior.

In light of these concerns, I argue that a satisfactory explanation of China's unique internal rural-urban migration pattern requires a careful study on the latest development of both the Hukou system and its relevant institutions, especially the land ownership policy in the first place, and also an empirical examination on the direct effect these institutions have on the migrants' urban settlement behavior. Such treatments may not directly answer the question of "why circulate" as it requires utility calculation at various stages of the migrants' life with respect to their living locations, but are surely a critical step toward a full explanation, and thus I take them as the task for this study. Specifically, I answer the following research questions: how have China's institutions, specifically the Hukou system and the land ownership policy, influenced the migrants' urban settlement behavior? And further, is the observed low level of the migrants' permanent urban settlement a direct consequence of China's suppressive institutions, or is it out of the migrants' free choice, or is there a third explanation?

To answer the questions, as a first step, I conduct a thorough documentation on the evolution, and especially the recent development of China's Hukou system and the related land ownership policy, such that the institutions' current functions can be clarified. I conclude that on the one hand,

the current Hukou system has to a large extent got rid of the once-existent institutional barrier for the migrants' permanent urban settlement, and thus generally has no significant direct influence on the migrants' urban settlement behavior. On the other hand, the land ownership policy, contrary to the Hukou system, discriminates in favor of the rural residents and migrant workers, and has played a more important role in shaping the migrants' migration and settlement behaviors. All in all, I argue that China's current institutions still do matter when it comes to the migrants' choice of living locations. However, instead of suppressing the migrants' permanent urban settlement, the institutions function more like a "social security" mechanism for the rural residents and facilitate their rational choice of living locations. Hence, the observed circular pattern of migration reflects the result of the migrants' institution-bound rational choice, with the land ownership policy functioning as the major effective institution.

I support the argument with two empirical models, using first-hand data drawn from two nation-wide, large-sample surveys on the migrants and rural households' living conditions in 2008-2009 and 2014-2015. First, I develop a quantitative model studying the determinants of the migrants' urban settlement intentions, as well as examining the effect of a major recent reform, which relaxed the urban Hukou acquisition restrictions in most small and middle-sized cities, on the migrants' settlement intentions in these places. The result shows an urban settlement decision-making mechanism that conforms the existing theories of labor migration, thus proving it is a rational process. Moreover, the result also shows no significant difference in the migrants' settlement intentions between the cities with urban Hukou acquisition restrictions and those without such restrictions, implying a non-significant impact of the Hukou system on the migrants' urban settlement behavior.

Next, to examine the relevance of the land ownership policy, I construct another quantitative model using the same dataset that covers the rural residents' willingness to trade their farmland tenure for urban Hukou-equivalent benefits. The result indicates that the farmland tenure rights function just like a social security mechanism for the rural residents, such that the rationale for the institution-bound rational choice model is made complete.

Overall, I show how China's choice of public policies has influenced the migrants' behavior, and has thus given rise to the unique internal rural-urban migration pattern. Though the reasoning conforms to existing theories on urbanization and population migration, the conclusion, with the emphasis on the "social security" function of the land ownership policy, somewhat challenges the traditional view, and proposes a new model for regulating internal rural-urban migration through

alternative public policy combinations. Through a comprehensive evaluation of the institutions and their effects from both practical and moral perspectives, I show that though the new model has complex moral implications, it may be practically desirable in certain stages of a country's industrialization and urbanization, as is manifest in the successful development models of East Asian economies. The model therefore constitutes a meaningful public policy reference for countries of comparable development conditions. However, I also show that the model may render unsustainable in the long run, and briefly discuss its future reform options, with which I conclude the essay.

The rest of the essay is organized as follows. In the second section, I conduct a thorough documentation on the evolution of the Hukou system, and analyze the implication of its recent development on China's internal rural-urban migration. I also briefly cover China's land ownership policy and its relevance in internal rural-urban migration in this section. Based on these analyses and through a review of relevant literature, I present a theoretical framework for understanding China's internal rural-urban migration in Section 3, and propose three testable hypotheses. Then, in Section 4, I describe the data used in the empirical models, and construct two quantitative models to test the hypotheses. I present the results and discuss their implications in Section 5. Finally, I conclude the essay with a summary of the findings and an evaluation of their practical and moral implications, and also suggestions for future reforms in Section 6.

2 China's Hukou System: A Documentation and Analysis

For over four thousand years, literally all governments in China have consistently maintained a household residency registration system of various forms. These systems evolve from a simple population registration as recorded in the "oracle bones records" in the 16th century B.C., to the *Baojia* (mutual responsibility) system in the Qin dynasty in the third century B.C., and to the *Huji* laws in the first modern republic in the 20th century(Wang, 2005), and they serve a range of administration purposes including population census, taxation, policing, and, of course, control of internal rural-urban migration. To some extent, the modern Hukou system, which I study in this essay, is but a continuation of this ancient legacy. However, it has also been influenced by foreign institutions from the very beginning of its establishment, and has served a far wider range of administrative purposes compared to its ancient counterparts. Thus, China's Hukou system is ancient, unique, and influential, and it naturally becomes one of China's most famous social institutions (Chan & Zhang, 1999).

The uniqueness and importance of the Hukou system have naturally drawn academic attention. With China's opening-up in 1978, research on the interesting institution had become possible in the English-speaking world. Early study efforts mainly concerned documentation of this complex system, and the logic of its establishment and evolution in the country's pre-reform era (1949-1978). As a most prominent example, Cheng & Selden (1994) present a detailed study on the origin, evolution, and social implications of the Hukou system in the 1950s, and demonstrate its crucial role in China's making of a centrally planned economy in the early days of the People's Republic. Later research on the Hukou system had evolved with the institution itself, which had changed in form and content to adapt China's transition to a market economy after the 1978 reform. For example, Chan & Zhang (1999) provide a thorough documentation of the new trends in the Hukou system in the 1980s and 1990s.

A problem in the Hukou studies, though, is that given the rapid change of the Hukou system itself and the time required to perform any serious academic inquiry, that the latter is lagged behind the latest status of the Hukou system has always been the usual case. For example, Banister (1991) stated that "Without (Hukou) registration, one cannot establish eligibility for food, clothing, or shelter, obtain employment, go to school, marry, or enlist in the army". In fact, at the time when the study was published, the claim was out of date concerning the food, clothing, shelter, and employment parts, as reforms in late 1980s had disconnected one's eligibility for these items with one's Hukou. Fairly speaking, one might see the few-year lag no big problem if the lag were always but a few years. However, curiously enough, with the Hukou system's accelerated evolution in the 2000s, research attention on the topic in the English-speaking world has been fading away, leaving a larger and larger research lag. Indeed, according to Chan (2015), there are only two books dedicated to the topic of China's Hukou System within the past decade (Wang, 2005; Young, 2013a), and these two books actually do not cover much of the status of the Hukou system in the new millennium. Particularly, in July 2014, China announced a major reform on the Hukou system, which is regarded by Chan (2015) to include "major moves purporting to fix the Hukou system". Such a significant event deserves careful academic coverage. However, for apparent reasons, there is virtually no research (in the English language) on this topic available yet. As a result, as Chan (2015) had properly pointed out, most existing literature on the Hukou system is to some extent out of date, and this understudied state could be particularly misleading for researchers who cover relevant topics but are not familiar with the Hukou system per se and thus can only rely on the outdated information concerning the system. A rather typical example on how much the bias toward the Hukou system could be is presented in a 2008 comment, which claimed that "migrants

come back to the countryside first and foremost because the Hukou system does not allow them to settle permanently in the city", and also "migrants ... have a piece of land in the countryside that they can cultivate but do not own and thus cannot sell"(Froissart, 2008). Neither of the arguments were wrong or meaningless, though, for reasons I will show below.

To remedy the situation, I conduct a brief yet complete documentation of the Hukou system in this section. Because the status of the Hukou system prior to China's opening-up in 1978 is already well documented and understood in the English literature, the focus of my documentation lies on that after 1978, with a special emphasis on the 2014 reform. Moreover, based on the documentation, I analyze the institution's implications on China's internal rural-urban migration and the migrants' urban settlement behavior. The documentation and analysis in this section serve as the basis for further analysis in the next sections.

2.1 The Origin and Strengthening of the Hukou System in the Centrally Planned Economy Era (1951-1978)

The modern Hukou (household registration) system, introduced in the 1950s, appears a natural continuation of China's historical residency registration institutions. However, coupling with the newly established centrally planned economy system, the Hukou system had also borrowed from the Soviet passbook system of social mobilization(Dutton, 1992), and had gradually evolved to become a crucial element of a dual social and economic structure dichotomizing rural and urban places, which, in turn, served a developmentalist state strategy in that era.

2.1.1 Hukou as a Modern Socialist Institution: Key Policy Milestones

July, 1951: the Establishment of the Urban Household Registration System

In July 1951, the Ministry of Public Security announced *The Interim Regulations of Urban Household Registration Management*[22]. This is the first regulation concerning residency registration management since the founding of the People's Republic in October 1, 1949, though it only concerns urban population. The regulation asks any urban resident who wishes to move apply for a change-of-residence permit, thereby forming a mechanism to monitor urban population residency and movement, which some argue is for the first time in China's history(Cheng & Selden, 1994).

[22] 《城市户口管理暂行条例》

June, 1955: the Establishment of the Complete Household Registration System

In June, 1955, the State Council issued *The Order for the Establishment of the Household Registration System*[23]. In some sense, it is an expansion of the urban system described above. It orders both urban and rural areas to establish and maintain a regular household registration system, marking the formal beginning of the modern Hukou system.

1963: Division of Rural and Urban Hukous

In 1963, the Ministry of Public Security began to distinguish between two categories of Hukous: the rural Hukou and the urban Hukou, with a criterion of whether the Hukou holder is included in the centrally planned food rationing system, a privilege exclusive to the urban residents. This marked the debut of the rural/urban dual social and economic structure, the purpose of which I will discuss in the summary of this section.

August, 1964: Strict Prohibition on Rural to Urban Hukou Status Transfer

In August 1964, the State Council approved the Ministry of Public Security's *Provisional Regulations on the Transfer of Hukou Status*[24], which, with some exceptions, strictly prohibits the transfer of Hukou status from rural Hukous to urban Hukous, and also strictly prohibits that from small town Hukous to large city Hukous. This policy completes the last step of the establishment of the dual Hukou structure. Since this point and until 1978, the dual structure is rigidly maintained (the State Council reiterated the prohibition several times in this era and finally removed the adjective "Provisional" from the regulation title in November, 1977[25]), and the percent of urban Hukou holders in the population had been almost fixed or had even dropped in this period. Indeed, urban Hukou holders constitutes 16.56% of the population in 1964, and only 15.82% in 1978, indicating the absolute lack of mobility between the two Hukou statuses.

2.1.2 The Social Function and Influence of the Hukou System in the Centrally Planned Economy Era

Throughout the centrally planned economy era, the Hukou had been increasingly connected to the provision of various kinds of welfare and public services, including food rationing, subsidized medical care and education, retirement benefits, etc., such that one's Hukou finally became one's

[23] 《关于建立经常户口登记制度的指示》

[24] 《公安部关于处理户口迁移的规定(草案)》

[25] 《公安部关于处理户口迁移的规定》

only certificate of access to these benefits. However, the content of these benefits differs greatly between urban and rural places. By dichotomizing urban and rural Hukous, the state assumed responsibility to the provision of the benefits in the urban places, but to a large extent left it to the village collectives themselves in the rural places, which, in most occasions, equals non-provision of the benefits (Banister, 1991). Further, as noted above, a strict rural to urban Hukou status transfer restriction applied, so as to directly control the number of population enjoying urban Hukou-related benefits. Needless to say, this constitutes an obvious discrimination against the rural population, and it is well received that the aim of maintaining such a dual structure is to extract resources from the agriculture sector so as to support the urban industrial development in a most efficient manner, a strategy under an overall state-driven industrialization policy and tailored to the country's conditions of great rural labor surplus and capital shortage (Chan, 1994; Cheng & Selden, 1994; Wang, 2005). All in all, originally merely a means of accommodating population statistics, the Hukou system had finally evolved to a de facto institution to suppress population mobility(Young, 2013a). The situation was maintained until the country's Reform and Opening-up in 1978.

2.2 The Reform of the Hukou System in the Reform and Opening-up Era (1978 – 2014)

In November 1978, the ruling Communist Party announced the country's major policy overhaul "the Reform and Opening-up". Since then, China has transformed from a centrally planned economy into a largely free-market one, and has made spectacular economic progress through the transformation. Like other institutions, the Hukou system has also been transformed to adapt to this new era, firstly becoming more flexible(Cheng & Selden, 1994), and later totally changed in form. Like in the previous era, a series of policy milestones appropriately documents the transformation.

2.2.1 October 1984: Relaxation of Urban Hukou Acquisition Restrictions in Townships on a "Self-Supplied Food Grain" Basis

In October 1984, the State Council issued the *Notice on Rural Hukou Holders' Acquisition of Township Hukous*[26], which states that rural Hukou holders who have been working in townships should be allowed to acquire a local urban Hukou, provided that they have a "fixed residence" and a "long-term" job there. However, in acquiring an urban Hukou, they must abandon their land tenure

[26] 《国务院关于农民进入集镇落户问题的通知》

rights at home villages, and are also responsible for their own food supply as the still functioning urban food rationing system does not cover them. Due to the many restrictions, the new policy only received moderate popularity. However, it marked the first step toward the relaxation of urban Hukou acquisition restrictions.

2.2.2 June, 1997: Beginning of Hukou Reform Experiments in Small Towns and Cities

In July, 1997, the Ministry of Public Security announced the *Experimental Plan for Reforming the Hukou Management System in Small Towns and Cities*[27]. It states that rural Hukou holders who have been living and working in small towns and cities for at least two years, and also meet certain criteria such as the ownership of an urban living place can apply for a local urban Hukou, on condition that they give up their farmland tenure rights attached to their original rural Hukous.

This is the beginning of the reform on the urban Hukou acquisition policy. By limiting the reform in small towns and cities only (here, the term "small towns and cities" was technically defined as county-level cities, county seat cities, towns, and townships), and also by setting up relatively strict criteria for rural to urban Hukou status transformation, the reform had taken a cautious move from a retrospective perspective. However, it was the first time since the establishment of the dual rural-urban Hukou system when a general relaxation of the urban Hukou acquisition restrictions was performed, with terms of Hukou status transfer clearly stated. It hinted to more audacious reforms in the following few years.

2.2.3 July, 1998: Beginning of Hukou Reform in Large Cities

In July, 1998, the State Council approved the Ministry of Public Security's *Suggestions on Resolving certain Prominent Problems in the Current Hukou Management Practices*[28]. In the *Suggestions*, recognizing that the urban Hukou acquisition system should be reformed, the central government delegates the power of making detailed implementation plans of Hukou reform to local governments. Therefore, once again, the State opted to experimentalism in the reform of a major institution. Moreover, the *Suggestions* did not explicitly limit the scope of the Hukou reform within small towns and cities, so large cities were also entitled to perform such reforms.

In the following decade, local governments of cities of various sizes had actively proposed and performed Hukou reforms in their own jurisdictions under the *Suggestions'* general guidelines. The

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[27] 《关于小城镇户籍管理制度改革的试点方案》

[28] 《国务院批转公安部关于解决当前户口管理工作中几个突出问题意见的通知》

first of such reforms took place on March 16, 2001, in Huzhou, Zhejiang Province, which is a middle-sized, moderately developed city in a marginal location of the Yangtze River Delta. The reform set a series of criteria for acquiring a local urban Hukou, including "stable" residency, "stable" employment, education, professional skills, etc. These criteria had then been adopted by many other cities as the threshold for local urban Hukou acquisition. Besides, many cities had created an "express lane" for local urban Hukou applicants who had purchased real properties or had made significant investment in the city, or are with special academic proficiency or professional skills.

These local policies had been evolving, too. Local governments oversaw the pace of increase of population with local urban Hukous, and adjust the urban Hukou acquisition threshold accordingly. For example, some very large cities, such as Beijing, Shanghai, and Guangzhou, had assigned unlimited quota for those who had purchased real properties in the city to obtain a local urban Hukou. However, with demands of local urban Hukous through this channel surging, the "House Purchase for Local Urban Hukou" programs were suspended one city after another after only a few years of implementation, and they were replaced in most occasions by a point-based urban Hukou acquisition system. However, in many smaller cities, the "House Purchase for Local Urban Hukou" programs had continued to effect until the 2014 reform (detailed below).

2.2.4 2000 – 2001: Acceleration of Hukou Reform in Small Towns and Cities

In June, 2000, the State Council announced Suggestions on Promoting the Healthy Development of Small Towns and Cities[29]. And then in March, 2001, the Ministry of Public Security announced Suggestions on Promoting the Reform on the Hukou Management System in Small Towns and Cities[30]. These two moves marked the acceleration of the Hukou reform in small towns and cities by substantially lowered the threshold for acquiring urban Hukous in these places. In general, two criteria were established for eligibility of acquiring urban Hukous in small towns and cities:

- One must have a legal and stable residency in town or city; and
- One must be stably employed, or have a stable source of income to maintain a reasonable living standard in town or city.

Compared to previous policies, a notable change is the removal of the two-year residency restriction for eligibility for an urban Hukou. Eligible rural Hukou holders can apply for a local

[29] 《关于促进小城镇健康发展的若干意见》

[30] 《关于推进小城镇户籍管理制度改革的意见》

urban Hukou in a small town or city on a voluntary basis. The reform also standardized all irregular forms of urban Hukous created in previous reforms or local experiments, including the "Self-supplied food grain" Hukous, "Blue Stamp" Hukous, "local-only" urban Hukous[31], etc., and convert them all to regular urban Hukous. Again, the central government delegated the power to make detailed implementation plans to local governments, still allowing the practice of local experimentalism.

2.2.5 General Trends of the Hukou Reforms before the 2014 Reform

The above documentation of the evolution of the Hukou system clearly shows that Hukou reforms in smaller and larger cities have followed divergent paths. In general, urban Hukou acquisition restrictions in small towns and cities had been gradually relaxed in this era, while those in large cities had evolved differently in cities of different sizes and development conditions.

Hukou Reforms in Small Towns and Cities, 1984-2014

The overall trend of the Hukou reform in small towns and cities is the gradual relaxation of urban Hukou acquisition restrictions toward a final abolition of such restrictions. With the central government's reiteration of strict controls over rural-urban Hukou status transfer in 1977, the reform era began with a continuation of the absolute rural/urban Hukou dichotomy. Nevertheless, the 1984 reform creating the "Self-supplied food grain" type of urban Hukou marked the first milestone of relaxation of urban Hukou acquisition restrictions. Then, after a variety of local experiences throughout the late 1980s and early 1990s, the 1997 reform eventually opened up a formal channel for rural Hukou holders to obtain regular urban Hukous, and the 2001 reform even started to encourage rural Hukou holders to apply for urban Hukous in small towns and cities by greatly lowered the urban Hukou acquisition threshold in these places. Indeed, the threshold it set (stable urban residency and employment) did not constitute any serious barrier for most migrants in China's contexts.

