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LABORATOIRE ERUDITE

# **Hukou Identity and Economic Behaviours: A Social Identity Perspective**

présentée et soutenue publiquement

par

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# ABSTRACT

Despite ongoing reforms, the Chinese Hukou System remains a significant institution after 70 years of implementation. This dissertation explores its omnipresent impacts from the perspective of social identity which has been largely overlooked. It provides empirical evidence to the social identity literature, demonstrating how the hukou identity can still affect individual economic behaviours even after its "abolition". Moreover, it argues that the negative effects resulting from the hukou identity cannot be overturned by reforms alone. Using data from a nationally representative survey, this dissertation is organised into three chapters on the following subjects perceived discrimination, social trust, and intra-household bargaining. Chapter 1 investigates the extent to which individuals from different hukou backgrounds report hukou-based perceived discrimination and examines whether the elimination of the hukou distinction through reform would reverse the associated stigmas. Chapter 2 sheds light on generalised social trust and argues that hukou identity alone can account for the gaps in social trust that are difficult to overcome. Chapter 3 focuses on the role of hukou identity within a household, specifically whether social distance with regards to hukou and migration status between spouses affects wives' intra-household bargaining power. To address the endogeneity and selection bias, quasi-experimental methods, panel analysis, counterfactual framework and extensive controls are employed respectively in each chapter. The results indicate that the imposition of the Hukou System does alter individuals' self-perceptions profoundly and such beliefs persist to "direct" individuals' behaviours accordingly even when the government abolishes the relevant institutional distinctions. In addition, the results find that hukou-related stigmas and belief gaps are difficult to reverse through reforms. Ultimately, this dissertation calls on policymakers to acknowledge the socio-psychological impact of discriminatory institutions and their long-lasting effects.

**Key words:** Social identity, Hukou system, Perceived discrimination, Social trust, Intra-household bargaining



# RÉSUMÉ

Malgré les réformes en cours, le système hukou chinois reste une institution significative après 70 ans de mise en œuvre. Cette thèse explore ses impacts omniprésents du point de vue de l'identité sociale, qui a été largement négligée. Elle fournit des preuves empiriques à la littérature sur l'identité sociale, montrant comment l'identité hukou peut encore affecter les comportements économiques individuels même après son « abolition ». De plus, elle soutient que les effets négatifs résultant de l'identité hukou ne peuvent pas être inversés par les réformes seules. En utilisant des données d'une enquête nationale représentative, cette thèse est organisée en trois chapitres sur les sujets suivants: la discrimination perçue, la confiance sociale et la négociations au sein du ménage. Le chapitre 1 examine dans quelle mesure les individus de différents milieux hukou déclarent la discrimination perçue basée sur le hukou et examine si l'élimination de la distinction hukou par la réforme inverserait les stigmates associés. Le chapitre 2 met en lumière la confiance sociale généralisée et soutient que l'identité hukou seule peut expliquer les écarts de confiance sociale difficiles à surmonter. Le chapitre 3 se concentre sur le rôle de l'identité hukou au sein d'un ménage, en particulier sur la question de savoir si la distance sociale en ce qui concerne le hukou et le statut de migration entre les conjoints affecte le pouvoir de négociation intra-familiale des épouses. Pour aborder les problèmes d'endogénéité et de biais de sélection, des méthodes quasi-expérimentales, une analyse de panel, une analyse contrefactuelle et des contrôles étendus sont utilisés respectivement dans chaque chapitre. Les résultats indiquent que l'imposition du système hukou modifie profondément les auto-perceptions des individus et que de telles croyances persistent pour « diriger » les comportements des individus même lorsque le gouvernement abolit des distinctions institutionnelles pertinentes. En outre, les résultats montrent que les stigmates liés au hukou et les écarts de croyances sont difficiles à inverser par les réformes. En fin de compte, cette thèse appelle les décideurs à reconnaître l'impact socio-psychologique des institutions discriminatoires et de leurs effets durables.