However, after an initial popularity in the 1980s, urban Hukous in small towns and cities quickly lost their attractions. The 1984 reform received moderate applause: until the end of 1986, 454 2988 "Self-supplied food grain" urban Hukous had been issued, constituting 18.8% of the increase of urban Hukou holders in the period(Yin & Qihong Yu, 1996). In the 2000s, however, most

[31] The "Blue Stamp" Hukous and "local-only" urban Hukous are irregular Hukou forms which were the products of local experiments in the 1990s. They are issued by a local government, and are only recognized by that local government, and cannot be transferred to urban Hukous of a different city's if the Hukou holder moves. The regular urban Hukous, on the contrary, can be transferred elsewhere under some circumstances.

rural Hukou holders became not just less interested in small town and city Hukous, but even reluctant to trading their original rural Hukous for such kinds of urban Hukous. For example, in 2009, Jiangxi, an underdeveloped, middle province, announced that it would award "outstanding migrant workers" the opportunity for obtaining a local urban Hukou in the small cities or towns where they work. However, only 10 out of the 71 eligible migrant workers actually applied (Chang, 2010). I will discuss the implication of this phenomena later in this section.

Hukou Reforms in Large Cities[32], 1998-2014

Unlike the general relaxing tendency of urban Hukou acquisition restrictions in small towns and cities, Hukou reforms in large cities had proceeded in different directions in different cities. In most middle-sized and moderately developed large cities, just like in case of small towns and cities, urban Hukou acquisition restrictions had also been gradually relaxed; on the contrary, in some very large and more developed cities, such restrictions had not only been maintained, but rather increasingly strengthened.

A typical example of the cities in the former category is the city of Huzhou, which as mentioned earlier, is a middle-sized (about 310 000 residents in 2000), moderately developed city in Zhejiang Province. Being the first to announce a Hukou reform among all prefectural- and province-level cities in 2001, the city required only stable residency and employment to be eligible for a local urban Hukou, a criterion identical to what applies to the small towns and cities. However, even with such a low threshold, Huzhou's urban Hukou had not enjoyed popularity. By 2009, among the five major cities in the region (Shanghai, Hangzhou, Suzhou, Jiaxing, and Huzhou), despite having the lowest urban Hukou acquisition threshold, Huzhou had the lowest rate of urban Hukou increase (Yan, 2012). For another example, again like in the case of small towns and cities, some middle-sized cities had also announced programs awarding outstanding migrant workers local urban Hukous. In 2010, the city of Huizhou, a relatively underdeveloped, middle-sized city in Pearl River Delta, announced such a program, but only 5 out of the 60 eligible migrant workers actually applied, and the rest "would rather die" than exchanging their rural Hukous for an urban one in the city (Chang, 2010).

Cities in the latter category, on the contrary, reformed to strengthen their urban Hukou acquisition restrictions. Examples of such cities include all major large cities, such as Beijing,

[32] The term "large city" in this essay refers to all cities other than the small towns and cities, i.e., technically they include all prefecture- and province-level cities. In scale terms, these cities can be of a middle size (with 500 000 to 1 million population), or of large (1 to 5 million population) or extra-large (more than 5 million population) sizes.

Shanghai, Guangzhou, and also most provincial capital cities, as well as some smaller but very rich cities. Typical entry threshold in these cities may include real property ownership in the city, special professional skills or advanced education levels, capital investment of a certain amount in the city, or a combination of these criteria, and the threshold had in general been growing higher and higher. For example, Guangzhou, as mentioned earlier, announced a "House Purchase for Local Urban Hukou" policy in the late 1990s, which, considering the high real estate price in the city, was already a high threshold for obtaining a Hukou. However, the threshold soon turned out not high enough to prevent an excess population in-pour into the city, such that the city had to abolish the policy in 2004 and replaced it with a new point-based urban Hukou acquisition system. Under the new system, it is virtually impossible for most people to get a Guangzhou Hukou, unless they are fresh advanced degree graduates with distinct and are also able to find a formal job in the city, or are very high-end professionals, or are rich enough to invest a huge amount in the city. Indeed, failure to set up a high enough threshold would turn out to be unbearable for a city, like in the case of Zhengzhou, the capital of Henan province and a major city in China's hinterland. In 2001, the city announced a Hukou reform requiring relatively low criteria for obtaining a local urban Hukou. This had immediately led to an unprecedented in-pour of population, tripling the rate of the base year, thus placing so much burden on the city's welfare and public service system that it was forced to raise the threshold in only two years, and totally abolished the reform after another two years (Yan, 2012).

2.3 The Hukou Reform in 2014

In July 24, 2014, the State Council announced the *Notice of Further Promoting the Reform of the Household Registration (Hukou) System*[33]. Both in the mass media and in the academic world, the reform is quickly considered the most important one since the beginning of the Hukou reform three decades ago(Chan, 2015).

2.3.1 A Major Overhaul of the Urban Hukou Acquisition Policy

The most notable content of the reform involves a new urban Hukou acquisition system that designates differentiated degrees of restrictions for cities of different sizes. In general, this includes a complete abolition of urban Hukou acquisition restrictions in small towns and cities, and stricter

[33] 《关于进一步推进户籍制度改革的意见》

restrictions of different degrees for larger cities which gradually tighten with the size of the city. Specifically, the reform states the following new policies:

For small towns and cities, which are technically defined as all county-seat cities and other established towns and townships, there shall be a complete removal of all urban Hukou acquisition restrictions;

For middle-sized cities, which are technically defined as cities with a population of 500 000 to 1 million, existing restrictions of urban Hukou acquisition shall be relaxed in an ordered manner;

For large cities, which are technically defined as cities with a population of 1 million to 5 million, reasonable restrictions of urban Hukou acquisition shall apply, with cities with a population of more than 3 million subject to stricter restrictions;

For the extra-large cities with a population of more than 5 million, very strict restrictions of urban Hukou acquisition shall apply.

Therefore, in purely literal terms, the 2014 reform had created a hierarchical urban Hukou acquisition system. However, just like the series of previous reforms, the central government policy as stated above is only a guideline according to which the local governments may make detailed implementation plans, and it is the local implementation plans that truly determines the urban Hukou acquisition threshold for a specific city. By the end of 2015, every provincial-level government except for the Tibet Autonomous Region had announced an implementation plan for the new Hukou reform, so did many city governments. A careful examination of these implementation plans, however, demonstrates that the actual difficulty for obtaining an urban Hukou does not perfectly conform to the general guidelines presented above.

2.3.2 Differentiated Degrees of Restrictions on Urban Hukou Acquisition in Cities of Different Sizes, and the Implications

According to the local implementation plans, cities can be categorized into two types by the degree of restriction they impose on urban Hukou acquisition: those effectively without any of such restrictions, and those with effective restrictions. The latter category can be further divided into two sub-categories: those with "hard" institutional barriers of urban Hukou acquisition for "ordinary" migrant workers, and those without such barriers. I elaborate on each of the categories as follows.

First, I define what constitutes "effective restrictions". Cities may make local urban Hukou acquisition restrictions by setting up certain thresholds. These thresholds include requirements of

two different natures. The first kind involves those directly related to one's residency status in the city, including a stable place of resident, stable employment, as well as certain length of residency and/or social security payment requirements. The second kind involves various requirements for the migrants' human capital endowments and/or wealth possessions, including education levels, professional skills, local real estate or industry investments of a certain amount, local tax payments of a certain amount, etc. [34]

Obviously, the first kind of requirement is identical in form with the urban Hukou acquisition restrictions that applied in small towns and cities since the 2001 reform. Such requirements on the resident status per se are by nature a reasonable requirement for establishing a residency, and are also widely used for similar purposes across the world, thus constituting no serious restrictions for obtaining an urban Hukou unless the specific threshold under a certain requirement is unusually high (e.g., a requirement of consecutive residency of more than 10 years, such as in the case of Tianjin as detailed later). The second kind of requirements, however, resembles those applied in some large cities before the 2014 reform, and constitutes "hard" restrictions for obtaining an urban Hukou as ordinary migrant workers with no particular human capital endowments or wealth possessions cannot meet these requirements.

Hence, I define the cities without any effective local urban Hukou acquisition restrictions as those with no requirements for obtaining a local urban Hukou, or those with only requirements of the first kind where the threshold is set to no more than 1 year of consecutive living, employment, or social security payments. In contrast, any city that requires more than that is defined as a city with effective local urban Hukou acquisition restrictions.

By this standard, on the one hand, apart from the technical small towns and cities which are not entitled the power to set up local urban Hukou acquisition restrictions in the first place, most middle-sized cities and a few large cities (usually in relatively underdeveloped regions), which are entitled such power, actually made no restrictions at all. A prominent example of this category is the city of Taiyuan, which is the capital city of Shanxi Province and has an urban population of 3.15 million (in the year of 2010; the same hereinafter), but only requires 1 year of local social security payment for obtaining a local urban Hukou. As such, the city had effectively equaled itself to the

[34] It should be noted that other than the two Hukou-acquisition channels presented here, all cities have kept the existing channel for the direct relatives of a local urban Hukou holder to obtain a local urban Hukou. This is obviously out of the scope of this essay and I will not cover this situation in the analysis.

small towns or cities when it comes to urban Hukou management, so did all other cities in this category.

On the other hand, most large cities and all extra-large cities, together with a few smaller cities which are either very rich or for some reasons politically important, maintain an effective local urban Hukou acquisition restriction. *Table 53* presents a complete list of the cities in this category, which include 50 cities. In population terms, these cities have a total of 198 million population, constituting 14.75% of the national population; further, out of the 198 million "permanent" residents (officially defined as those who live for at least six consecutive months in a place), 68 million are floating population, constituting 30.8% of all floating population in the country. Technically, these people are the ones affected by the remaining urban Hukou acquisition restrictions after the 2014 reform.

Further, one can subdivide the 50 cities into two groups by the "hardness" of the urban Hukou acquisition restrictions they set up. The general idea is that if an "ordinary" migrant work with no special human capital endowments or wealth possessions CAN possibly obtain a local urban Hukou merely by accumulating years of residency and employment – even though it may take many years, the respective restrictions are "soft". Otherwise, if the requirements make it virtually impossible for an ordinary migrant worker to obtain a local urban Hukou, the restrictions are "hard".

By this standard, and through a careful examination of the cities' Hukou reform implementation plans so far available, I find that 43 out of the 50 cities have "soft" restrictions. These cities either only require residency-related qualifications for obtaining a local urban Hukou, or have established a point-based system for local urban Hukou acquisition, in which though the migrants with special human capital endowments or wealth possession enjoy a head start, those who are not with such qualifications also have the possibility – or at least theoretical possibility to get a local urban Hukou. For example, the city of Shenyang, which is the capital city of Liaoning Province, has created the following point-based local urban Hukou acquisition system[35]:

The system is composed of four types of indicators: (1) education level or professional title, (2) age, (3) length of consecutive residency in the city, and (4) length of social security payment in the city. Where,

[35] Source: *Notes of Further Promoting the Household Registration Reform by the Shenyang Municipal Government* (《沈阳市人民政府关于进一步推进户籍制度改革的意见》). http://www.shenyang.gov.cn/zwgk/system/2015/11/19/010135033.shtml

(1) The education level or professional title indicator is worth a maximum of 100 points. Applicants with a doctorate degree or a national certified first-class professional title can get 100 points; applicants with a master degree or a national certified second-class professional title can get 90 points; applicants with a bachelor's degree or a national certified third-class professional title can get 80 points; applicants with a three-year junior college diploma or a national certified fourth-class professional title can get 70 points; applicants with a high school diploma or a national certified fifth-class professional title can get 60 points; applicants with a secondary school diploma can get 50 points; and applicants with an elementary school or lower education experience can get 40 points.

(2) The age indicator is worth a maximum of 30 points. Applicants over the age of 60 can get 5 points, and applicants younger than 60 can get 1 more point for every additional year of age less than 60.

(3) The length of consecutive residency indicator is worth a maximum of 30 points. Applicants can get 5 points for every additional year of consecutive residency in the city.

(4) The length of social security payment indicator is worth a maximum of 30 points. Applicants can get 5 points for every additional year of social security payment in the city.

Overall, applicants who have accumulated 120 point can obtain a local urban Hukou.

Simple calculations would demonstrate what such a system means for applicants of different human capital endowments. For example, a fresh doctor graduate in his/her 20s will get 100 points from the education indicator, and 30 points from the age indicator. Thus, this person will immediately qualify for an urban Hukou in Shenyang. However, if the applicant is an "ordinary" migrant worker, who may be typically portrayed according to the statistically facts revealed in Essay 2 as a secondary school graduate in his/her middle 30s with no professional skills, he/she may only get 50+30 = 80 points from the education and age indicators. Thus, this applicant has to get the remaining 40 points through accumulating consecutive years of living and social security payments in the city, which would require at least 4 years of both consecutive living and social security payment, or longer time if the consecutive residency or social security payment is interrupted during the time. The contrast clearly shows how the human capital endowments help an applicant gain a considerable advantage in terms of obtaining a local urban Hukou. Nevertheless, the 4-year wait time for those without superior human capital endowments seems also acceptable, or at least practical, and it is in this sense that I define such restrictions as "soft" ones.

On the contrary, the remaining seven cities, namely Beijing, Shanghai, Tianjin, Guangzhou, Shenzhen, Suzhou, and Hangzhou, have "hard" restrictions. These cities may be in a broad sense

referred to as the first-tier cities of China[36]. These cities may apply the hard restrictions by setting up an unrealistically high goal point for an ordinary migrant worker to be qualified for the local urban Hukou in a point-based system. For example, the city of Tianjin sets up a goal point of 140 points for obtaining a local urban Hukou, while an ordinary migrant worker as portrayed above may only get 10-20 base points from an age indicator, and accumulate as few as 4 points for every year of social security payment[37], such that it would take as many as 30 years (or more) for the migrant worker to qualify for the local urban Hukou. More so, a city may even announce a point-based system without a definite goal point for obtaining the local urban Hukou, and reserves the discretionary power of setting up the goal point every year, as is in the cases of Beijing and Suzhou. Such a system, despite the point-based appearance, is in essence still a quota-based one, and the quotas are obviously not reserved for ordinary migrant workers.

In population terms, these first-tier cities have a total of 72 million population, constituting 5.38% of the national population; further, out of the 72 million permanent residents, 32 million are floating population, constituting 14.3% of all floating population in the country. Technically, these people are the ones affected by the "hard" urban Hukou acquisition restrictions after the 2014 reform.

[36] It should be noted that there is no strict definitions on which cities constitute the first-tier ones in China, though.

[37] Source: The Point-Based Urban Hukou Acquisition System in Tianjin, http://www.tj.lss.gov.cn/ecdomain/framework/zf/index/modekfdpemmnbbodlebnnpmdblmicpbd.do?isfloat=1&disp_template=ogfibaeiembcbbodkomdlgpllklhnkn&fileid=20160406093132607&moduleIDPage=modekfdpemmnbbodlebnnpmdblmicpbd&siteIDPage=zf&infoChecked=null

Table 53 Cities still with Rigid Urban Hukou Acquisition Restrictions after the 2014 Reform

Province	City	City Proper Population (2010)	Population Rank	GDP per capita (2014)	Own Resident	Rent Resident	Employment	Social Security Payment	Tax Payment	Length Holding Certificate of Residency	Special Experts	Investment	Age	Advanced Education Degree	Professional Title	Governmental Award	Volunteer Service
Shanghai	Shanghai	19765388	1	89444	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Beijing	Beijing	15502460	2	92210	Y	Y	Y	7	Y	Y	Y	Y	<45	Y	Y		Y
Guangdong	Shenzhen	10358381	3	150552	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y
Guangdong	Guangzhou	9702144	4	129242	Y	Y	Y	4	Y	Y	Y		<45	Y	Y		Y
Tianjin	Tianjin	8937604	5	97609	Y	Y	Y	Y	Y	Y	Y		<45	Y	Y	Y	Y
Guangdong	Dongguan	7271322	6	70716		Y	5	5									
Sichuan	Chengdu	6781300	7	70338	Y	Y	Y	Y		Y	Y		Y	Y	Y		
Hubei	Wuhan	6083207	8	98434	Y	Y	Y	Y		Y	Y			Y	Y		
Chongqing	Chongqing	5761968	9	48032	Y	Y	5							Y	Y		
Liaoning	Shenyang	5432132	10	91910	Y/O*	Y	Y	Y		Y	Y/O	Y/O					
Jiangsu	Nanjing	5375499	11	107730	Y	Y	Y	5									
Shaanxi	Xi'an	4867493	12	63748		Y	Y	Y		Y				Y	Y		
Zhejiang	Hangzhou	4449339	13	104038	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	
Shandong	Qingdao	4085054	14	96086	Y	3	Y	3	Y		Y	Y	Y	Y	Y	Y	Y
Heilongjiang	Harbin	3962701	15	50044	Y	Y	Y	Y	Y	Y	Y	Y					
Liaoning	Dalian	3589280	16	110264	Y/O	Y	Y	Y		Y	Y/O	Y/O (1.2M) **					
Guangdong	Foshan	3557280	17	104216		Y	5	5									
Hunan	Changsha	3449646	18	108356		Y	3	3									
Henan	Zhengzhou	3384210	19	73799	Y	Y	Y	Y		Y							
Jiangsu	Suzhou	3302152	20	130081	Y	Y	Y	5									
Jilin	Changchun	3281510	21	69634		2	Y	2			Y/O						
Yunnan	Kunming	3278777	22	56437	Y		Y	Y									
Shandong	Jinan	3256258	23	81657													
Fujian	Xiamen	3119110	25	87762	Y		Y	5		8	Y	Y		Y	Y	Y	

Anhui	Hefei	3098727	26	67767	Y	Y	3	3											
Jiangxi	Nanchang	3005758	27	70753	Y	Y	Y	Y		2									
Xinjiang	Urumqi	2828967	28	72543	Y	Y	Y	Y											
Fujian	Fuzhou	2824414	29	70425	Y	Y	Y	Y		Y									
Jiangsu	Wuxi	2757736	30	126545	Y	Y	Y	5											
Guangdong	Zhongshan	2740994	31	88954		Y	5	5											
Hebei	Shijiazhuang	2706264	32	48572	Y/O	Y	Y	Y	Y	Y		Y/O							
Zhejiang	Wenzhou	2686825	33	46785	Y	Y	Y	Y											
Guangxi	Nanning	2588808	34	45936		Y	Y	3											
Guizhou	Guiyang	2520061	35	55226	Y	3	Y	5											
Gansu	Lanzhou	2338503	37	52318	Y	10	Y	Y	Y	Y		Y/O	Y/O (3M)		Y		Y		
Jiangsu	Changzhou	2257376	38	104471	Y	Y	Y	5											
Zhejiang	Ningbo	2145532	39	99211	Y	Y	Y	Y		5		Y		<45	Y		Y	Y	Y
Inner Mongolia	Baotou	1874323	41	131465	Y/O	Y	Y	5											
Guangxi	Liuzhou	1624571	42	55000		Y	Y	3											
Hainan	Haikou	1517410	46	46313	Y	Y	Y	5		5								Y	
Inner Mongolia	Hohhot	1497110	50	96433	Y/O	Y	Y	5											
Jilin	Jilin	1469722	52	61838		2	Y	2				Y/O							
Ningxia	Yinchuan	1242839	58	67013	Y	Y	2	2											
Heilongjiang	Daqing	1167642	64	138747		2	1	2											
Qinghai	Xining	1153417	66	47501	Y/O	Y	Y	Y											
Heilongjiang	Qiqihar	940134	89	23082		2	1	2											
Guangdong	Zhuhai	891483	99	116789	Y	Y	5	5	Y	Y		Y		Y	Y		Y	Y	Y
Hebei	Langfang	530840	205	46012	Y	Y	Y	5											
Hainan	Sanya	453819	271	55243	Y	Y	Y	5		5								Y	
Xinjiang	Karamay	232441	703	223341	Y	Y	Y	Y											
Shanxi	(None)																		
Tibet	(None)																		

Source: author's summary from provincial government communiques on Hukou reform. See Appendix for details.

Notes:

* Y/O means one only needs to satisfy the criterion to be eligible for a local Hukou.

** Y/O (1.2M) means one only needs to invest 1.2 million Yuan to be eligible for a local Hukou.

2.4 Conclusion on the Hukou System's Social Stratification Functions: the Shift of the Duality

With the documentation and analysis of the evolution of the Hukou system, I return to the discussion on the Hukou system's social stratification function. As reviewed above, the traditional view on the Hukou system's social impacts states that the Hukou system is part of a rural-urban dual social and economic structure serving a centrally planned economy. As the urban area is high in productivity and also in living standards while the rural area is low in both, it is the most cost-efficient strategy for the developmentalist state, eagerly seeking to promote industrialization, to explicitly control internal rural-urban population mobility so as to maintain an urban population just necessary for the industrial development. Though some researchers realize that the system has changed in form over time, most still maintain that the rural-urban duality persists into the present (Afridi, Li, & Ren, 2015; Forstall & Chan, 2015; Young, 2013a).

However, the analysis on the trajectory of Hukou reforms in this section challenges the traditional view in terms of the structure of the duality in the Hukou system. On the one hand, through the Hukou reforms in small and middle-sized cities, the once impermeable institutional rural-urban boundary had first become softer, and finally vanished in the 2014 reform. Indeed, as early as in the 2001 Hukou reform, rural Hukou holders are allowed, or even encouraged, to give up their rural Hukous for an urban one in small to middle-sized towns and cities, and the trend had developed to a final abolition of urban Hukou acquisition restrictions in these cities, signaling the collapse of the institutional barrier between the rural places and small and middle-sized towns and cities. On the other hand, however, the institutional urban Hukou acquisition barrier in some large cities, especially in the first-tier cities, has not only been maintained, but rather strengthened, and the strength of such institutional barriers shows a hierarchical structure, with the first-tier cities forming a new impermeable boundary for most rural residents, and other dozens of cities having less hard, but still effective urban Hukou acquisition restrictions of various degrees.

Hence, the general trend of the Hukou reform shows a clear implication: the urban Hukous in large cities, especially those in the first-tier cities, are "different", while all other Hukou types, including rural, small, middle-sized, and even some large city Hukous, are effectively the same, which differences which are only a matter of degrees. Therefore, instead of the traditional duality created by the Hukou system that differentiates rural and urban Hukou status, the Hukou system as it is now gives rise to a new duality, one between some large cities, especially a few first-tier cities, and everywhere else.

Why has this shift of duality taken place? I argue that the reason lies in the overall structural change of China's socio-economic system. As suggested above, the creation of the dual Hukou system was aimed to facilitate the planned industrial development in the cities with minimal costs, but it also means that urban Hukous bear much better welfare and public services benefits than rural Hukous. Thus, with China transforming into a market economy since the Reform and Opening-up in 1978, Hukou's main function in facilitating urban industrial development had gradually diminished as the planned economy per se was abandoned. However, Hukou's another function, i.e. as the bearer of benefits, had still been kept. In the early years of the Reform (the 1980s), the logic of doing so was obvious: urban welfare and public service resources, which were absolutely superior than what a rural Hukou bore at that time, were very scarce, and it was only practical to maintain the dual structure by setting up a strict urban Hukou acquisition restriction, so as to forcibly balance the (potentially overwhelming) demand and (very limited) supply of these resources.

Since the only reason to keep the dual structure is to adjust the unbalanced demand and supply of urban welfare and public service resources, a balanced supply and demand would naturally render the dual structure useless. And it is exactly what has been happening in areas other than the large cities in the recent two decades. On the one hand, though the localized welfare and public service resources in the large cities remain absolutely superior with the boom of the "land finance" and other local government revenues in these places, those in most small and middle-sized towns and cities have only moderately improved due to lack of financial resources (Man & Hong, 2011; Yi, 2009). On the other hand, with the establishment of a national rural welfare and public service provision system in the turn of the millennium, rural welfare and public services have been significantly improved. Thus, these new developments have considerably lowered the attraction of the Hukous of small and middle-sized towns and cities relative to those of rural places.

An item-by-item comparison of the benefits associated with urban and rural Hukous clearly demonstrates the value of each (*Table 54*). Urban Hukous have only one exclusive privilege: governmental housing aids in terms of the eligibility for economical affordable housing or inexpensive rental housing in the Hukou location, which are not necessarily of great value except in the large cities where real estate prices are high. Education system is the same in urban and rural places, with differences only in the quality of schools which are, again, generally of little differences except in the large cities. Most social security-related welfare are rural-urban dual-track, in which the urban track is generally better in quality but disadvantageous in terms of cost-efficiency. One should also note that rural Hukou holders can actually opt to participate in the urban resident

programs on a voluntary basis. All in all, unless an urban Hukou is in a specific city where the quality of welfare and public services is absolutely superior, it would have no definite advantage over rural Hukous. In other words, only the urban Hukous in such a city are valuable enough such that institutional barriers are needed for suppressing the potentially excessive demand for them.

A closer look at the cities still keeping effective urban Hukou acquisition restrictions after the 2014 reform further demonstrates this logic. Despite the mandate that only the large and extra-large cities should keep the restrictions, some smaller cities also keep or even strengthen the restrictions in practice. These include Jilin (ranked the 52nd largest city), Daqing (rank 64), Qiqihar (rank 89), Zhuhai (rank 99), Langfang (rank 205), and Karamay (rank 703). Each of them has a reason for strict Hukou entry controls, such as special political importance in the province (Jilin, Qiqihar), being extremely rich (Daqing, Karamay, both are rich oil-producing cities), or special political-geographic locations (Zhuhai, adjacent to Macau SAR, and Langfang, adjacent to the national capital Beijing). These special endowments are undoubtedly associated to an outstanding standard of local welfare and public service provision, such that certain institutional barriers are needed as a demand adjuster. Similarly, as the first-tier cities apparently have much more valuable urban Hukous than ordinary large cities, harder restrictions are necessary to forcibly balance the demand and supply of the scarce benefit resources.

For all other cities, the quality of welfare and public services they can provide to their urban Hukou holders has, to say the most, moderate advantage over rural Hukou's; while the rural benefits, as indicated above, are usually more economical. Thus, there is hardly a dominant strategy between choosing a rural Hukou or a small city Hukou by the standard of benefits provision. However, the rural Hukous, under China's specific institutional contexts, have a unique, but often neglected privilege: land tenure rights (last rows in *Table 54*). Which changes the game.

Similar to the dual structure of the Hukou system, China maintains a rural-urban dual structure in land ownership, which, contrary to the urban-biased dual Hukou structure, favors rural Hukou holders. By Constitution, China's urban land is state-owned, while rural land is owned by village collectives, who then assign farmland and homestead equally among all collective members for free on a 30-year term with automatically renewable privileges. Though there's still some ambiguity on the nature of such collective ownerships (Ho, 2001), the collective members are generally entitled the complete rights of managing and leasing their assigned land tenure, and also the rights to get compensation when government acquisitions of their assigned land tenure happens (Goldfinch, 2016). Except that they cannot freely sell the land, such rights effectively constitute a de facto land

ownership. In general, the rural residents' land tenures are small – as small as 0.13 hectares farmland per person, and about 120 square meters homestead per household in national average. Despite the small size, in most occasions they are adequate in generating an agricultural income that can maintain a basic living for the household, as well as providing a decent shelter, as shown in Essay 2, letting alone the potential gains from land value appreciation in the future (He, 2013). There are studies (Li, 2008; Zheng, 2009) showing that the sole agricultural value of an average rural household's farmland tenure is roughly equal to the value of the social security welfare provided to an average urban resident, and this equation can also be indirectly reflected in the popularity of the "Farmland for Social Security" programs, in which local governments compensate the rural land owners with city-level social security benefits, rather than cash compensation, in governmental land acquisitions. Hence, land tenure rights constitutes a game changer when it comes to the "value" of rural versus urban Hukous: cities may have better welfare and public service resources, but rural Hukous are attached to exclusive land tenure rights. When it comes to choosing a rural Hukou or an urban Hukou in non-first-tier cities, the trade-off could be a hard one.

Table 54 Comparison of Rural and Urban Hukou's Associated Welfare, Public Services, and other Benefits

Benefit		Rural Hukou holders	Urban Hukou holders
Education[38]	Compulsory Education (1-9 Grades)	Free if going to a local school (where Hukou locates). Charges may apply if going to non-local schools.	Free if going to a local school (where Hukou locates). Charges apply if going to non-local schools.
	High School	Extra charges may or may not apply if going to a non-local school.	Extra charges may or may not apply if going to a non-local school.
	College Entrance Examination	Can only take the exam in Hukou location in most occasions; may take the exam where they hold a certificate of residency.	Can only take the exam in Hukou location
	Higher Education	No difference between rural and urban Hukou holders.	
Social Security		China has a dual-track public social security system, with different programs for rural and urban residents. Take the example of medical insurance programs, there are three major ones: The New Rural Cooperative Medical Program, The Basic Medical Insurance Program for Urban Employees, and The Basic Medical Insurance Program for Urban Residents. The rural program is exclusively for rural Hukou holders, with much lower payments and lower benefit standards; The urban resident program is compulsory for urban Hukou holders, however, rural Hukou holders are also eligible to enter on a voluntary basis. It requires higher payments, and yield better benefits, too. The program for employees is linked to one's employment, not Hukou status. However, it is compulsory for employees with urban Hukous, but some items are optional for employees with rural Hukous.	

[38] Policies vary in different locales. The comparison presented here is based on Beijing's condition, which is regarded as a typical one among China's cities (Yuan, 2010).

	The New Rural Cooperative Medical Program (Optional): Payments: 150 Yuan/person/year (personal payment); 420 Yuan/person/year (Government subsidy). Benefits: Outpatient service: 20-60% copayments; maximum 5000 Yuan/year. Hospitalization: 40%-70% copayments; with special benefits for some major diseases; maximum 10000-20000 Yuan/year.	The Basic Medical Insurance Program for Urban Employees (Compulsory): Payments: 2% of salary (employee payment); 11% of salary (employer payment). Benefits: Outpatient and emergency care service: 1300-1800 Yuan deductible/visit; 20%-50% copayments. Hospitalization: 650-1300 Yuan deductible/visit; 5%-15% copayments; maximum 70000 Yuan/year.
	The New Rural Pension Program (Optional): Payments: 100-1500 Yuan/person/year. Minimum 15-year payments. Benefits: 60 Yuan/person/month after 60; 70 after 70; 80 after 80.	The Basic Pension Insurance Program for Urban Employees (Compulsory): Payments: 8% of salary (employee payment); 20% of salary (employer payment). Benefits: about 60% of current salary on a 35-year payment basis.
yme :s[41]	Can only receive unemployment benefits on a yearly basis, and at the Hukou location.	Receive unemployment benefits on a monthly basis. Higher benefits standards than rural Hukou holders.
lated ɜ[42]	Not eligible in some occasions	Compulsory
ı ɜ[43]	Not eligible in some occasions	Compulsory

ɔv.cn/zhengwuxinxi/zhengcefabu/201605/t20160506_1978682.htm

ɜ.gov.cn/ncshbxs/NCSHBXSzhengcewenjian/201508/t20150817_218108.html

ɔn. Source: http://zhengwu.beijing.gov.cn/fggz/zfgz/t890721.htm

ɔn. Source: http://zhengwu.beijing.gov.cn/fggz/zfgz/t1212688.htm

Housing[44]	Urban Public Housing	Not eligible	Eligible
	Housing Provident Fund	Optional	Compulsory
Subsistence Allowance[45]		Except for Beijing and Shanghai, most provinces have different subsistence allowance standards between urban and rural residents. Rural standards range from 33% to 88% (average 60%) of the respective urban standards.	
Land Tenure Rights[46]	Farmland	Village collectives own the village's farmland. Farmland is equally allocated to each member of the village collective, usually with readjustments every 3-10 years. However, since 1998, readjustments have been suspended for 30 years in most places. Typical farmland tenure is about 0.07-0.2 hectares per person. In the occasion of land acquisition by local governments, usually the families currently allocated the respective land parcels enjoy the compensation. However, the compensation may be equally allocated to all village collective members in some occasions.	None
	Construction Land	Village collectives own the village's construction land de jury. However, rural residents have the de facto ownership of the land parcel of their own houses. Typical construction land tenure is about 100-350 square meters per household. In the occasion of land acquisition by local governments, the families who "own" the construction land parcels always get all compensation.	Urban construction land is owned by the State. Urban residents only have 30-70 years leasehold rights of the land.
Village Collective Benefits[47]		Eligible for village collective's dividends and other benefits.	None

[44] Based on Beijing's condition. Source: http://zhengwu.beijing.gov.cn/zwzt/bjsbzxzf/t1094083.htm

[45] Source: http://www.mca.gov.cn/article/sj/tjjb/bzbz/201604/20160400000089.shtml

[46] Source: http://www.gov.cn/banshi/2005-05/26/content_989.htm

[47] Source: http://www.gov.cn/flfg/2010-10/28/content_1732986.htm

Source: see footnotes in table.

On balance, I argue that the traditional view that the Hukou system had suppressed China's internal mobility by discriminating against rural residents and creating a rural-urban dual structure for benefit provision is out of date, as the duality has shifted into a new one between some large cities, especially the first-tier cites, and everywhere else, including rural places, most small and middle-sized cities, and even a few large cities (Figure 24).

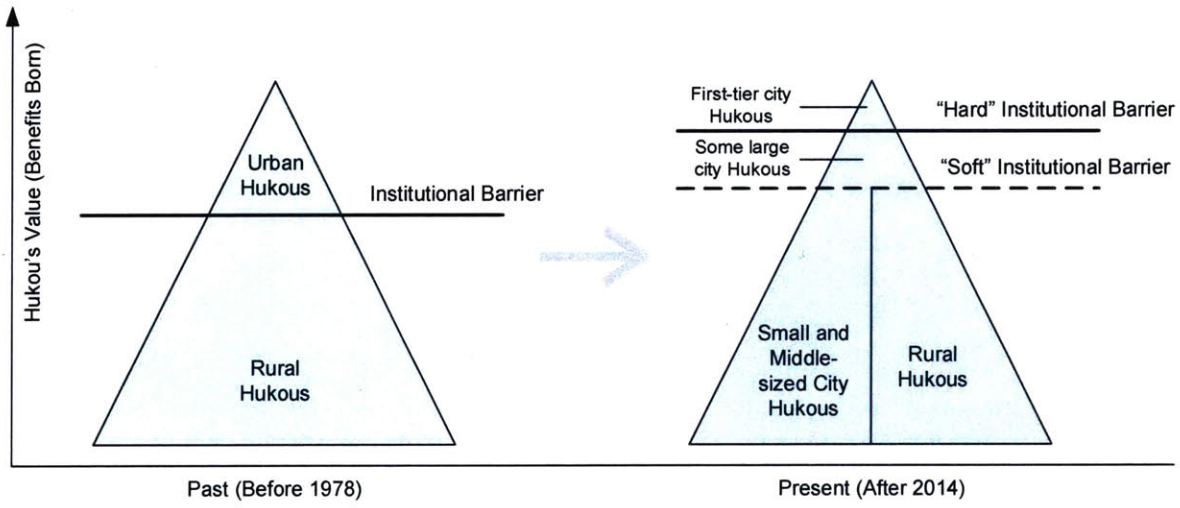

Figure 24 The Shift of the Dual Structure of Hukou

Under this new duality, only the Hukous in the first-tier cities are subject to hard institutional acquisition restrictions due to their absolutely superior benefits born. Other dozens of large cities, for similar but weaker reasons, have softer urban Hukou acquisition restrictions of various degrees. All other urban places do not require any condition for obtaining a local urban Hukou, as their Hukous bear no advantageous benefits as compared to rural Hukous which bear land tenure rights. As such, the rural residents are effectively entitled the freedom to choose an urban Hukou at will (or with moderate efforts in the case of some large cities) in all cities but the first-tier cities. Considering the very small population percentage the latter assumes, it is safe to conclude that under most circumstances, the once-existent institutional suppression of urban settlement for the rural residents in the form of urban Hukou acquisition restrictions is no more. This conclusion is the basis of the rest of the analysis in this essay.

3 Theoretical Framework and Hypotheses

Returning to the debate between the Institutional Suppression Explanation and the Free Choice Explanation of China's migrants' circular migration behavior, I argue that the former is to a large extent out of date with the revelation of the fact that urban Hukou acquisition restrictions in most parts of the country have been abolished. However, this does not mean that the free choice explanation is automatically correct. Rather, given the relevance of the land ownership policy, the migrants' location preference can still be institution-bound. My general argument, which is also the analysis framework of this essay, therefore, is that the migrants' migration and settlement behavior is out of a rational choice process in which institutional factors weigh in, and the unique life-cycle circular migration pattern is shaped through the interaction between the migrants' endogenous endowments and the exogenous factors, including the institutional factors.

I base the argument on three relevant theories. On the one hand, from an exogenous perspective, the classic Push-Pull theory of migration and urbanization provides a basic framework for analyzing the roles of socio-economic conditions in migration origin and destination places, as well as that of a changing institutional environment (as is in the case of the Hukou system and the land ownership policy) in affecting the migrants' settlement preferences. On the other hand, from an endogenous perspective, two theories, the dual labor market theory, and the New Economics of Labor Migration (NELM) theory, provide helpful insights for explaining the formation of the migrants' settlement preferences, with the former implying two bifurcating career and life paths for migrants of different human capital endowments, and the latter revealing the economic rationale the migrants follow when it comes to permanent settlement location decision-making. I briefly review the three theories and discuss their relevance with this essay in the following paragraphs, and then propose my hypotheses based on the framework.

3.1 The Push-Pull Theory

First introduced for conceptualizing the migration and urbanization processes (Heberle, 1938), the Push-Pull theory views a rural-urban migrants' final location decision as the outcome of the combined effect from certain pushing and pulling factors at the origin and destination places. In its original form, the pushing and pulling factors are only concerned with the economic ones, and wage difference in particular is emphasized. Later developments of the theory had included non-

economic factors in the model. For example, Bogue (1959) made a list of the pushing factors in rural-urban migration which includes low income, agriculture's vulnerability to risks, poor living conditions, limited prospects, etc.; while the pulling factors include high income, more opportunities for employment, better education, better public facilities and services, a more tolerant social environment, etc.. Overall, when the combined force at the destination outweigh that at the origin, migration occurs.

In China's current contexts, and in terms of only the economic factors which are the focus of the study, the net pushing force from the rural places is their disadvantageous welfare and public service resources, while the net pulling force from the rural places mainly concerns the land tenure rights attached to rural Hukous. It should be noted, however, that the pushing and pulling forces are subjective. In other words, different people may have different utility from the same pushing or pulling factor, thus stressing the importance of the endogenous endowments of the migrants themselves. Therefore, the socio-economic development conditions in migration origin and destination places only constitute the exogenous determinants of the migrants' settlement location preferences, and the inclusion of the endogenous factors is also necessary, which leads us to the dual labor market theory and the New Economics of Labor Migration theory.