**Mots clés:** Identité sociale, Système hukou, Discrimination perçue, Confiance sociale, Négociation au sein du ménage



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# LIST OF ACRONYMS

**CFPS** China Family Panel Studies

**RIU** Agricultural Hukou Holders in Urban Areas, or Rural Hukou Holders in Urban Areas

**UIR** Non-agricultural Hukou Holders in Rural Areas, or Urban Hukou Holders in Rural Areas

**RIR** Agricultural Hukou Holders in Rural Areas, or Rural Hukou Holders in Rural Areas

**UIU** Non-agricultural Hukou Holders in Urban Areas, or Urban Hukou Holders in Urban Areas

**DAMs** Directly-Administered Municipalities

**DDD** Triple Difference-in-Difference

**Cohort DiD** Cohort Difference-in-Difference

**2SLS** Two-Stage Least Squares

**OLS** Ordinary Least Squares

**IV** Instrument Variable

**BMI** Body Mass Index

**AIPW** Augmented Inverse Probability Weights

**ATE** Average Treatment Effect





# GENERAL INTRODUCTION

## Social Identity in Economics

Derived from the key concept in sociology and psychology, social identity has raised economists' attention and supplemented economics literature from a non-pecuniary point of view to explain individual behaviours, analyse intergroup relations and conflicts, and provide insights about ingroup biases and norm conformity in terms of discrimination, attitudes, cooperation and trust, education, allocation decisions and bargaining, labour market outcomes, consumer behaviours, finance, public policies and so on, on which [Shayo \(2020\)](#) provided an extensive review. This dissertation analyses the impacts of an institutionally imposed identity, the Chinese Hukou System, on altering individuals' behaviours in terms of perceptions, level of trust and intra-household bargaining. This dissertation shows that the detrimental shadow of the hukou identity persists until today in spite of reforms to alleviate the economic inequality associated with different hukou identities have been implemented.

Stemmed from the social identity theory in psychology ([Tajfel et al., 1979](#)), a social identity is often described as "a person's sense of self" derived from a perceived social group and is widely applied to explain intergroup relations. Amartya Sen is one of the pioneers among economists to address the importance of identity into a broader field of philosophy, politics and economics. [Sen \(1977\)](#) questions the rationality assumption in "the invariable pursuit of self-interest in each act" by posing a "commitment" behaviour, where the individual chooses "an action that yields lower expected welfare than an alternative available action". When the individual exerts commitment towards "a social class to which he belongs", the lack of personal gain is acceptable considering "the value of rules of behaviour". Without speaking out the term social identity, Sen proposes a process where the individual identifies with others and commits to the group "with a sense of obligation". [Sen \(1985\)](#) later elaborates the commitment behaviour that the "sense of identity" as a member of a group can affect one's views of their own "welfare, goals or behavioural obligations" which makes one depart from self-interest maximisation to obey certain "rules of conduct" of the community. Here the "sense of identity"

implies a social affiliation as well as the process of identification with a particular group (Sen, 2008). Without a specific structure, Sen addresses the importance of group membership in goal achievement and illustrates how social identity can serve as a motivation for some seemingly detrimental behaviours. Later, Akerlof and Kranton (2000) unprecedentedly include social identity into the standard utility function where a strand of preference based models incorporating social identity has been developed. Social categories and group-related prescriptions or norms are emphasised in Akerlof and Kranton (2000)'s model, which co-determine the individual's identity and after all the utility. An individual maximises their utility via choosing actions conditioned on the others' actions, the social category to which they belong, and the group behaviour codes. They may receive "gains and losses of identity" by conforming to or contradicting the behavioural prescriptions of the group. This model acknowledges the "emotional significance" of social identity (Berger, 1966; Tajfel, 1974), and assigns it as the "primary motivation for choice" (Kranton, 2016). In later works, Akerlof and Kranton apply the theory to derive implications about gender discrimination, persistent poverty and social exclusion, household labour division, education policies, consumption and organisation (2000; 2002; 2005; 2010).