3.2 The Dual Labor Market Theory

As I have presented a brief review of the theory in Essay 2, I will not repeat here. What I would like to stress, though, is that although the theory was originally proposed to conceptualize international migration, it apparently also applies to internal migration. In the China case, in particular, though there exist trivial differences from Prior's classic model (for example, Essay 2 shows that China's rural-urban migrants generally have rather stable jobs, which may be attributed to the country's sustained rapid economic growth), the theory sheds lights on my analysis in that it reveals the relevance of the division of labor market, and that different labor markets are for laborers of different human capital endowments. As Essay 2 suggests, such endowments are very relevant to the migrants' career and life paths. The small portion of migrant laborers who possess relatively high human capital endowments is much more likely to permanently settle in cities at an early age and thus quit the "Circle of Life", while the majority of migrant workers who do not are more likely to return migrate to home villages when they retire. The contrast stresses the key role the human capital factors play in determining the migrants' migration and settlement behavior.

3.3 The New Economics of Labor Migration

Again, I will not repeat my review on this theory in Essay 2, but I would like to stress that the concept of households as the basic unit of migration analysis, as well as that households trying to minimize risks in and through migration, also sheds light on my analysis in this essay, too. For a typical Chinese migrant household, a permanent urban settlement decision involves many kinds of uncertainties. It means abandoning of the rural residency and farmland tenure, and acquisition of new place of residency in the destination city; it also means that the whole household will live a different way of life in an unfamiliar place for the rest of their lives, and that the household members will be put in the urban labor market without any other choices. All these uncertainties may inflict risks. Thus, the relevant factors, such as the migrants' household conditions, the spatial-temporal pattern of the migration, and the migrants' working status in cities, would all affect the migrants' urban settlement behavior.

Moreover, the NELM and the Dual Labor Market theories combined imply a further argument. Because of the division of the labor market, most migrant workers actually lack the ability to establish a decent large-city urban residency where living is expensive only through accumulating salaries from migrant jobs. Thus, these migrants may probably self-sort and opt not wishing to settle in the large cities at all. If this is true, the urban Hukou acquisition restrictions in large cities, soft or hard, would not have effective impacts on the migrants' urban settlement intentions. This is a main hypothesis of this study, and I will elaborate on it later.

3.4 A Conceptual Model for China's Internal Rural-Urban Migration, and the Hypotheses

Deriving from the theories discussed above, I present a comprehensive conceptual model for explaining China's internal rural-urban migration. In general, I view the migrants' living location decision-making as a rational calculation process subject to external constraints. The exogenous constraints refer to the pulling and pushing forces of migration, including possible institutional factors such as the land ownership policy. In this sense, this is also an institution-bound decision-making process. The endogenous factors include the migrants' individual and household human capital endowments and wealth possessions. Further, these endogenous factors are subject to the influence from other non-economic personal and household characteristics, including the life-cycle status, spatial-temporal patterns of migration experiences, and working status of the migrant and

household members. All these factors combined to shape the migration and settlement behavior of China's rural-urban migrants.

Based on the conceptual framework, and under my general argument of institution-bound migration and settlement behavior, I present the following directly testable hypotheses, which I test in the rest of the essay with empirical data:

Hypothesis 1 (H1): As the Hukous of small and middle-sized cities generally have no institutional advantage over the rural Hukou in terms of the benefits they bear, a relaxation of urban Hukou acquisition restrictions in these places will not result in a surge of demand for their Hukous.

Hypothesis 2 (H2): Also, the above discussed self-sorting mechanism suggests that the urban Hukou acquisition restrictions in the first-tier cities should have actual impact on the migrants' behavior. However, it is balanced with the attractiveness of these cities. Overall, controlling for other effects, the migrants' stated urban settlement intentions in the first-tier cities will not be significantly different with those in other cities.

Hypothesis 3 (H3): Concerning the migrants' permanent urban settlement behavior, the endogenous factors such as higher human and social capital possessions will enhance the migrants' urban settlement intentions, while those inflicting uncertainties, such as the migrants' household burdens, instable or undesirable work status, and certain past migration experiences, will have negative influence on the migrants' urban settlement intentions.

Hypothesis 4 (H4): Specifically, the farmland tenure rights attached to rural Hukous is a major factor in the migrants' calculations, as it functions like the social security of the migrants, and thus facilitates their rational living location choice. Therefore, in general, migrant and rural households should be willing to accept offers trading their farmland tenure for benefits equivalent to what an urban Hukou conveys. Furthermore, households with farmland tenures of different potential values would expect differently in return for giving up the farmland tenure, and thus there will be households who are not willing to accept the above mentioned offers.

4 Empirical Inquiries: Data and Methodology

I use data from two field surveys on China's rural and internal migrant households to construct models and perform the quantitative analysis. First of all, the migrants' urban settlement intentions are the major concern, and we explicitly asked the question in the surveys. However, it should be

noted that the "settlement intention" here refers to a serious intention, one after considering all real-world constraints and also leading to serious efforts toward a permanent urban settlement, rather than "wishes" in a broad sense (Undoubtedly, without considering real-world constraints, most migrants will wish to live in the cities where the living standard is generally much higher than that in the rural places. Such intentions are thus of little meanings for a rigorous academic examination).

I develop quantitative models to test the hypotheses. Specifically, to test Hypothesis 1, one needs to observe the direct effect of relaxing the urban Hukou acquisition restrictions in the small and middle-sized cities on the migrants' settlement intentions in these places. Fortunately, the Hukou reform in 2014 provides an opportunity to do so, as the major policy change between the two surveys had relaxed such restrictions in small and middle-sized cities. Thus, the reform had created different institutional environments between the larger and smaller cities in terms of urban Hukou acquisition, such that one can compare the effects on the migrants' urban settlement intentions accordingly. Similarly, to test Hypothesis 2, I simply compare the migrants' settlement intentions in the first-tier cities with those in other places. However, the comparison is only meaningful when the potential contributing factors of such intentions are controlled. I thus construct a discrete choice model, which I call the *Urban Settlement Intentions (USI)* model, with all such factors discussed in the general analysis framework in the previous section are included. The model can therefore not only serve as a test for Hypotheses 1 and 2, but also one for Hypothesis 3, as it would reveal the relationship between the migrants' urban settlement intentions and the contributing factors.

As for Hypothesis 4, one needs to observe the migrants' willingness to trading their farmland tenure to social security-equivalent benefits. In the surveys, we had made different specific terms for such transactions with the reference of the real-world "Farmland for Social Security" programs, and asked for the respondents' willingness to accept these hypothetical offers. Again, the willingness here is real and serious. Meanwhile, to examine the influence of the value of the rural farmland tenure on the owners' attitude toward such transactions, I include in the model a location variable as a proxy of the potential economic value of the farmland tenure. I thus develop a second model, which I call the *Farmland for Benefits (FFB)* models.

In this section, I first describe the data on which the analyses are based, and then elaborate on the USI model in the second part, and finally on the FFB model in the third part.

4.1 Data

4.1.1 The Two Surveys

The empirical data on which this study is based is drawn from two large-sample, nationwide surveys on rural-urban migrants and rural households in China, the first of which were conducted in the year of 2008-2009, and the second in 2014-2015. Working with a joint team from Peking University (PKU) and China Academy of Science (CAS), I have participated in both surveys as the organizer of the filed survey, and also a surveyor, so the data are first-hand to me.

As noted above, the two surveys have different but closely related subjects. On the one hand, the 2008-2009 survey is designed for the study of temporary urban migrants, also known as the floating population. On the other hand, the 2014-2015 survey is designed for the study of rural households. The specific subject of the survey includes all members of a rural household, including the ones who are currently migrating in cities, so information on the floating population is also collected.

4.1.2 Sampling

The 2008-2009 Urban Migrant Survey

The 2008-2009 urban migrant survey was conducted from July 2008 to June 2009, and was designed to collect information on the complete living and working status of the migrant workers through a 50-page structured questionnaire (detailed in the next "Questionnaire" section).

We chose the subjects of the survey using a stratified random sampling method. In the first step, based on prior knowledge of China' urbanization conditions, we chose 12 cities in 8 provinces, covering all three mage-city regions (The Bohai Bay Region, Yangtze River Delta, and Pearl River Delta) and another important, but smaller city region (the Chengdu-Chongqing Region)[48]. The sizes of the chosen cities in each region range from small to middle-sized county or prefecture-level cities to mega-cities with more than 5 million population. The sampling of the cities, therefore, constitutes a full spectrum representative of the geographical and size distribution of China's city system. Then, in the second step, we randomly select 200 temporary rural-urban migrants in each city, and we thus finally have a total of 2398 valid respondents across the country, who are from 958 different counties, constituting a very representative sample (*Figure 25*).

[48] See appendix for details concerning the sampling in this survey.

The 2014-2015 Rural Household Survey

The 2014-2015 rural household survey was designed as a follow-up of the 2008-2009 survey, and was conducted by the same surveyor team. As the previous survey was mainly concerned with the migrant workers and to a large extent lacked the coverage of their household and home status, we decided to divert the focus of the survey to the origins, rather than the destinations of the rural-urban migration as we did in the previous survey. The survey was conducted from August 2014 to August 2015.

Again, we employed a stratified random sampling method, but with a different strategy in the first step. Based on our prior knowledge on China's population and migration geography, and also taking a reference from the distribution of the origins of the migrants in the previous survey, we chose 100 villages in 25 counties, covering 13 provinces in all major regions of China. We then randomly select 20 rural households in each of the villages[49]. Thus, we finally have 2097 valid household respondents, whose members go to 260 destination cities, also constituting a very representative sample (*Figure 26*).

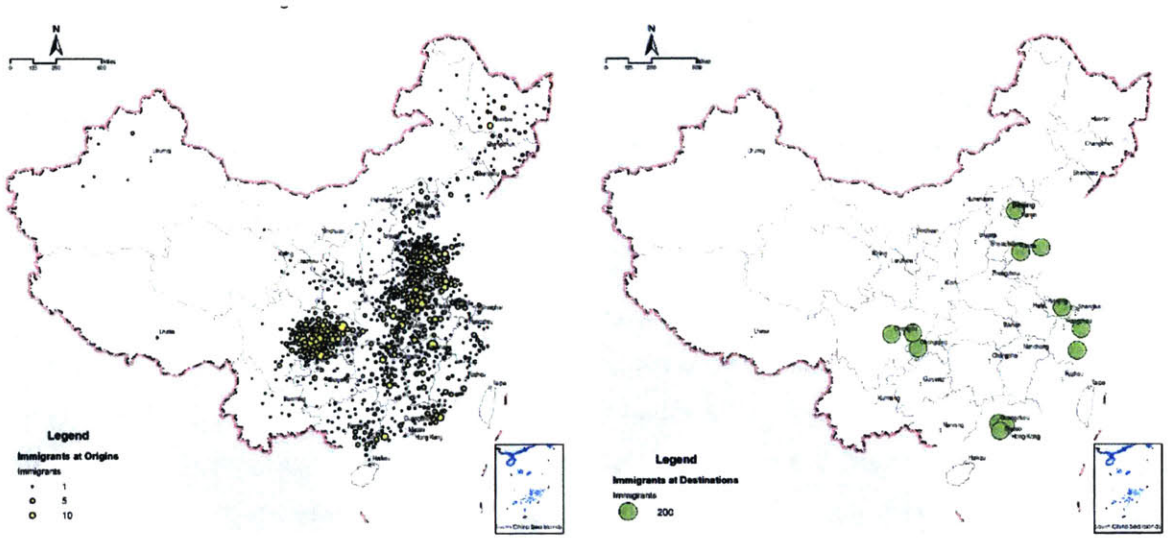

Figure 25 Migrant Samples at Origins and Destinations, The 2008-2009 Survey.[50]

[49] See appendix for details concerning the sampling in this survey.

[50] Source of data is from the respective survey. The same hereinafter if not otherwise indicated.

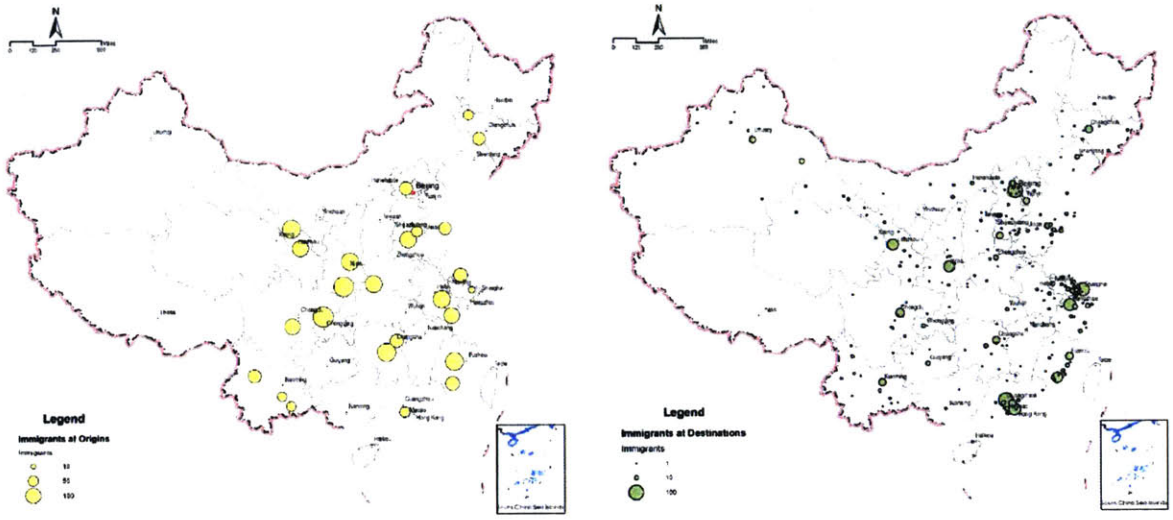

Figure 26 Migrant Samples at Origins and Destinations, The 2014-2015 Survey

4.1.3 The Questionnaires and Variables

Both surveys take the form of a structured (questionnaire-based), in-depth interview during which a trained surveyor interviews the respondent who does not see the questionnaire. The aim of both surveys was to collect information on all major aspects of the living and working status of the rural-urban migrants and rural households. We designed the questionnaires to this end, which is in many dimensions similar to other surveys with similar aims, such as the World Bank's Living Standard Measurement Surveys (LSMS) (Grosh & Glewwe, 2011). The content of the questionnaire covers a wide range of the life of rural and migrant households, including information on their personal and household demographics, capital properties possession, land tenure, work and migration experiences, social networks, and everyday living status. The original questionnaires are in Chinese. A translation of the relevant content of the questionnaires is available in the appendix.

Although the questionnaires used in the two surveys are not exactly the same, they are largely compatible. Moreover, the two surveys followed similar sampling approaches. Therefore, their results constitute two cross-sections, and can be used either separately for cross-sectional analysis, or be pooled for longitudinal analysis. It should be noted, nevertheless, that some variables may still only be available in one survey, thus analysis with such variables are only applicable for the respective year. For example, as the 2008-2009 survey data do not have a key independent variable

– location of farmland tenure (in terms of distance to county seat city), an FFB Model cannot be fit using the data. As a result, I only fit the FFB model for the 2014-2015 survey year.

I draw variables for this study from the questionnaires. For the dependent variables, I use the respondent' intention for a permanently settlement in the city where he/she migrates as the dependent variable in the USI model, and use his/her intentions for trading own farmland tenure for three levels of urban Hukou-equivalent benefits as the dependent variables in the FFB model. The respective questions are directly asked in the questionnaires, so the coding of the variables is straightforward.

The independent variables included in the analysis can be categorized into five groups: the personal attributes of the respondent, the household attributes of the respondent, the temporal-spatial pattern of migration of the respondent, current work status of the respondent, and the socio-economic conditions of the respondent's migration origin and destination places. Similarly, the coding from the questions to the variables is straightforward. A list of all variables is shown in *Table 55*, and I will elaborate on the exact meanings of the variables in the specifications of the models below.

Table 55 Variables in the Models

Variable Group	Variable Name	Variable	Variable Type
Dependent Variables	Urb_Int	Intention of permanent stay in cities	Dummy
	FarmforEdu	Trade farmland for free compulsory education (9-year) in the city	Dummy
	FarmforAllowance	Trade farmland for free compulsory education and subsistence allowance in the city	Dummy
	FarmforHousing	Trade farmland for free compulsory education, subsistence allowance, and housing aid in the city	Dummy
	FarmforBenefits	Ordered preferences over the above options	Ordinal
Personal Attributes	Male	Sex-male	Dummy
	Age	Age	Scale
	Married	Marital status-married	Dummy
	Edu	Education-years	Scale
	Minority	Minority	Dummy
	VilCnlMember	Village council member	Dummy
	MilService	Military service	Dummy
	CCPMember	CCP member	Dummy

Household Attributes	HH_Size	Number of persons in household	Scale
	ES_SchoolKids	Number of children who go to primary and secondary schools	Scale
	HEduKids	Number of children who go to high school or college	Scale
	UnmarriedWorkingKis	Number of unmarried and actively working children in household	Scale
	Elders	Number of senior person over 65	Scale
	HouseSize	Area size of resident in home village	Scale
	HH_PCIncome	Per capita income of household	Scale
Migration Experiences	CityStayYears	Years staying in cities	Scale
	MigWithinProv	Distance of migration-within original province	Dummy
Work Status	SelfEmploy	Self-employed	Dummy
	JobStab	Job stability - time employed in current job	Scale
	JobMonthIncome	Current monthly income from the job above	Scale
Migration Origin and Destination Development Status	Mig_Ori_County_Popu	Total population in migration origin county	Scale
	Mig_Ori_County_Urban_Popu	Urban population in migration origin county	Scale
	Mig_Ori_PcGDP (Ln)	GDP per capita in home county (Log transformed)	Scale
	Mig_Ori_Vil_Dist_County	Distance from home village to migration origion county	Scale
	Mig_Des_City_Urban_Popu	Urban population in migration destination city	Scale
	Mig_Des_City_First_Tier	Migration destination city is a first-tier city	Scale
	Mig_Des_City_PcGDP (Ln)	GDP per capital in migration destination city (Log transformed)	Scale

4.2 Effects of Relaxation of Urban Hukou Acquisition Restrictions and the Determinants of the Migrants' Urban Settlement Intentions: the USI Model

The 2014 Hukou reform, which was announced on July 24, 2014, a time spot right before we started the 2014-2015 survey, provides an opportunity to observe the impact of a sudden policy change. Given the short time interval between the announcement of the new policy and the survey, it is unlikely that the new policy would have effected people's urban settlement *actions*. However, the policy change, which was well acknowledged by the general public, may have an immediate effect on the migrants' urban settlement *intentions*. We thus take the latter as the subject of this study.

As the reform only relaxed urban Hukou acquisition restrictions in small and middle-sized cities, it provides an opportunity to directly test Hypothesis 1. If the migrants' urban settlement intentions were indeed generally suppressed by the urban Hukou acquisition restrictions, the relaxation of such restrictions in some cities would have effectively incented the migrants to

express higher settlement intentions in these places. Therefore, a simple method to perform the test is to do a Chi-square test for the following Null Hypothesis:

H_0: the migrants' urban settlement intentions in small and middle-sized cities in the 2014-2015 survey is significantly higher than those in the 2008-2009 survey.

Where "small and middle-sized cities" can be technically defined as the cities where urban Hukou acquisition restrictions had been removed in the 2014 reform. In other words, they are the cities not appearing in *Table 53*.

However, such a naive comparison may be misleading, as the change, if any, may well be attributed to certain endogenous or exogenous contributors of urban settlement intentions discussed in section 2. I thus develop a discrete choice model, the Urban Settlement Intentions (USI) Model, to control for these effects.

4.2.1 The Urban Settlement Intentions Model: Discrete Choice Model Design

The Urban Settlement Intentions Model examines the effect of relaxing urban Hukou acquisition restrictions in the smaller cities on the migrant's settlement intentions, as well as other factors contributing to the formation of the intentions. The model takes a 0/1 dummy variable of the migrants' urban settlement intentions as the dependent variable, the information of which I draw directly from the surveys. To examine the effect of the policy change, I construct another 0/1 dummy variable (the Treat variable) indicating whether a migrant was in a city where urban Hukou acquisition restrictions were removed in the 2014 reform. Controlling for other contributing factors, if the regression coefficient of this variable is positive and statistically significant, then the relaxation of urban Hukou acquisition restrictions in the treated cities (small and middle-sized cities) has indeed incented the migrants' permanent settlement intentions in these places. Otherwise, one cannot draw any conclusion concerning the effect of such a relaxation on the migrants' urban settlement intentions. In the latter case, Hypothesis 1 is tested.

As the dependent variable is binary, the model takes the Probit form, which has the following form:

$$\text{Prob}(\text{Y} = 1|\text{X}) = \int_{-\infty}^{X'\beta} \phi(t)dt = \Phi(X'\beta)$$

Where $\Phi()$ is the CDF for the Standard Normal Distribution, and X is the vector that contains the independent variables that are assumed to influence the outcome. The model coefficients vector, β, is estimated by maximum likelihood.

I fit the model using a pooled sample from both surveys. To capture any other temporal difference that are not covered by other independent variables, I use another 0/1 dummy variable indicating the survey time of each sample. This dummy variable also examines whether there have been systematic changes in the migrants' urban settlement intentions between the two surveys.

4.2.2 The Independent Variables

As endogenous and exogenous determinants of the migrants' urban settlement intentions, the five groups of independent variables described in Section 3.1.2 all enter the model. I present reasons for including each of the variables and their expected effects below. It should be noted that most of the variables are also included in the FFB model, in which case I make remarks on their specific roles in the FFB model, too, and will not repeat in the next section's description of the FFB model.

Individual Personal Attributes

Analyses in Essay 2 have shown that the migrants' personal attributes influence their migration and permanent settlement behaviors in various ways. These attributes include basic demographic information such as sex, age, marital status, and ethnicity, human capital factors such as education, and indicators of one's social capital possession such as being a member of village council or the Communist Party, or experiences of service in the military. Results from Essay 2 and other sources of literature (for example, see Chen & Ye, 2013; J. Wen, 2006; Zuhui Huang, Wenrong Qian, & Yingchun Mao, 2004) indicate that migrants with better human and social capital endowments are more likely to intent to settle permanently in cities. Also, such intentions have a clear relationship with one's life-cycle characteristics, with the young, male, and unmarried more likely to have a higher urban settlement intention.

Household Attributes

Uncovered in Essay 2 and also predicted by the theory of the New Economics of Labor Migration, the migrants' intentions for a permanent urban settlement concern more of the status of the entire household, rather than that of the individual migrants themselves. Specifically, these concerns are twofold. On the one hand, some life-cycle related factors, including small school children (those going to elementary and secondary schools) and elder people in the household, may constitute "burdens" of the household and thus is an inevitable factor in a migrant's planning for the future. I thus include the following variables in the models: the size of household (in terms of persons count), the number of children in the household going to elementary and secondary

schools, and the number of elder people over 65 in the household. On the other hand, grown-up children in the household who are unmarried and have already joined the work force, and those of higher educational experiences constitute hopes of the future. Thus, I also include the respective variables in the model: the number of children who go to high school or college, and the number of grown-up, unmarried children who are actively working.

Further, a household's capital property possession is also an important factor in its settlement location decision-making, as suggested by Essay 2. These should include the movable and real properties. However, due to the lack of reliable information from the surveys concerning these data, I opt to use two proxies to convey the information. The first variable, the area size of the household resident in the home village, is representative of the real properties, which in most cases is the main real property of the household. As for the household's movable possessions, as it cannot be easily and reliably retrieved from the surveys, I use the variable of per capita income of a household as a proxy, as the savings from the income of the household members constitutes nearly the sole approach for a rural household to accumulate its capital properties.

The Temporal-Spatial Pattern of Migration

The past migration experience of a migrant may have two kinds of impacts of opposite directions on the migrants' permanent urban settlement intentions. On the one hand, studies show that a long city-staying experience makes a migrant getting more accustomed to the urban lifestyle, which contributes to a stronger urban settlement intention. On the other hand, an prolonged temporary city living experience may also makes one to realize the practical difficulties to permanently settle down, thus negatively affecting one's settlement intentions (Brown, 1997; Liu & Reilly, 2004). Overall, the final impact may be related to the migrant's length of stay in cities, though the "tipping point" in terms of length of city stay varies in different studies (H. Zhang, 2010). I thus include the variable of city stay length in the model, as well as its squared term, to examine the possible reversed effect of an excessively long migration experience.

Similarly, the distance of migration also plays double roles in affecting a migrant's settlement intention in the city. A longer distance of migration may hamper the migrant's connections with the home town (Banerjee, 1984; Funkhouser, 1995), but it may also mean greater cultural differences. Again, the direction of the overall effect is unclear though merely qualitative analysis. Considering China's vast regional cultural and linguistic differences, I include in the model a dummy variable indicating whether a migrant migrates within his or her original province, and another variable indicating whether a migrant migrates within his or her own linguistic region.

Work Status

The final group of endogenous determinants concerning a migrant's urban settlement intention is about his or her work status. After all, getting a job is the predominant reason for China's rural residents to migrate to cities. The wage of the job is naturally a good factor to examine, and the stability of the job and the nature of employment are also possible factors to consider. I use the length of employment in a migrant's current job as a proxy for the stability of the job, and a dummy variable indicating whether a migrant is self-employed to represent the nature of employment.

Migration Origin and Destination Socio-economic Conditions

As indicated by the Push-Pull theory, the socio-economic conditions in the origin and destination of a migrant are the main exogenous factors affecting the migrant's final settlement choice. From the origin side, the effect of a more developed hometown could be twofold. On the one hand, a more developed hometown may mean better income and welfare provision back home, in which case it may become attractive for the migrants to return migrate. On the other hand, however, migrants from a more developed place may also be better educated or have accumulated more capital properties, such that they are more likely to long for an urban life, and are also more capable to do so.

From the destination side, a larger, more developed city also has both positive and negative attractions for a migrant. Such cities are undoubtedly superior in terms of job opportunities and income prospects, as well as high-quality welfare and public services, which all constitute attraction for a potential permanent migrant. However, large cities can also be expensive, and the better job opportunities may require higher education or skill endowments which most migrants do not possess. These all may discourage a migrant from permanently settling in the larger, more developed cities. Let alone the urban Hukou acquisition restrictions in some of the large cities, which constitute a major barrier of permanent settlement for a migrant.

Because of the uncertain effects, a quantitative examination is necessary. Specifically, I include in the model the per capita GDP in both origin and destination places of the migrants as a general indicator of the socio-economic development of the places. Moreover, I include another variable – the urban population of the destination city, which in China's context is also a proxy for a city's development conditions. Lastly, I include one additional variable indicating whether a destination city is first-tier. As discussed earlier, the first-tier cities have a "hard" urban Hukou acquisition restriction, thus the migrants' settlement intentions in these cities are worthy of particular

examinations. If the settlement intentions are significantly lower in these cities than in others, then the hard restrictions have indeed constituted an institutional barrier. Otherwise, there probably exists self-sorting, and thus the institutional barrier may not be explicitly effective.

4.3 The Value of Rural Farmland Tenure Rights Attached to Rural Hukous: the FFB Model

Hypothesis 4 implies if the rural Hukou holders do cherish their farmland tenure rights, they should expect compensation in return for giving up such rights. However, letting the rural Hukou holders to directly estimate the potential value for their farmland tenure may inflict great bias, as such estimations could be very subjective and thus lack a common ground for comparison. Rather, we used an indirect approach of estimating the land values in the surveys. As discussed in section 2, farmland tenure rights attached to rural Hukous is like the social security for the rural residents. Therefore, one could reasonably imply that rural Hukou holders may expect certain forms of welfare and public services as a compensation for giving up their farmland tenure. Moreover, as the potential value of the rural farmland tenures varies with the location of the land, one should expect those with higher valued farmland tenures to ask for more in return. We thus designed a group of questions in the questionnaire asking the respondents hypothetical questions about on what terms would they be willing to give up their rural Hukous (as well as the farmland tenure rights attached to them) for urban ones. Three candidate terms are offered, with incremental values of compensation:

Option 1: Farmland for free compulsory education for the child(ren) in the family;

Option 2: Farmland for free compulsory education for the child(ren) in the family, plus a subsistence living allowance for everyone in the family;

Option 3: Farmland for free compulsory education for the child(ren) in the family, plus a subsistence living allowance for everyone in the family, plus certain forms of housing aid in the urban places.

The respondents may elect either of the options, or none if they are not satisfied with the most generous offer provided (Option 3). Therefore, with dependent variables constructed directly through these questions, a group of discrete choice models can be built.

I construct four models in this model group. Models 1-3 are discrete choice models with 0/1 dummy variables corresponding to each of the options as the dependent variable, all taking the Probit form. Further, the fourth model is an ordered Probit model, with an ordinal variable

constructed from the combination of the three options as the dependent variable (1 – Yes for Option 1; 2 – Yes for Option 2; 3 – Yes for Option 3; 4 – Not satisfied with either of the options).

The independent variables are generally the same with the USI model, with a few exceptions. First, as the focus of examination of the model, I include a variable indicating the location of the farmland, which is represented by the distance from the farmland to the county seat city. Second, as I mentioned in the data description section, due to data constraints, I only fit the FFB model with the data from the 2014-2015 survey. The Time dummy variable, therefore, is not necessary. Also, because I don't expect the relaxation of urban Hukou acquisition in some cities would impact the migrants' attitude toward their rural land property rights, controlling for the factor is not necessary in the model. Thus, the Treat dummy variable should not be included, either. Lastly, for similar reasons, regarding the variables concerning the exogenous factors, the focus should be placed more on the origin places of the migrants, rather than on the destination places as in the USI model. Therefore, I replace the variables indicating the urban population and the first-tier status with two variables indicating the total population and urban population of the origin county of a migrant. These two variables also serve as proxies of the potential economic value of the farmland. The per capita GDP variables, however, are kept as a general indicator of socio-economic development conditions. The descriptive statistics of the variables in both models are given in

Table 56.

Table 56 Descriptive Statistics of the Variables in the Two Models

Variable	The Urban Settlement Intentions Model					The Farmland for Benefits Model				
	N	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation
Urban Settlement Intention	1971	0	1	0.48	0.5					
FarmforEdu						717	0	1	0.495	0.500
FarmforAllowance						717	0	1	0.637	0.481
FarmforHousing						717	0	1	0.739	0.439
FarmforBenefits						717	1	4	2.128	1.275
Time (2014)	1971	0	1	0.395	0.489					
Treat (Cities without urban Hukou Acquisition Restrictions in 2014)	1971	0	1	0.150	0.357					
Male	1971	0	1	0.630	0.483	778	0	1	0.704	0.457
Age	1971	11	75	32.810	9.921	778	16	75	34.674	10.040
Married	1971	0	1	0.690	0.463	778	0	1	0.740	0.439
Edu	1971	0	19	8.933	3.290	778	0	19	9.377	3.316
Minority	1971	0	1	0.039	0.194	778	0	1	0.024	0.154
Military Service	1971	0	1	0.056	0.230	778	0	1	0.048	0.213
Village Council Member	1971	0	1	0.020	0.139	778	0	1	0.003	0.051
CCP Member	1971	0	1	0.055	0.229	778	0	1	0.063	0.243
Household Size	1971	1	13	4.770	1.610	778	2	13	5.589	1.769
Elementary and Secondary School Kids	1971	0	4	0.780	0.914	778	0	4	1.098	1.019
High School and College Kids	1971	0	2	0.099	0.352	778	0	2	0.145	0.391
Unmarried and Employed Children	1971	0	3	0.309	0.591	778	0	3	0.553	0.714
Elders	1971	0	4	0.351	0.687	778	0	3	0.582	0.805
House Size	1971	0.000	2200.000	200.090	150.999	778	37.000	1389.000	238.469	153.021

Per Person Income in Household	1971	0.000	168000.000	13101.912	10388.260	778	0.000	94225.000	15792.829	10924.416
City Stay Years	1971	0	39	8.604	6.491	778	1	39	8.805	7.024
City Stay Years Squared	1971	0	1521	116.133	168.700	778	1	1521	126.792	200.606
Migration within Same Province	1971	0	1	0.401	0.490	778	0	1	0.353	0.478
Migration within Same Linguistic Region	1971	0	1	0.461	0.499	778	0	1	0.402	0.491
Self Employed	1971	0	1	0.193	0.395	778	0	1	0.098	0.297
Job Stability	1971	0	30	4.153	4.327	778	1	30	5.339	4.767
Job Stability Squared	1971	0	900	35.964	78.672	778	1	900	51.206	98.671
Job Monthly Income	1971	0.000	50000.000	2362.276	2182.119	778	120.000	30000.000	3481.023	1940.710
Origin County Population						778	246147	3121275	652780.487	312483.332
Origin County Urban Population						778	61985	2740994	209100.887	186663.609
Origin Village Income per Person (Ln)	1971	8.052	11.776	9.895	0.694	778	10.014	11.776	10.495	0.361
Destination City Urban Population	1971	10135	19765388	4130491.130	3997144.604					
Destination City First-Tier	1971	0	1	0.177	0.382					
Destination City PcGDP (Ln)	1971	9.173	12.316	10.810	0.674	778	9.196	12.316	11.220	0.506
Home Village Distance to County Seat City (km)						778	2.0	75.0	30.485	17.637
Valid N	1971					717				

5 Empirical Inquiries: Results

5.1 The Urban Settlement Intentions Model

5.1.1 The Migrants' Urban Settlement Intentions: General Patterns and Temporal Differences

On average, 54.3% of the migrants expressed an intention of permanent urban settlement in the 2008-2009 survey, and the figured dropped significantly to 39.9% in the 2014-2015 survey. Compared to the less-than-20% actual permanent urban settlement ratio of the migrants as revealed in Essay 2, one immediately finds that the intentions here are very optimistic. However, this does not mean that they are unrealistic, for there is after all a long distance from an intention to an action which requires efforts. A comparison between the migrants' urban settlement intentions in large and small cities would prove the realistic nature of such intentions. In both surveys, the permanent settlement intentions in large and small cities are similar. Though the migrants in large cities have slightly higher settlement intentions than those in small cities or towns in both surveys, and the difference became bigger (2.1% vs. 0.8%) over time, the Chi-Square test results are 0.096(sig. 0.773) and 0.445 (sig. 0.527) respective to the two surveys, which indicate that the differences between cities of different sizes are statistically insignificant in both surveys. Obviously, as the quality of life in large cities are generally better than that in small cities, a settlement intention without any real-world constraints should show a difference between the two. Thus, the non-difference results here indicate the realistic nature of the intentions. Meanwhile, the results also indicate that the self-sorting effect discussed earlier probably exists.

Particularly, the results also mean that despite the 2014 reform relaxing the urban Hukou acquisition restrictions in small and middle-sized towns and cities, the migrants' permanent settlement intentions in these places did not go up accordingly. In other words, a naive comparison of the migrants' urban settlement intentions before and after the 2014 reform does not imply any effect in changing the migrants' urban settlement intentions (Table 57). It must be noted, however, that in the absent of controlling for other factors, such a naive comparison yields little meaningful conclusion. I now move forward to the quantitative models for more rigorous analysis.

Table 57 Settlement Intentions of the Migrant Workers, Both Surveys

2008-2009						
Migration Destination / Settlement Intention	Larger cities		Smaller cities or towns		Sum	
	Samples	Percent	Samples	Percent	Samples	Percent
Home village	267	45.3%	287	46.1%	554	45.7%
Migration destination city or town	323	54.7%	335	53.9%	658	54.3%
2014-2015						
Migration Destination / Settlement Intention	Larger cities		Smaller cities or towns		Sum	
	Samples	Percent	Samples	Percent	Samples	Percent
Home village	372	59.2%	272	61.3%	644	60.1%
Migration destination city or town	256	40.8%	172	38.7%	428	39.9%

5.1.2 The USI Model: Regression Results

A complete report of the regression results is presented in *Table 58*. I first fit a "baseline" model containing only the Time and Treat variables. Then, I add other independent variables group by group, until the exogenous determinants of urban settlement intentions are added into the model, thus making a full model. Among different steps of the model, the regression coefficients and their statistical significance remain relatively stable, indicating a stable model overall.

Table 58 Regression Results: the Urban Settlement Intention Model

Model	Baseline		Personal Attributes		Household Attributes		Migration Spatial-Temporal Pattern		Work Status		Hometown and Destination City Conditions (Full Model)	
Variable	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Time (2014)	-0.400***	0.000	-0.409***	0.000	-0.362***	0.000	-0.297***	0.001	-0.203***	0.033	-0.074	0.557
Treat (Cities without urban Hukou Acquisition Restrictions in 2014)	0.065	0.489	0.094	0.334	0.091	0.356	0.003	0.979	-0.010	0.924	-0.142	0.218
Male			-0.098*	0.118	-0.087	0.170	-0.094*	0.150	-0.092	0.168	-0.089	0.181
Age			-0.019***	0.000	-0.022***	0.000	-0.023***	0.000	-0.023***	0.000	-0.023***	0.000
Married			-0.265***	0.001	-0.208***	0.032	-0.264***	0.009	-0.301***	0.003	-0.306***	0.003
Edu			0.069***	0.000	0.065***	0.000	0.061***	0.000	0.064***	0.000	0.064***	0.000
Minority			-0.572***	0.000	-0.564***	0.000	-0.532***	0.001	-0.525***	0.001	-0.537***	0.001
Military Service			0.450***	0.042	-0.028	0.845	-0.062	0.662	-0.033	0.818	-0.028	0.846
Village Council Member			-0.032	0.820	0.424**	0.058	0.489***	0.032	0.492***	0.032	0.498***	0.031
CCP Member			0.056	0.703	0.068	0.642	0.087	0.557	0.075	0.616	0.048	0.750
Household Size					-0.004	0.865	0.003	0.900	0.006	0.809	0.011	0.677
Elementary and Secondary School Kids					-0.041	0.383	-0.047	0.332	-0.055	0.252	-0.054	0.271
High School and College Kids					0.134*	0.127	0.146*	0.104	0.150**	0.096	0.142*	0.118
Unmarried and Employed Children					-0.009	0.880	-0.003	0.958	-0.024	0.692	-0.020	0.750
Elders					-0.053	0.268	-0.024	0.624	-0.025	0.614	-0.025	0.614
House Size					-3.97E-04**	0.060	-4.20E-04***	0.048	-4.22E-04***	0.047	-4.14E-04**	0.053
Per Person Income in Household					5.38E-06**	0.078	6.44E-06***	0.038	8.04E-06***	0.046	8.29E-06***	0.041
City Stay Years							0.043***	0.008	0.041***	0.024	0.042***	0.019
City Stay Years Squared							-0.002***	0.008	-0.002***	0.019	-0.002***	0.015
Migration within Same Province							0.288***	0.000	0.292***	0.000	0.264***	0.000
Migration within Same Linguistic Region							0.166***	0.017	0.160***	0.022	0.090	0.236
Self Employed									0.310***	0.000	0.317***	0.000
Job Stability									0.006	0.773	0.006	0.771

Job Stability Squared									-3.86E-04	0.724	-4.37E-04	0.691
Job Monthly Income									-2.24E-05	0.247	-2.17E-05	0.260
Destination City Urban Population											-1.90E-10	0.986
Destination City First-Tier											-0.184*	0.144
Destination City PcGDP (Ln)											-0.104**	0.096
Origin Village Income per Person (Ln)											0.019	0.768
Intercept)	0.104	0.004	0.376	0.028	0.498	0.017	0.163	0.459	0.111	0.623	1.070	0.236
N	1971		1971		1971		1971		1971		1971	
Pseudo R Square (Cox and Snell)	0.021		0.124		0.129		0.150		0.157		0.160	

Model Format: Probit (All models).