Unlike the fact that group membership has been assigned in Akerlof and Kranton's model, identity choice models consider the individual's endogenous choice of identity because "individuals do not identify with each and every group that they belong" (Shayo, 2020; Rusch, 2022). In Shayo (2007)'s framework, an individual chooses to (or not to) identify with a certain group. In this case the individual's utility depends on their actions, perceived distance to a given group and the social status of that group. Hence, individuals tend to identify with a high status group which contains more similar members as themselves. It has been applied in political economy to explain how the class and national identification among the poor and the rich people vary. As the model keeps the perceived distance "exogenous", it creates incentives for politicians to adjust the "supply" of group distance such as promoting a national culture rather than further deepening the class differences. The identity choice model has been then extended into a more generalised framework to describe ingroup biases and conformity to group norms (Shayo, 2020). The identification process is therefore described as an individual seeking to decrease their perceived distance to that group and increase the status of the

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given group. This induces an individual conformity behaviour to the group norms in order to reduce one's perceived distance to the given group, letting oneself "resemble" other group members. In addition, the model also suggests altruism behaviour towards ingroup members and discrimination against other groups as a means to increase the group status. Furthermore, one has to consider the "cost" of identifying with a given group, which could vary if perceived distance and group status are affected by economic shocks. For instance, changes in income redistribution may reduce the perceived distance between the poor and the rich and thus affecting the two groups (Shayo, 2009). In this sense, the perceived distance, the group status and the "cost" of identification are seen as instruments that can be "engineered" to serve political and economical purposes. Shayo (2020) shows the applications in pricing strategy, organisation theory, public policies, international trade and other domains.

An alternative to preference based models is the belief based model by Bénabou and Tirole (2011), where they define individuals' sense of self to be determined by their past choices. With a three-period model, an individual forms beliefs about themselves based on initial endowments on Date 0 and decides whether to invest in prosocial identities. On Date 1, they update beliefs about themselves based on decisions on Date 0 and decide whether to reinvest. Intuitively, this model assumes that individuals value beliefs in pursuit for a moral identity or other self-views and invest in them. This model reveals implications to explain the effect of salience of identity, escalating commitment behaviours (where people continue to invest in certain behaviours when the marginal returns no longer justify doing so) and responses to stereotype threats (where individuals tend to conform to stereotypes rather than oppose).

Other than theoretical models, laboratory and field experiments are extensively carried out in investigating the role of identity. In experiments, identities are either naturally existing (like gender, race and ethnicity, religion and organisational identities) or artificially assigned (Li, 2020). Priming is a common technique to make the naturally existing identities salient in a lab experiment which activates individuals' knowledge and perceptions associated with the identity. Priming can change individuals' behaviours and performances significantly and induce subjects to conform to stereotypes related to the identity (Shih et al., 1999; Hoff and Pandey, 2006; Benjamin et al., 2010; Afridi et al., 2015; Cohn et al., 2015). Researchers also found that

priming the identity can induce ingroup cooperation (McLeish and Oxoby, 2011; Chen et al., 2014). However, some researchers argued that priming can be context dependent, sensitive to the task and the belief of the group on top of the potential resistance (Charness and Chen, 2020). To induce artificial identities, the minimal-group paradigm in socio-psychology (Tajfel, 1986) and near-minimal groups in economics (Chen and Chen, 2011) are usually adopted. In both settings, researchers assigned trivial identities to randomly grouped individuals. The difference is that, near-minimal groups design involves trade-offs between self-interest and group-interest while the minimal group requires no linkage between the two. In the latter strand, researchers find that enhancing group identities may induce cooperation which is consistent with ingroup favouritism pattern (Charness et al., 2007; Chen et al., 2014; Jiang and Li, 2019). An extensive review on experimental methods can be referred in Li (2020)'s work, whereas empirical evidence from econometrics methods is lacking due to the scarcity of identity-related information as well as the difficulty in causal inference with observational data.