*: P<0.15 (Marginally insignificant)

**: P<0.10

***: P<0.05

5.1.3 The Effect of the 2014 Reform and the Exogenous Determinants of the Migrants' Urban Settlement Intentions

First of all, the Treat variable is notably statistically insignificant in all steps of the model. This is a clear demonstration that controlling for other factors, the partial relaxation of urban Hukou acquisition restrictions in the 2014 reform did not have any effect in changing the migrants' urban settlement intentions in the affected places. Hence, Hypothesis 1 is tested.

Second, another notable feature in the result is that the Time variable remains significant in all steps of the model, until the exogenous determinants are added into the model. In other words, the seemingly apparent temporal difference in the migrants' urban settlement intentions vanishes when and only when the change in the external environment control factors is accounted for. The implication of this result is that while the effects of the endogenous determinants of the migrants' urban settlement intentions remain consistent, the observed considerable difference of such intentions between the two surveys can be attributed to the changed push-pulling forces, i.e., the relative conditions of socio-economic development between migration origin and destination places, an explanation conforming to the Push-Pull theory.

To be specific, urban population in the destination cities and the per capita GDP in the origin places are both statistically insignificant. Similarly, though the destination city being first-tier would negatively affect the migrants' settlement intentions, the effect is marginally insignificant. In comparison, a destination city with a higher per capita GDP will significantly and negatively impact the migrants' settlement intentions. The result is in line with the analysis in section 2 stating that the real reason for a city to adopt urban Hukou acquisition restrictions is its development level, rather than the scale of population per se. Additionally, the result further confirms that the migrants' urban settlement intentions are practical: they have lower intentions to settle in the more developed cities because they know there is a higher threshold, and they thus self-sort out.

5.1.4 Prominent Life-Cycle-Related Patterns Imply a Whole-Household-Oriented Decision-Making Mechanism

Controlling for other factors, the life-cycle related factors generally have a significant impact on the migrants' urban settlement intentions. Except for the gender difference, which shows a marginally insignificant negative impact from being a male, other two factors, age and marital status both have strong and clear impacts. A migrant would have a decreased urban settlement intention as he/she becomes older, and also after getting married. A possible explanation is that these people tend to be "romantic" when they are young and unmarried, but they typically get more "realistic" as they become older and after they get married. In the case of the formation of the urban settlement intention, this means that the young and unmarried migrants would probably try to settle in the cities they migrate to and work in, as long as they have a chance to do so. However, as the migrants get married and thus have household burdens such as raising the children and supporting the aging parents, settling in the cities becomes more of a matter only for the individual migrants themselves, but rather for the their entire household, and the extra household burdens make the economic and social thresholds for settling in the cities even harder to overcome. Thus, they demonstrate a decreased permanent settlement intention after marriage. Similar explanation applies with the age factor, as it is to some extent related to the marriage factor. Overall, though none of the household member variables are statistically significant in the model, the result from the age and marriage variables implies that the formation of the migrants' urban settlement intentions involves consideration over the whole household, a result conforming to the NELM theory, and is also in line with the findings in Essay 2.

5.1.5 Superior Human and Social Capital Endowments Strongly Enhance Urban Settlement Intentions

Another conclusion that can be drawn from the personal attribute variables is the significant impact from the human and social capital factors.

First, education, according to the results of Essay 2, is the most important channel through which a rural migrant getting settled in the city. It is thus no surprise that the regression results show that the more educated migrants have significantly higher urban settlement intentions. This also conforms to the prediction of the dual labor market theory,

as a higher education level means a higher wage, a more stable job, better opportunities of promotion, etc.. Simply put, it means an increased chance of entering the primary labor market, which gives rise to a more optimistic expectation of a future permanent urban settlement.

Second, social capital factors also matter. Village council members possess a greater social capital than ordinary villagers (that is why they are elected village council members in the first place), so they have higher urban settlement intentions than the latter. Similarly, the ethnic minorities are usually in a disadvantageous position when it comes to human/social capital (language problems, cultural conflicts, remote home village location, poorer education, etc.), so they have lower urban settlement intentions than the ethnic majorities.

5.1.6 Fixed and Movable Capital Properties Influence Urban Settlement Intentions in Opposite Ways

Among the household attributes group, the two proxies for the household's capital properties both show significant impacts on the migrant's urban settlement intentions, though the impact from fixed and movable capital properties have different directions. The explanation is instinctive. On the one hand, as Essay 2 shows, the predominant component of a migrant's fixed capital property is the house in the home village. For most migrants, due to budget constraints, the housing investment in the home village and the migration destination city is mutually exclusive. It is thus not surprising that the migrants with more housing investments back in the home village would express lower intentions to settle in cities. On the other hand, Essay 2 also indicates that the common way for a migrant to overcome the entry threshold into the cities is through accumulation of dispensable capital properties, and a higher household income is sure to help.

5.1.7 Migration Length and Distance Significantly Influence Urban Settlement Intentions, while the Work-Related Factors Do Not

As predicted in the previous section, the impact of length of migration on the migrants' urban settlement intentions shows a clear reversed U-shape pattern, with a tipping point at approximately the 13th year from initial migration. Considering the effects of the life-cycle factors, this may constitute the tipping point from a "romantic" to a "realistic" attitude when it comes to the choice of the permanent settlement location. Also, this tipping point comes

considerably sooner than those from most previous studies. For example, a 2010 study gives a tipping point of as many as 30 years (Z. Zhang, Qiao, Li, & Du, 2010). This may either imply a decreased urban attraction or increased rural pulling force, or certain changes in the endogenous mechanism in the migrants' urban settlement decision-making, which is a subject for further studies.

Regarding the impacts from the spatial aspect of migration, again, as predicted, both the migration within original province and the migration within same linguistic region variables show significant positive impacts on the migrants' urban settlement intentions.

The work-related factors, however, are generally insignificant, except for the self-employed variable, which has a positive impact on the migrants' urban settlement intentions. Considering that those who are self-employed are more likely to have a higher household income, as shown in Essay 2, the result is a reaffirmation of the impacts from the household income variable. Other variables in this group, including job stability and income, are not significant, possibly because the lack of variation in the variables. As suggested in Essay 2, most migrants tend to have relatively stable jobs, and similar income levels, though the exact reason is still subject to further studies.

5.1.8 Summary

Overall, the results of the USI model have effectively testified Hypotheses 1, 2, and 3, and are also in line with the existing theories on urbanization and labor migration reviewed in section 3. Overall, the group of factors with the most substantive impacts is the migrants' individual attributes, implying a mainly endogenous factors-driven decision-making mechanism concerning the permanent urban settlement. However, the results also imply that the specific mechanism differs between different sub-groups of the migrants. On the one hand, a higher human and social capital endowment leads to higher urban settlement intentions. Here, it should be noted that the migrants with such endowments only constitute a small portion of the population. On the other hand, the impacts from the life-cycle-related factors should apply to most other migrants who generally lack the education and skills to secure a job "good" enough to accommodate an optimistic permanent urban settlement prospect. The contrast thus implies the existence of the dual labor markets, in which the urban settlement intentions of migrants from different labor markets are formed following very different logics.

Moreover, the prominent life-cycle-related patterns of the migrants' urban settlement intentions imply a whole-household-oriented decision-making mechanism. Under this mechanism, the factors which help to reduce uncertainties in a permanent rural to urban migration, including a long enough city living experience, higher household capital property accumulation, shorter migration distances, and less cultural differences, are all related to higher urban settlement intentions. This is clearly in line with the risk-minimization explanation for household-based rural to urban migration in the NELM theory.

Lastly, the exogenous pushing and pulling forces play a crucial role in shaping the migrants' urban settlement decisions. They alone can explain the vastly different urban settlement intentions between the two surveys, among which the most important factor is the development level of the destination city. The first-tier cities do not place a significant impact on the migrant's settlement intentions, which means that institutional suppression is not a significant force that affects the migrants' urban settlement intentions. However, compared to the endogenous factors, all the exogenous factors combined contribute only a very small part of the pseudo R square, implying the decisive role of the endogenous factors in determining the migrants' urban settlement intentions.

5.2 The Farmland for Benefits Model

5.2.1 The Migrants' Intentions for Trading Rural Farmland Tenure Properties for an Urban Hukou: General Patterns and Temporal Differences

In general, the migrants became more reluctant to trading their rural Hukou (and the farmland tenure rights attached to it) for an urban Hukou (and the welfare and public services associated to it) in the second survey than in the first one (*Table 59*). In the 2008-2009 survey, 72.9% of the respondents would accept at least one of the offers, and 15.9% expressed a definite rejection to all the offers; the respective figures became 68.6% and 23.0% in the 2014-2015 survey. Considering that the third offer is almost equal to the welfare and public services associated with a full urban Hukou, rejecting all the offers effectively implies that the respondent values the farmland tenure more than an urban Hukou. Thus, the increased rejection figure partly explains the decreasing trend of the migrants' urban settlement intentions revealed in the previous analysis.

Further, for those accepting either of the offers, they clearly demand more in the second survey. 58.3% of the respondents in the 2008-2009 survey are satisfied with the

offer with only education benefits, and the figure dropped to 47.6% in the 2014-2015 survey. In contrast, for the offer with education benefits and a subsistence allowance, the figures are 67.1% versus 59.7%: the difference is narrower. Finally, the figures for the third offer are 72.9% versus 68.6%, with a further reduced difference. Given the migrants' stable endogenous preference on a permanent urban settlement, which is revealed in the result of the previous model, the figures above may imply the migrants' increased awareness of the value of their farmland tenure rights.

Table 59 The Migrants' Willingness of Trading Rural Hukou for Urban Hukou with Welfare and Public Service Benefits

2008-2009						
	Education	%	+ Subsistence Allowance	%	+ Housing Aid	%
Yes/Worthy of Consideration	1149	58.3%	1269	67.1%	1372	72.9%
No	600	30.4%	400	21.2%	299	15.9%
No Idea	222	11.3%	221	11.7%	211	11.2%
Sum	1971	100.0%	1890	100.0%	1882	100.0%
2014-2015						
Yes/Worthy of Consideration	468	47.6%	587	59.7%	674	68.6%
No	431	43.8%	313	31.8%	226	23.0%
No Idea	84	8.5%	83	8.4%	83	8.4%
Sum	983	100.0%	983	100.0%	983	100.0%

5.2.2 The FFB Model: Regression Results

A complete report of the regression results is presented in *Table 60*. As noted earlier, the first three models are binary Probit models with the respondents' choices for each of the offers as the dependent variable, and the fourth model is an ordered Probit model with the respondents' ordered preference over the offers as the dependent variable.

Table 60 Regression Results: the Farmland for Benefits Model

Model	Farm for Education		Farm for Education + Allowance		Farm for Education + Allowance + Housing Aid		Full Model: Ordered Probit	
Variable	B	Sig.	B	Sig.	B	Sig.	B	Sig.

Male	0.011	0.922	0.140	0.237	0.010	0.935	-0.045	0.671
Age	0.002	0.762	0.009	0.232	0.008	0.308	-0.005	0.471
Married	-0.052	0.780	-0.247	0.204	-0.189	0.368	0.114	0.503
Education	0.018	0.309	0.002	0.916	0.025	0.203	-0.017	0.292
Minority	-0.239	0.497	-0.071	0.843	-0.211	0.566	0.243	0.429
Military Service	-0.219	0.404	-0.019	0.944	-0.289	0.292	0.183	0.434
Village Council Member	0.289	0.766	-0.277	0.774	-0.197	0.844	0.018	0.983
CCP Member	0.056	0.808	0.140	0.563	0.194	0.480	-0.096	0.648
Household Size	-0.055	0.289	-0.074	0.168	-0.038	0.509	0.058	0.215
Elementary and Secondary School Kids	0.171**	0.081	0.206***	0.039	0.147	0.164	-0.179***	0.043
High School and College Kids	0.026	0.861	0.095	0.533	0.247*	0.145	-0.112	0.405
Unmarried and Employed Children	0.379***	0.001	0.349***	0.002	0.322***	0.009	-0.369***	0.000
Elders	0.069	0.336	0.006	0.931	0.076	0.337	-0.062	0.341
House Size	-0.001**	0.100	-5.03E-04*	0.145	-4.04E-04	0.261	4.50E-04*	0.138
Per Person Income in Household	7.65E-06	0.231	1.53E-06	0.814	-3.81E-08	0.996	-4.22E-06	0.464
City Stay Years	0.018	0.486	0.018	0.501	0.003	0.911	-0.013	0.574
City Stay Years Squared	-0.001	0.432	-0.001	0.320	-0.001	0.411	0.001	0.354
Migration within Same Province	0.426***	0.007	0.474***	0.004	0.435***	0.015	-0.431***	0.003
Migration within Same Linguistic Region	-0.001	0.996	0.027	0.868	0.075	0.671	-0.027	0.852
Self Employed	-0.303**	0.088	-0.448***	0.012	-0.385***	0.042	0.354***	0.024
Job Stability	0.054**	0.079	0.053**	0.091	0.092***	0.006	-0.067***	0.016
Job Stability Squared	-0.002	0.199	-0.002	0.180	-0.002*	0.146	0.002*	0.103
Job Monthly Income	1.69E-05	0.634	2.42E-05	0.506	7.70E-05**	0.066	-3.15E-05	0.328
Origin County Population	2.05E-07	0.549	5.89E-07*	0.104	9.29E-07***	0.006	-4.70E-07*	0.104
Origin County Urban Population	-1.10E-06*	0.129	-1.81E-06***	0.026	-1.41E-06***	0.016	1.22E-06***	0.021
Origin Village Income per Person (Ln)	0.522***	0.009	0.546***	0.010	0.243	0.242	-0.451***	0.009
Destination PcGDP (Ln)	0.040	0.741	0.043	0.727	-0.078	0.559	-0.002	0.986
Home Village Distance to County Seat City	0.011***	0.000	0.012***	0.000	0.010***	0.003	-0.011***	0.000
Intercept	-6.962	.005	-6.846	.008	-2.806	.278		
[FarmforBenefits = 1]							-6.035	0.005
[FarmforBenefits = 2]							-5.644	0.009
[FarmforBenefits = 3]							-5.332	0.013
N	717		717		717		717	

Pseudo R-Square (Cox and Snell)	0.093	0.094	0.095	0.108

Model Format: Probit (Model 1, 2, 3); Ordered Probit (Full Model).

*: P<0.15 (Marginally insignificant)

**: P<0.10

***: P<0.05

5.2.3 A Clear Whole-Household-Oriented Decision, Rather than that of Individual Migrants

Compared to the USI model, the most notable feature in the results of the FFB model is the irrelevance of the personal attribute factors. Indeed, in the USI model, the personal attribute factors constitute the largest contribution to the pseudo R square, while in the FFB model none of the variables is statistically significant. In contrast, the household attributes variables contribute the largest part of the pseudo R square in the FFB model. Clearly, when dealing with farmland tenure rights, the migrants' considerations for the whole household far outweigh those merely for the individual migrants themselves. Thus, we may say that the migrants' subjective urban settlement intentions have some romantic component, but their attitude toward own farmland tenure is rather realistic. After all, as the farmland tenure is a major property of the whole household, they have good reasons to manage it with consideration of the utility of the household as a whole.

5.2.4 Planning for the Younger Generations is a Major Concern, while Condition of the Elders Hardly Matters

Among the household attributes factors, those concerning the children in the household play the most prominent role, while the one concerning the condition of the elders in the household hardly matters. Households with small school children (in elementary and secondary schools) favor the offer of free educational opportunities in the cities, and the preference is clearer (in statistical significance terms) if an additional subsistence living allowance is offered, probably because the allowance could be helpful when a parent must quit work to take care of the school children. Similarly, households with unmarried grown-up children show even stronger interests in the education opportunities as well as in the allowance offer. Obviously, such interests are for the future grand-children who these grown-up children would have after they marry, and the stronger interests may

be a compensation for greater uncertainties in this case. In contrast, households with children in high schools or colleges are not surprisingly indifferent with the education offer, but are interested in the housing aid offer. Given the children's higher education levels, they are more likely to enter the primary urban job market when they graduate, and they are more likely to pursue a higher standard of living as compared to their fellow villagers who are not so highly educated. An urban housing aid, therefore, could be very helpful for these households. The households with unmarried grown-up children also show interests in the offer with housing aids. Again, this may be explained as a compensation they expect for the greater uncertainties such households face.

The condition of the elder people in the household, however, is irrelevant in all models. These results combined show a skew of the households' main concerns toward the younger generations, but relative neglect of the elder members in the household, a result strongly in accordance with that from other studies (Congzhi He & Jingzhong Ye, 2010; Jin & Jin, 2003).

5.2.5 Farmland Tenure Rights Assumes the Function of Hedging against Uncertain Factors in Life

Like in the USI model, an inverse relationship between the migrants' willingness to give up farmland and the factors inflicting uncertainties in the migrants' lives is demonstrated. Those households with migrants having a shorter migration distance, more stable jobs (self-employment could mean a relatively unstable job), higher incomes, and a higher home village development level are more willing to accept an offer than those with opposite endowments for each of the offers, and they are also more likely to accept less generous offers in return for giving up their farmland. Put another way, farmland tenure rights help the rural households hedge against the uncertainties in life. In this sense, they do perform as if the "social security" for the rural households for whom the coverage of a formal social security program is insufficient.

5.2.6 Economic Location of Land Seriously Matters: Expectations of Potential Land Appreciation, not just Agricultural Rent

The results also show the prominent relevance of the economic location of the farmland in affecting the tenure holder's expectations. The main indicator of the location of

the farmland, the distance from the farmland to the nearest county seat city, is the most significant factor in the equation, in both statistical and substantive terms, and it demonstrates a clear inverse relationship between the distance and the expected value of the land: the remoter the land locates, the more likely that the tenure holder is willing to give it up for a benefits offer. Additionally, two other location proxies, the total population and urban population of the migrants' origin county, also affect the land tenure's expected values. A larger home urban population, which implies a steeper rent slope, is related to a lower willingness of giving up the farmland tenure in all models; while a larger overall home population, which when controlling for urban population means a lower level of urbanization, is related to a higher willingness to trade the farmland tenure for urban benefits in model 3, and the relationship is only marginally insignificant in models 2 and 4. Overall, these results indicate that compared to the actual agricultural returns, the farmland tenure holders expect more in return for giving up the land, and the expectation is based on the potential urban rent value of the land.

5.2.7 Summary

Overall, the results support Hypothesis 4, i.e., the rural residents' farmland tenure rights does function as a social security program, though the "social security" here is referred in broad terms, covering many kinds of welfare and public services that are usually provided in the urban places but are either absent or of an inferior quality in the rural places. In weighing the value of their farmland tenure, the migrants care more about the welfare of the household as a whole than that only of themselves; they care more about the long-term support for household members, especially the young ones, than just immediate benefits; they expect the offered welfare and public services could help them through uncertainties in life just like how the farmland tenure functions. All these features imply a very similar role of the farmland tenure with a basket of welfare and public services usually provided by the government. Naturally, lacking such provision, the rural residents resort to their own farmland tenure as a substitute, and ask compensation equivalent in function for giving up such rights.

However, the importance of the economic location of the land implies a second function of the farmland tenure rights to the rural residents: the potential of economic gains from future appreciation of the land. A considerable part of the respondents would not accept any of the offers, despite the fact that offer option 3 is very close to the function of a full

urban Hukou. This fact may have many possible explanations, such as idiosyncratic preferences or psychological reasons, but the following reason must be among the most prominent ones: the (expected) value of their farmland tenure is so high that exchanging it for merely a social security-equivalent compensation is an apparent loss. Though the rural land with such appreciation potentials constitute only a small portion of the farmland, the absolute number of rural household involved could be high[51]. I will discuss the practical and moral implications of this second function of rural land tenure rights in the conclusion.

6 Conclusion

6.1 A New Theory of Institution-Bound, Rational Internal Rural-Urban Migration Behavior

This essay presents a new explanation of China's unique internal rural-urban migration pattern that significantly differs from the traditional theory. According to the traditional theory, China's Hukou system constitutes an explicit suppression on internal rural-urban mobility by creating an institutional barrier for the rural residents and migrant workers to permanently settle in cities. However, I notice that the theory is based on the particular contents of the Hukou system before the 2000s, and through a comprehensive analysis of the evolution of the Hukou system, I show that reforms since then have substantially changed the Hukou system itself, such that the once-existent explicit institutional barriers for the rural residents' permanent urban settlement are to a large extent no more. Indeed, currently, most cities in the country do not have any urban Hukou acquisition restrictions at all. Even in the dozens of large cities where such restrictions still exist, they are relatively flexible and somewhat reasonable as compared to the sharp and stubborn barriers like an "invisible wall" (Chan, 1994) in the past, and the really hard restrictions in a few first-tier cities only affect a very small portion of the population. All in all, the traditional theory on China's Hukou system and its suppressive effect on rural-urban migration, though may hold true before the 2000s, has automatically been rendered obsolete as the basis of the theory does not hold any more.

[51] Estimations on the percent of rural household possessing a land tenure of such nature is about 5% of all rural household, or about 10 million rural households (He, 2013).

Instead, through a review of relevant labor migration theories and also by empirical studies, I propose a new theory explaining China's unique internal rural-urban migration pattern. Like the traditional theory, the new theory still pictures the rural residents' migration and permanent urban settlement behavior as an institution-bound decision-making process. What is different, however, is that the once influential Hukou system plays a marginal role in shaping the migrants' floating style of living. Rather, the institutional factor that does significantly affect the migrants' migration behavior, is China's land ownership policy.

Specifically, I show two mechanisms through which the land ownership policy affects the migrants' migration and urban settlement behavior.

First, China's land ownership policy strictly and effectively forbids transactions of rural land of any form, with the only exception of governmental land acquisition. Thus, it constitutes an absolute guarantee of the rural residents' small land tenure rights, and such rights in turn provides a guaranteed living and shelter for all rural residents in China. Therefore, China's migrant workers are not the desperate landless poor, as is commonly found in the early industry countries and many urbanizing developing countries, who had no choice but to flood into the cities for a living (de Haan, 1999; Elkan, 1967). Rather, with the living and shelter guarantee provided by their land tenure, China's rural residents generally live a reasonable life in the home village, and they migrate to cities for better chances of development, not for survival. Therefore, with such a frame of reference of living standards in the home village, the rural residents have good reasons to be cautious when it comes to big and potentially risky decisions such as the permanent migration of the entire household to a city. In other words, with the basic living and shelter guarantee provided by the land ownership rights policy, China's rural residents can AFFORD a rational choice when it comes to migration and permanent urban settlement.

Second, for those who have determined to migrate to cities for a job, it is not easy to establish a permanent settlement there. From a pure economic perspective, they face two major challenges. First of all, they need an initial investment for establishing a stable residency in the cities, which is usually of a vast amount as compared to the income from a typical migrant job. Then, they need to earn enough to offset the far more expensive living cost in the cities as compared to that in their home villages. Both the challenges require a high level of household income to overcome. However, as suggested by Essay 2, because

most migrant workers are low in education and professional skill endowments, they are typically unable to enter the primary labor market, and thus can usually barely make it to cover their own living expenses and cannot afford those for the entire household, letting alone cumulating enough savings to make the initial investment for a permanent city settlement. In other words, for most migrant workers, they rely heavily on their job income in the city to live there, and it would be economically difficult for them to continue living in the city if they are without a job. Therefore, if, unfortunately, such times come, the rural residents' land tenure rights would offer them a plan B: to return to the home village and enjoy a guaranteed living and shelter. Compared to the alternative city-living scenario in which such guarantee does not exist, it would only be obvious which option a migrant worker may choose.

Overall, the two mechanisms have empowered China's rural residents the flexibility in rural-urban migration and the choice of the permanent settlement place, such that they can rationally choose the living location in different life stages to achieve a maximized utility. Due to the absolute labor surplus in rural places, and a considerable rural-urban wage difference, most rural residents would migrate to cities to try their lucks. However, only those who are able to put themselves in the primary urban labor market can overcome the threshold for a permanent urban settlement and move their households to the city. Others, however, when realizing the impossibility to do so, would eventually return migrate to the home village where they enjoy a "social security" guaranteed by their land tenure rights there. The process is repetitively followed by each generation, thus giving rise to the "Circle of Life" migration pattern as revealed in Essay 2. Moreover, as shown in this essay's analysis, the whole process reflects a rational decision-making mechanism, because the migrants follow a decision-making rationale that perfectly conforms to what the existing theories of labor migration would predict.

6.2 The Practical Implication of the New Theory: Helping Smooth the Urbanization Process

From a practical perspective, I argue that the main social impact of the aforementioned institutions in China is that they help the country avoid the pitfall of over-urbanization.

As suggested by the multi-dimensional urbanization paradigm established in Essay 1, there exist different models of urbanization, and among the many possible classifications of

urbanization models, a widely recognized one is the trichotomy of parallel-, over-, and under-urbanization, which is based on the relationship between population concentration and economic development in the urbanization process(Davis & Golden, 1954). It is said that in the early industrial countries where urbanization also began early, the process of population concentration and economic development progress in parallel. This mode of urbanization is thus called the parallel urbanization, a mode also appears applicable in East Asian economies in their urbanization processes after the Second World War. However, most developing economies have experienced a different model of urbanization in the same period, in which population concentration far excesses the pace of economic development, and the model is thus called over-urbanization, or "pseudo-urbanization", a phenomena widely found in Latin American and African countries, and also some South and Southeast Asian countries (Sovani, 1964). Moreover, an opposite mode, in which population concentration appears to lag behind the pace of economic development, occurs typically in countries which used to have a centrally planned economic system, and the model is thus called under-urbanization(Konrad & Szelenyi, 1977).

In addition to their empirical meanings, it should be noted that the terms of parallel-, over-, and urban-urbanization also convey normative values. Researchers have implied that the first model is good, healthy, and worth pursuing, while the other two both have drawbacks. Specifically, over-urbanization is considered the cause for high urban unemployment, persistence of slums, high crime rate, and inferior public health conditions(Cohen, 2006; Jones & Visaria, 1997), and this is the reason why it is called pseudo-urbanization. Considering the widespread of the phenomena across the world, over-urbanization is regarded one of the major problems that the developing countries face, and researchers widely agree that the direct cause of over-urbanization is the existence of large amounts of jobless and homeless people in cities. These people are usually also the "landless poor", as discussed above, who were forced to leave their home village for loss of land tenure there in the first place, and have to stay in the cities even if they are jobless there because they have no home village to go back to.

China's institutional environment, however, forbids the emergence of such phenomena. First of all, as rural land transactions are not permitted, China's rural residents cannot possibly lose their land tenure, and thus are "forced" to enjoy the living and shelter guarantee provided by the land tenure rights. Thus, by setting up a relatively high rural

living standard (as compared to what would happen to the landless poor) as the frame of reference, the institution has made it affordable for the rural residents to carefully weigh the costs and benefits of urban-ward migration and permanent settlement, so as to facilitate a rational migration and urban settlement behavior and eliminate forced migration into the cities. Second, the rural land tenure rights also provides the migrants an always available plan B, should they meet difficulties in the cities due to unemployment or other reasons. Such an effect is most prominent in the case of mass unemployment events. For example, in the aftermath of the 2008-2009 global financial crisis, millions of migrant workers were laid off as urban industries shrunk, but it hardly constituted any serious shock to the overall stability of the society as the laid-off migrant workers simply returned to the home villages, where they did not need to worry about living and shelter (Chen & Ye, 2013). As the economy recovered in the following years, these people began migrating and working in the cities again as if nothing had happened. Overall, the institution provides double insurance on social stability, ensuring a smoothly developed urbanization process free from the threat of over-urbanization.

More generally, an ideal urbanization process would require the population movement from rural to urban places to occur in an ordered manner. However, in reality, forced rural-urban migration due to the loss of rural land tenures would generate an urban-ward population flow that exceeds the employment capacity in the cities, and fluctuations in the economy would also periodically create surges of surplus labor in the cities. Over-urbanization will inevitably emerge if these problems persist. Thus, a good social institution should prevent the problems from emerging. As suggested in the discussions above, the key of such an institution design is to secure the rural residents' freedom of choosing living locations, including the freedom of urban-ward migration (rather than being forced to do so), and the freedom of return migration (rather than not having anywhere to return to). In fact, similar thoughts have been presented by researchers on development and labor migration before (Skeldon, 2012; Wickramasekara, 2011), and studies have shown how bad the situation could turn out to be in places where no such institutions exist (Collinson et al., 2006). Oddly enough, China's institutions, though bearing inequalities in every possible way, have offered the rural residents such freedom. Specifically, the land ownership policy has empowered and also encouraged a rational behavior of rural-urban migration and permanent urban settlement, and the remnant of urban Hukou acquisition restrictions in

some large cities provides an additional deterrent to not-so-prudent migration behavior (for those who cannot enter the primary labor market and thus apparently lack the ability to establish a decent residency in the cities), though it only affects a very small portion of population and the effect does not seem significant, either. The two institutions combined help China ensure the stability and order for an urbanizing society of a huge scale, and thus avoid over-urbanization. Directly or indirectly, such an urbanization process in order ultimately benefits all members of the society.

Moreover, in international comparison, this is a rare achievement, and similar successes are found almost only in other East Asian economies, including Japan, South Korea, and Taiwan, where in general protective rural land tenure rights policies similar to China's, as well as certain forms of household registration system were also adopted in their rapid urbanization eras. At the same time, like China, these are also the economies with the most impressive economic development records after the Second World War (Lin, 2012). Analysis in this essay, as well as research from other sources (Lee, 1979; Rigg, 2006) indicate that the similarity is not merely a coincidence: a protective small rural land tenure rights policy that empowers the rural residents the freedom of choosing living locations, complemented by certain forms of internal mobility management policies that encourage only rational population movements, constitute the key institution that ensures a stable and healthy urbanization. This is the main policy implication of the essay, and is also one other developing countries should consider learning from if they aim to copy the East Asian development successes.

Nevertheless, I realize that the theory does rely on some particular assumptions to hold, some of which may not apply to other countries. For example, a relatively equal division of rural land such that all rural residents are entitled a certain amount of land tenure, as is the case in all East Asian economies after the Second World War, is a prerequisite for the protective land ownership policy to take its empowering effects. Otherwise, the policy will be rendered pointless as most rural residents would not even be affected in the first place. For another example, a rapid and sustained economic growth, again as is the case in all East Asian economies after the Second World War, may also constitute an assumption for the "Circle of Life" model of urbanization to work. Yet another such assumptions may include cultural or social factors, such as the importance of a house ownership in establishing a residency in the cities (which is important in the Chinese

culture and thus lifts the urban-settlement threshold). Overall, in borrowing from the policy lesson, other developing countries should take into consideration their own contexts, and make policies that empower the rural residents' freedom of choosing living locations and that encourages a rational migration behavior accordingly.

6.3 Further Discussions on China's Hukou System and Land Policies: the Moral Dimension and Prospects for Future Reforms

As a final remark, I discuss the moral implications of China's Hukou and land ownership institutions, and present a few suggestions for future reforms.

In general, there are innate inequalities embedded in each of the institutions, though the inequalities are of different directions. On the one hand, the urban Hukou acquisition restrictions in some large cities still includes human capital and wealth possession thresholds that are by no means necessarily related to one's status of residency per se. Though there are opinions arguing that such restrictions are a discretionary power of local governments under some circumstances(Frug, 1984), they after all constitute an institutional discrimination against the rural-urban migrants.

In contrast, on the other hand, the land ownership policy, by only protecting rural land tenure rights and not even granting urban residents such rights, clearly favors the rural residents. In some sense, this can be viewed as a compensation to the rural residents for their disadvantageous position in the Hukou system in terms of welfare and public service provision. However, even though the state guarantees the rural residents' basic living and shelter rights through the land ownership policy, such guarantees are bounded to specific locations – the rural residents' home villages. By all means, this is a restriction to the rural residents' rights of free choice. Moreover, the analysis in this essay reveals another inequality brought about by different economic location values of the rural land tenures among the rural residents. Though the collective land is equally divided among the village collective members based on agricultural yields, such a division could be unequal when the locational rent of the land tenures is at concern, which is just the case in the real world. Thus, though the land tenures for most rural residents only constitute a basic living and shelter guarantee, a small portion of them with superior economic locations may worth much more, thus causing inequality, and also increasing conflicts in governmental land acquisition practices (He, 2011).

On balance, the odd combination of the two institutions with discriminations of opposite directions has so far helped ensure a stable urbanization in China, and they are effective policies in this sense. However, with China's urbanization proceeding to the second half, it is manifest that these policies are unsustainable. On the one hand, the discrimination in the Hukou system in terms of differentiated rural and urban welfare and public service provision is gradually becoming an issue of political debates. Though its relative deprivation on the rural residents may have been tolerated in the beginning stage of China's urbanization and economic development as people's absolute living standards have been generally improving, it will become more and more intolerable over time as the socio-economic development reaches a higher level, a phenomenon Alexis Tocqueville once wisely predicted (Chan & Zhang, 1999; Huang, 2010). On the other hand, concerning the land ownership policy, though the protected rural land tenures have been functioning like the social security for the migrants, the fact that the rural residents need this alternative form of social security per se implies an underdeveloped status of the real social security system, which, again, will become more and more intolerable as the country develops. Moreover, in practical terms, on the one hand, with the country gradually turning into an urban-dominant society, the risk of over-urbanization will be declining accordingly, and thus weakening the land ownership policy's effects in preventing over-urbanization. On the other hand, the land ownership policy has helped maintain a very stubborn small rural land ownership. With the increasing loss of rural population, the lack of rural land transaction channels will not only become an obstacle for the further development of rural economy through reasonable land concentration, but also cause over-investment in rural developments which will wear down the momentum of the country's urbanization (Hui & Bao, 2013).

Looking ahead, reforms are called for, but the specific approach of such reforms is under controversy. Some suggest a complete abolition of the Hukou system as well as the land ownership policy and thus let all factors of production to freely flow, so as to achieve an optimal economic output. Specifically, they argue that the rural residents can acquire the capital investment necessary for establishing a permanent city residency through selling their rural land tenure, such that the urbanization process can be further pushed forward (Zhou, 2010). Given the analysis in this essay, I argue that such a shock therapy is doomed to fail, as it would diminish all the empowering functions of the current institution and can

only create a mass volume of the landless poor, whose (previous) land tenure is worth so little that can hardly be traded for anything meaningful to accommodate a permanent city settlement. Moreover, even for the fraction of rural residents whose land tenure happens to be valuable, such values are after all from the externality of the economic development of the whole society. Lacking such social institutions as the property tax, attributing the land value appreciation only to the original owner of the land would be a violation to justice. Lastly, such a radical proposal is not in line with China's long-time tendency of incrementalism when it comes to policy reforms, and is thus very unlikely to become the reality.

A more realistic approach to reform, I argue, must maintain the empowering function of the current institution while getting rid of the aforementioned double distortion it has created, so as to assure an ordered urbanization and economic development. Since the key feature of the double distortion is that rural land tenure rights is coupled with the social security function which it should not have conveyed, the basic strategy is to explicitly provide basic social security and public service coverages to the rural residents, with no discrimination in terms of the quality of the benefits, such that such functions of rural land tenure rights can be replaced. When this is achieved, it would be unnecessary to maintain the rigid farmland transaction ban, and the relaxation of such a ban would facilitate a more efficient use of the farmland as a factor of production. This, of course, requires additional financial inputs, and therefore for fiscal feasibility considerations and also to provide some incentives to the local governments which carry out the reform, the "Farmland for Social Security" strategy, mentioned earlier in this essay, may constitute a practical way to carry out the reform, though the specific terms for the transaction need to be carefully made with the specific contexts of different locales.

Also, when the universal social security system is established, a migrant worker will not have to go back to the home village to get access to the benefits any more. Thus, the only obstacle that remains for a permanent urban settlement is the housing problem of the migrant worker. Then, if the government aims to promote urbanization, it may achieve the aim by providing universal housing aids to the migrant workers. Again, this involves extra financial inputs, and similar to the "Farmland for Social Security" strategy, a "rural homestead for urban housing aids" strategy may be employed to enhance fiscal feasibility and also to incent the local governments to carry out such reforms. However, because such

reforms concern the basic rights of shelter for the migrant workers, any faults in carrying out the reforms may cause mass homelessness, which would in turn inflict serious social problems. Such reforms, therefore, must be designed and carried out with much prudence.

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Appendix

I. Questionnaire for the China 100-Village Rural and Migrant Household Survey (2014-2015)

Below is a translation of selected questions in the 2014-2015 rural and migrant household survey. Only the contents that are related to the analyses in the essays are covered. It should be noted that the questionnaire for the 2008-2009 migrant population survey is largely compatible to the one used in the 2014-2015 rural household survey, only with a few differences. I note the differences below using footnotes wherever applicable.

Cover Page

Name, Address[52], and Contact Information of Respondent;

Name of Surveyor;

Date of Interview.