Regardless of theoretical modelling or experiments, literature have shown that an individual identifying with a given group could make them conform to group norms, exert ingroup favouritism and outgroup discrimination. Hence social identity can be seen as a two-sided sword. On the one hand, the pride that one takes in identifying with a group could be reinforced as a positive force to contribute to the greater good (Charness and Chen, 2020); on the other hand, social identity could be manipulated and cause detrimental consequences. In any case, overlooking the socio-psychological power of identity can impede economic efficiency and induce profound inequality. This dissertation provides empirical evidence with econometric methods on how the Hukou System generates economic inequality from a social identity perspective and attempts to raise authorities' attention to prevent these effects from happening. The next sections will introduce the Hukou System and how it becomes an imposed identity.

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# Hukou and Hukou Identity

## Hukou: What It Is ?

Hukou is a Chinese household registration system implemented in 1950s which documents the residence information of the individual and determines one's benefits and rights to public services (Cheng and Selden, 1994; Fan, 2008; Song, 2014; Chan, 2018a).

The literal meaning of *Hu* in Chinese is the Door which is a coreference for the household while *Kou* is used as a measure word for the number of people. Altogether *Hukou* means the number of people within a household. That is, one's hukou not only stands for the individual information but also refers to the liaison with their household, i.e. the address of the household, whether one is the head of the household, one's relation to other household members and so on. Sometimes *Huji* is also used as an interchangeable term of *Hukou*. *Ji* means Books or Records. Hence *Huji* refers to the record that contains *Hukou* information. *Hukou* is the content of *Huji* whereas *Huji* is the physical booklet of *Hukou*. They are identical in most cases (Depeng, 2002).

A household registration booklet, *Hukou Bu*, records the hukou information of all the household members. It consists of 34 items that are required by the Ministry of Public Security including the type of the household (hukou status), the supervisor of the household, one's relation with the household supervisor, name, gender, used name, ethnicity, date of birth, place of birth, permanent address, hukou origin, etc. Each individual of the household has one page in the booklet. Figure 1 shows an example of the individual page.

Most countries in the world have population registers. What makes the Hukou System differ from a generic population register is that it was progressively developed to restrict individual mobility and stratify benefits and public services associated with different types as we shall see through the history of the Hukou System. Therefore, the Hukou System discussed in this dissertation refers to not only the population register system but a system inherent with mobility control. It is combined with parallel policies and institutions to hinder rural-to-urban migration and diverge public service to sustain this purpose.

Permanent Resident Registration Card  
常住人口登记卡

Stamp of Hukou Status  
Stamp of the Household ID Number

姓 名	Name	户 主 或 与 户 主 关 系	Household Head or Relation with the Household Head	
曾 用 名	Former Name	性 别	Gender	
出 生 地	Place of Birth	民 族	Ethnicity	
籍 贯	Hukou Origin	出 生 日 期	Date of Birth	
本市(县)其他住址	Other Residential Address in The City (County) <small>Text</small>	宗 教 信 仰	Religion	
公 民 身 份 证 件 编 号	Citizen ID Card Number	身 高	Height	血 型 Blood Type
文 化 程 度	Level of Education	婚 姻 状 况	Marital Status	兵 役 状 况 Military Service Status
服 务 处 所	Employer	职 业	Occupation	
何 时 由 何 地 迁 来 本 市 ( 县 )	When and from Where You Have Immigrated to This City (County)			
何 时 由 何 地 迁 来 本 址	When and from Where You Have Moved to the Current Residential Address			

承办人签章: \_\_\_\_\_ 登记日期: \_\_\_\_\_ 年 月 日  
Signature of the Register Date of the Registration: yy mm dd

Figure 1: Example of A Permanent Resident Registration Card

Source: The People’s Government of Beijing Municipality. Author’s translation.

## The Origin of Hukou System

To understand how the Hukou System signifies a hierarchical status and later becomes an identity from a registration system, it is important to look at the evolution of the system, which was designed to be discriminatory and to serve the Chinese urbanisation strategy (Chan, 2009, 2018b,c,a; Buckingham and Chan, 2018; Chan and Wei, 2019a).

When the People’s Republic of China was established in October 1949, the nation was weak and unstable. The government of the mainland remained in tension with the authority of Taiwan, fearing the secret force of subversion from the other side. For the sake of public security, a system to prove one’s identity and register their demographic information aimed at monitoring and controlling suspicious person was initiated by the Ministry of Public Security in 1950 which could be seen as a prototype of the later Hukou System (Depeng, 2002; Yilong, 2004; Haiguang, 2003). Soon in March 1951, the *Regulation Governing Urban Population* (Min-

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istry of Public Security, 1951) was launched marking an official application of a population register to all the urban residents based on the unit of *hu* - *hu* in this sense is broader than a household. The regulation defined a *hu* unit as a group of people who live and share expenses together under the same supervisor despite their relations. The key is to manage people by their living unit. The supervisor of a *hu* unit is obliged to report to the local authorities about the change of status of all the *hu* members: move-in, move-out, newborns, death, marital status, employment status, etc. At this stage, individuals were allowed to migrate freely as long as they obtained a migration permit. Meanwhile, a similar system was kick-started in the countryside. Upon the carry out of the first census in 1953, the population registers were widely initiated in rural areas as well.

Soon in 1955, the State Council announced an implementation of the hukou registration for all the residents in the rural and urban areas with a continuous focus on the change in the number of *hu* members. However, as the law had not defined the zoning for the urban and rural areas, it curbed the application of the hukou registration due to the unclear responsibilities among local authorities. To that end, the *Regulation of the Standard on the Division of Rural and Urban Areas* (State Council, 1955b) was launched later that year. A more detailed division between the rural and urban areas was derived complementing the nationwide implementation of the hukou registration. According to the regulation, urban areas were consisting of a) the municipalities where people's committees sit; b) the municipalities with 2 thousand residents where more than a half of the population work in non-agricultural sectors; c) the municipalities with more than 1 thousand but less than 2 thousand residents, public facilities (mines, train stations, commercial centres, transport hubs, middle schools, research centres and employee dormitories, etc.) and more than three quarters of its population work in non-agricultural sectors; d) the municipalities with rehabilitation facilities and attract more than half of its population's patients; e) the outskirts of the above urban areas regardless of the number of residents. It is the first time that the notion of "people working in non-agricultural sectors" has been applied, distinguishing agricultural workers (peasants) from the rest of the population. The proportion non-agricultural workers was also utilised as a criterion to divide the rural and urban areas, setting a critical stone in the foundation of the Hukou System.



At this stage, the hukou registration focused on the identity and the permanent residence of the individual based on the unit of *hu*. Both were to serve the purpose of precisely locating the individual out of public security. In fact, individuals were still allowed to move freely as long as they obtained a move-out permit and the change of the permanent residence to the recipient municipality merely required the presence of the move-out permit.

In the time of the planned economy in China, urban residents were directly administered and were "fully employed" by the state sectors, where they received subsidies, benefits, housing, alimentation and other benefits, whereas rural residents were supposed to work on agriculture and highly relied on differentiated resource allocations by rural communities (villages) or their collective sub-units (production teams) (Putterman, 1992; Cheng and Selden, 1994; Putterman and Dong, 2000; Taizhi and Wenhua, 2014). Therefore, urban residents are considered to live a more stable life than rural residents. Moreover, as we can see from above descriptions, urban areas were by definition centres of infrastructures (hospitals, schools of higher rank, transportation hubs, etc.) and government departments, indicating a quality life that separated cities from countryside and was of great attraction to rural dwellers. As a result, there was an increasing influx of rural to urban migrants, causing an overwhelming unemployment in urban areas and a continuous loss of labours in countryside (State Council, 1953a).