A Household Members

For each of the household members: relationship to the household head, gender, year of birth, marital status, Hukou type (rural/urban), ethnicity, if a current student, education level (in years), if a member of the village council, if a member of the China Communist Party, if had served in the armed forces, if currently migrating.[53]

B Employment

For each of the household members as listed in Section A who is not currently at school and is over 6 years old:

[52] The address here refers to the original village of the rural households in the 2014-2015 survey, and the current (city) address as well as the original address of the migrant workers in the 2008-2009 survey. However, not all respondents in the 2008-2009 survey provided the village-level original address; some of them only provided a county- or township-level address.

[53] The term "household" here refers to the extended family in the 2014-2015 survey, and the core family in the 2008-2009 survey.

B1 Current Employment

01 Employment in 2014 (1 Not employed; 2 Agricultural only; 3 Mainly agricultural, occasionally non-agricultural; 4 Mainly non-agricultural, occasionally agricultural; 5 Non-agricultural only).

02 Year first migrated out of the county to do a non-agricultural work.

03 If never migrated out of the county to do a non-agricultural work, why?

04-15: for the main agricultural job in 2014:

04 Type of employment (1 Private sector; 2 Public sector; 3 Self-employed).

05 Profession.

06 Profession description.

07 Begin year of the job.

08 Average number of months worked for this job in a year.

09 Months worked for this job in 2014.

10 Average monthly income for this job in 2014.

11 Place of the job (1 Original village; 2 Original township; 3 Original county; 4 Original Prefecture; 5 Original Province; 6 Outside of original province; 7 Foreign country).

12 Place of the job, province name.

13 Place of the job, county name.

14 Channel from which the employment information is gained.

15 If quit the job after 2014, why.

16 Besides the job, all non-agricultural income from other jobs in 2014.

17 Remittance in 2014.

18 How has the household spent the remitted money?

19 Any reverse remittance in 2014?

20 Reverse remittance in 2014.

B2 Previous Non-Agricultural Employment outside of Original County

For each of the household members in Section B1 who had previously migrated out of the original county to do a non-agricultural job:

21 Type of employment (1 Private sector; 2 Public sector; 3 Self-employed).

22 Profession.

23 Profession description.

24 Begin year of the job.

25 Months worked for this job.

26 Average monthly income for this job.

27 Place of the job (1 Original Prefecture; 2 Original Province; 3 Outside of original province; 4 Foreign country).

28 Place of the job, province name.

29 Place of the job, county name.

30 Channel from which the employment information is gained.

31 If quit the job, why.

B3 Migrant Workers' Living Conditions and Settlement Intentions

For each of the household members in Section B1 who works outside of the original county in 2014:

32 Does he/she come back to home village to celebrate the spring festival? (1 Always; 2 Usually; 3 Sometimes; 4 Seldom)

33 Does he/she come back to home village to celebrate the Qingming festival? (1 Always; 2 Usually; 3 Sometimes; 4 Seldom)

34 Does he/she come back to home village to celebrate other holidays, such as the National Day or the Labor Day? (1 Always; 2 Usually; 3 Sometimes; 4 Seldom)

35 Does he/she come back to home village to attend community events, such as weddings or funerals? (1 Always; 2 Usually; 3 Sometimes; 4 Seldom)

36 Does he/she come back to home village during intense farming seasons to help? (1 Always; 2 Usually; 3 Sometimes; 4 Seldom)

37 If the non-agricultural job conflicts with the household's farming needs, which job has the priority?

38 In the long run, which of the following place do you (the respondent) hope he/she to permanently settle at? (1 City where he/she currently work in; 2 Hometown's central county seat town or city; 3 Hometown's central township center; 4 Home village; 5 No idea; 6 Wherever is best for future personal development)

39 In the long run, which of the following place does he/she hope to permanently settle at? (1 City where he/she currently work in; 2 Hometown's central county seat town or city;

3 Hometown's central township center; 4 Home village; 5 No idea; 6 Wherever is best for future personal development; 7 Can't know his/her idea)

40 Name three most prominent difficulties if he/she were to settle permanently in the city?

41-43: a group of questions asking the respondent hypothetical questions about on what terms would he/she be willing to give up the rural Hukou (as well as the farmland tenure rights attached to it) for an urban one. Three candidate terms are offered, with incremental values of compensation:

41 Farmland for free compulsory education for the child(ren) in the family;

42 Farmland for free compulsory education for the child(ren) in the family, plus a subsistence living allowance for everyone in the family;

43 Farmland for free compulsory education for the child(ren) in the family, plus a subsistence living allowance for everyone in the family, plus certain forms of housing aid in the urban places.

C Land Properties and Housing

C1 Agricultural Land

For each type of the household's agricultural land tenures, including farmland, orchestra, forest, permanent green houses, and fishpond: owned area size; leased out area size; to whom is the land leased out; lease out rent; lease out term; usage of the leased out land; leased in area size; from whom is the land leased in; lease in rent; lease in term; usage of the leased in land.

C4 Homestead and Housing

For each building the household owns:

44 The structure type of the building.

45 Year constructed/bought.

46 Year the land was allocated to the household.

47 Construction/purchase price.

49 Land price.

49 Current value.

50 Occupation status of the building (1 Own resident; 2 Rented out; 3 Lent to someone for free; 4 Idle)

51 If rented, the rent.

52 Usage of the building (1 Residential; 2 Commercial; 3 Residential and commercial; 4 idle; 5 Others)

53 Usually (except in major holidays such as the spring festival) how many people reside in the building.

54 The land (homestead) area of the building.

55 The previous usage of the land before the construction of the building.

56 Does the household have the certificate for land property and the certificate for building ownership?

57 If this is a purchased commodity building, why had not the household built a building on the household's own homestead land?

58 How many stories does the building have.

59 The area size of the building.

D Capital Properties, Revenues, and Expenditures

D1 Self-Employed Business

For each of the self-employed businesses: share of ownership; description of business; number of employees; land, equipment, and other capital investment; debt; 2014 fixed capital investment; 2014 operation expenditures; 2014 tax paid; 2014 subsidies; 2014 total revenues; 2014 profit.

D2 Agriculture

For each of the agricultural products: sown area; labor input; capital input; gross yield; sale price.

For each type of livestock: stock; labor input; capital input; gross yield; sale price.

D3 Other Household Revenues

Household's other revenues, including: governmental agricultural subsidies; governmental compensation for reverting farmland to forest; governmental pensions; other governmental subsidies, allowance, etc.; gifts from relatives or friends; gifts for special events (such as wedding or funeral); rent of household's capital properties, except for farmland; interests and dividends; village collective dividends; other revenues (specify).

D4 Expenditures

Record only the expenditures at home village; i.e. do not record the expenditures of migrant household members who do not live in the home village at the time of the survey.

Household's basic everyday expenditures (food, clothing, other everyday commodities, utilities, communication costs, fuel, rent, transportation costs); public service expenditures (education costs, health care costs, health insurance payments, pension payments, other insurance expenditures); other expenditures (recreational expenditures, gifts, gifts for special events, tourism, public service charges and penalties, etc.); housing-related expenditures (excluding rents).

D5 Durable Consumer Goods, Vehicles, and Machine

Record the current value (estimated) and purchase price (if purchased in 2014) of the following items: household appliance (TVs, refrigerators, laundry machines, AC units, etc.); consumer electronics (cellphones, PCs, cameras, tablet PCs, etc.); furniture or other durable consumer goods; vehicles (automobiles, motorcycles, electric cycles, others); agriculture machines and vehicles.

D6 Savings and Debt

Record the household's bank savings and cash reserves, debts, and creditor's rights.

E Children and Elders

E1 School Children

For each of the children in the household who is currently in school (from kindergarten to high school):

01 Where does the child go to school (1 Home village, with at least one of the parents is not at home (i.e., currently migrating); 2 Home village, with both the parents are at home; 3 In the city where the parent(s) is working; 4 Other places).

02 (If chosen the first option in the previous question) Why hasn't the child migrated together with the parent(s) and attend school in the city where the parent(s) is working (1 The expense is too high; 2 Can't find a suitable school in the city; 3 The parent(s) is too busy working to take of the children in the city; 4 The child may get discriminated against at school in the city; 5 The academic standards of the schools in the city is too high; 6 The child prefers to go to school in the home village; 7 The parent(s) has no fixed place of working; 8 One of the parents is also at home with the child; 9 Other reasons (specify)).

E2 Elders

For each of the household members who is over 45:

21 With whom are you living together currently (1 Alone; 2 Spouse; 3 Children; 4 Grand-children; 5 Parents or grand-parents; 6 Others (specify)).

22 With whom do you wish to live together in the future (1 Alone; 2 Spouse; 3 Children; 4 Grand-children; 5 Parents or grand-parents; 6 Nursery home; 7 Others (specify)).

23 In which location do you plan to live in the future (1 The city; 2 Home village; Either is ok).

F Social Networks

23 Do you, or any of your household members attend the formal annual ancestor worship ceremony?

II. List of Surveyed Villages in the Surveys

The 2008-2009 Survey

City	Province	City-region	Sample Number	Survey Year
Chengdu	Sichuan	Sichuan-Chongqing	199	2008
Chongqing	Chongqing	Sichuan-Chongqing	200	2008
Dongguan	Guangdong	Pearl River Delta	200	2009
Guangzhou	Guangdong	Pearl River Delta	200	2009
Jiangyin	Jiangsu	Yangtze River Delta	200	2009
Jinan	Shandong	Bohai Bay Region	201	2008
Nanchong	Sichuan	Sichuan-Chongqing	200	2008
Ningbo	Zhejiang	Yangtze River Delta	201	2009
Sanhe	Hebei	Bohai Bay Region	198	2008
Weifang	Shandong	Bohai Bay Region	197	2008
Yueqing	Zhejiang	Yangtze River Delta	200	2009
Zhongshan	Guangdong	Pearl River Delta	200	2009

The 2014-2015 Survey

Village Index	County	Province	Region	Sample Number	Survey Year
13111	Daming	Hebei	Eastern	21	2014
13112	Daming	Hebei	Eastern	23	2014
13121	Daming	Hebei	Eastern	20	2014
13122	Daming	Hebei	Eastern	19	2014
13211	Huailai	Hebei	Eastern	22	2015
13212	Huailai	Hebei	Eastern	22	2015
13221	Huailai	Hebei	Eastern	21	2015
13222	Huailai	Hebei	Eastern	20	2015
22111	Da'an	Jilin	Middle	20	2015
22112	Da'an	Jilin	Middle	20	2015
22121	Da'an	Jilin	Middle	21	2015
22122	Da'an	Jilin	Middle	19	2015
22211	Lishu	Jilin	Middle	20	2015
22212	Lishu	Jilin	Middle	20	2015
22221	Lishu	Jilin	Middle	20	2015
22222	Lishu	Jilin	Middle	20	2015
32111	Changshu	Jiangsu	Eastern	20	2014
32112	Changshu	Jiangsu	Eastern	20	2014
32121	Changshu	Jiangsu	Eastern	20	2014
32122	Changshu	Jiangsu	Eastern	19	2014
32211	Xinghua	Jiangsu	Eastern	20	2014
32212	Xinghua	Jiangsu	Eastern	19	2014
32221	Xinghua	Jiangsu	Eastern	20	2014
32222	Xinghua	Jiangsu	Eastern	20	2014
34111	Wuwei	Anhui	Middle	21	2015
34112	Wuwei	Anhui	Middle	20	2015

34121	Wuwei	Anhui	Middle	23	2015
34122	Wuwei	Anhui	Middle	20	2015
34211	Shexian	Anhui	Middle	22	2015
34212	Shexian	Anhui	Middle	21	2015
34221	Shexian	Anhui	Middle	22	2015
34222	Shexian	Anhui	Middle	20	2015
35111	Longhai	Fujian	Eastern	23	2015
35112	Longhai	Fujian	Eastern	23	2015
35121	Longhai	Fujian	Eastern	22	2015
35122	Longhai	Fujian	Eastern	22	2015
35211	Youxi	Fujian	Eastern	22	2015
35212	Youxi	Fujian	Eastern	21	2015
35221	Youxi	Fujian	Eastern	22	2015
35222	Youxi	Fujian	Eastern	22	2015
37111	Gaotang	Shandong	Eastern	24	2014
37112	Gaotang	Shandong	Eastern	24	2014
37121	Gaotang	Shandong	Eastern	22	2014
37122	Gaotang	Shandong	Eastern	20	2014
37211	Xiashan	Shandong	Eastern	17	2015
37212	Xiashan	Shandong	Eastern	16	2015
37221	Xiashan	Shandong	Eastern	21	2015
37222	Xiashan	Shandong	Eastern	21	2015
41111	Xichuan	Henan	Middle	20	2014
41112	Xichuan	Henan	Middle	20	2014
41121	Xichuan	Henan	Middle	23	2014
41122	Xichuan	Henan	Middle	19	2014
43111	Changsha	Hunan	Middle	17	2014
43112	Changsha	Hunan	Middle	20	2014

43121	**Changsha**	**Hunan**	**Middle**	**21**	**2014**
43122	Changsha	Hunan	Middle	22	2014
43211	**Shuangfeng**	**Hunan**	**Middle**	**20**	**2014**
43212	Shuangfeng	Hunan	Middle	20	2014
43221	**Shuangfeng**	**Hunan**	**Middle**	**21**	**2014**
43222	Shuangfeng	Hunan	Middle	21	2014
44111	**Zhongshan**	**Guangdong**	**Eastern**	**22**	**2015**
44112	Zhongshan	Guangdong	Eastern	21	2015
44121	**Zhongshan**	**Guangdong**	**Eastern**	**20**	**2015**
44122	Zhongshan	Guangdong	Eastern	20	2015
51111	**Jiajiang**	**Sichuan**	**Western**	**21**	**2015**
51112	Jiajiang	Sichuan	Western	21	2015
51121	**Jiajiang**	**Sichuan**	**Western**	**21**	**2015**
51122	Jiajiang	Sichuan	Western	22	2015
51211	**Yuechi**	**Sichuan**	**Western**	**21**	**2015**
51212	Yuechi	Sichuan	Western	21	2015
51221	**Yuechi**	**Sichuan**	**Western**	**21**	**2015**
51222	Yuechi	Sichuan	Western	20	2015
53111	**Mengzi**	**Yunnan**	**Western**	**23**	**2014**
53112	Mengzi	Yunnan	Western	20	2014
53121	**Mengzi**	**Yunnan**	**Western**	**20**	**2014**
53122	Mengzi	Yunnan	Western	20	2014
53211	**Tonghai**	**Yunnan**	**Western**	**22**	**2014**
53212	Tonghai	Yunnan	Western	22	2014
53221	**Tonghai**	**Yunnan**	**Western**	**21**	**2014**
53222	Tonghai	Yunnan	Western	21	2014
53311	**Dali**	**Yunnan**	**Western**	**21**	**2014**
53312	Dali	Yunnan	Western	20	2014

53321	Dali	Yunnan	Western	20	2014
53322	Dali	Yunnan	Western	21	2014
57111	Hanyin	Shaanxi	Western	22	2014
57112	Hanyin	Shaanxi	Western	22	2014
57121	Hanyin	Shaanxi	Western	21	2014
57122	Hanyin	Shaanxi	Western	21	2014
57211	Fuping	Shaanxi	Western	22	2014
57212	Fuping	Shaanxi	Western	22	2014
57221	Fuping	Shaanxi	Western	24	2014
57222	Fuping	Shaanxi	Western	24	2014
62111	Yuzhong	Gansu	Western	23	2015
62112	Yuzhong	Gansu	Western	22	2015
62121	Yuzhong	Gansu	Western	22	2015
62122	Yuzhong	Gansu	Western	21	2015
62211	Gulang	Gansu	Western	25	2015
62212	Gulang	Gansu	Western	21	2015
62221	Gulang	Gansu	Western	26	2015
62222	Gulang	Gansu	Western	20	2015

III. List of Sources of Hukou Reform Policies at the Provincial Level

Beijing: http://www.chinanews.com/gn/2015/12-10/7665657.shtml

Tianjin: http://www.tjzb.gov.cn/2016/system/2016/04/27/010001139.shtml

Hebei: http://www.rqgaj.gov.cn/info.asp?s=4&n=178

Shanxi: http://www.shanxigov.cn/n16/n1203/n1866/n5130/n14752920/18640852.html

Inner Mongolia:
http://www.nmg.gov.cn/xxgkml/zzqzf/gkml/201509/t20150915_495183.html

Liaoning:
http://www.ln.gov.cn/zfxx/zfwj/szfwj/zfwj2011_106024/201507/t20150715_1738952.html

Jilin: http://gat.jl.gov.cn/zwgk/wjfb/201509/t20150923_2081704.html

Heilongjiang: http://www.hlj.gov.cn/wjfg/system/2014/11/03/010691825.shtml

Shanghai:
http://www.shanghai.gov.cn/nw2/nw2314/nw2319/nw12344/u26aw47267.html

Jiangsu: http://www.js.gov.cn/jsgov/tj/bgt/201501/t20150115468313.html

Zhejiang:
http://www.hangzhou.gov.cn/module/idea/que_content.jsp?webid=149&appid=1&topicid=538254&typeid=11

Anhui:
http://www.ahzw.gov.cn/xxgknewsDetail.action?contentId=297e8f704df0d9a4014df14949dd0142

Fujian:
http://www.fujian.gov.cn/zc/zwgk/zxwj/szfwj/201502/t20150226_916333.htm

Jiangxi: http://www.jiangxi.gov.cn/zzc/ajg/szf/201502/t20150228_1127076.htm

Shandong: http://www.shandong.gov.cn/art/2014/11/21/art_285_6704.html

Henan: http://www.henan.gov.cn/zwgk/system/2014/11/11/010506954.shtml

Hubei:
http://gkml.hubei.gov.cn/auto5472/auto5473/201509/t20150918_719827.html

Hunan:
http://www.hunan.gov.cn/zw/zfgb/54042/2015nd1q_58633/szfwj_40043_1/201506/t20150624_1760117.html

Guangdong: http://zwgk.gd.gov.cn/006939748/201507/t20150707_589735.html

Guangxi:
http://www.gxzf.gov.cn/zwgk/zfgb/2015zfgb/2015_gb_06/2013_zfwj_gb_2013/201503/t20150310_440063.htm

Haihan: http://xxgk.hainan.gov.cn/hi/HI0101/201512/t20151228_1739383.htm

Chongqing: http://www.cq.gov.cn/wztt/pic/2015/1390894.shtml

Sichuan: http://www.sc.gov.cn/10462/10883/11066/2014/11/26/10319585.shtml

Guizhou:
http://www.gzgov.gov.cn/xxgk/zfxxgkpt/szfxxgkml/201507/t20150703_303323.html

Yunnan: http://www.baoshan.gov.cn/info/1408/30031.htm

Tibet: (None)

Shaanxi: http://www.shaanxi.gov.cn/0/103/10884.htm

Gansu: http://www.zhikunedu.com/HuKouZhengCe/477994.html

Qinghai: http://xxgk.qh.gov.cn/html/1664/283895.html

Ningxia:
http://www.zwga.gov.cn/bsdtDetail.rtfs?dept_id=001&big_type_id=1&doc_id=7363

Xinjiang: http://news.ts.cn/content/2014-10/19/content_10622539_all.htm