Even though industrialisation was at the key interest of the new republic, the *First Five Year Plan* (State Council, 1955a) prioritised the development of heavy industry parallel to the USSR mode. Unlike light industry, heavy industry is more capital intensive hence creating less jobs (Yu, 2002). Therefore the job vacancies were not able to absorb the giant rural to urban influx and the cities were severely burdened. To avoid hyper unemployment in the urban areas, six directives were promulgated since 1953 to control the rural to urban migrants (Chan and Zhang, 1999). Appendix lists all the six official documents intended to prevent rural to urban influx.

Despite a slight relief during the famine and natural disaster period (1959-1961), the mobility restriction became more and more stringent over the years. The titles of these directives have changed tones from "dissuading" "controlling" migrants to "preventing" "stopping" influx. Procedures employed mainly contained the following five steps: i. Rural authorities dissuaded

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people from moving; ii. Rural authorities were ordered not to issue move-out permits; iii. Urban authorities persuaded unemployed rural to urban migrants to go back; iv. Public security sectors and railway sectors were involved to monitor the rural to urban migrants and take charge of the repatriation; v. Employers of all kinds were not allowed to directly recruit in the rural areas without permission. Besides, those rural migrants were described as "blind influx" implying them to be bandwagon hopping without prudent consideration. Meanwhile, a bundle of other policies concerning the supply of grains, urban employment opportunities and social welfare were promulgated to strengthen the mobility control which shall be discussed in the next section.

By the time the Hukou System was into effect in early 1960s, massive urban youth were sent down to the countryside for "reeducation" via agricultural work to prevent "pro-bourgeois" thoughts and relieve the pressure in urban areas (Cheng and Selden, 1994). The Downward Transfer Movement (started in 1960s) peaked during the Cultural Revolution (1966-1976) and continued until 1979. This practice sent in total more than 17.76 million urban youth to the countryside, which was a enormous amount considering the urban population was around 128.62 million in 1979 (Pan, 2005). In the mean time, a provision aimed to scrutinise rural-to-urban hukou migration whilst allowing urban-to-rural migration was issued by the Ministry of Public Security in 1964, further curbing sent-down youth from returning to urban areas. The urban population increased from 98.34 million to 128.62 million from 1965 to 1979 (Pan, 2005), with an average increase rate of 1.02% each year.

Towards the end of the Downward Transfer Movement, sent-down youth were started to be relocated back to urban areas. A regulatory was issued in 1977 to address the reallocation problem, holding a firm tone towards individual mobility and hukou conversion. Yet an intermediary system of *Nong zhuan fei* started to come into effect. *Nong zhuan fei* is the phrase to describe the hukou conversion (*Zhuan* means converting) process from an agricultural (*Nong* short for the agriculture) status to a non-agricultural (*Fei* short for the non-agriculture) status. It was embodied both stringent hukou conversion requirements and strict headcounts for each prefecture every year. At this stage, to convert one's hukou status, one had to not only meet hukou conversion criteria but also obtain a *Nong zhuan fei* quota. The quota of the

annual *Nong zhuan fei* population should not exceed 1.5% of the total local non-agricultural hukou holders, which largely limited the growth of overall non-agricultural hukou holders as well as urban residents. However, some local governments started to set their own rules and accommodate excessive *Nong zhuan fei* population. Selling non-agricultural hukou also came into sight and started to rise (State Council, 1979). With the huge demand of *Nong zhuan fei*, the central government on the one hand stressed to supervise the *Nong zhuan fei* procedure, on the other hand raised the *Nong zhuan fei* quota from 1.5% to 2% and made exceptions for talents, officers, scientists and their spouses and core family members (Chan and Zhang, 1999). Later, with the de-collectivisation in rural areas, large amount of peasants were freed from agricultural sectors. In 1984, these peasants were allowed to settle in towns and small towns on condition that they remained self-supplied in terms of food and grains. They were then granted a "hukou with self-supplied food grain", which means the state was not fiscally responsible for their welfare (Chan, 2009). This type of hukou opened a door for peasants to obtain a non-agricultural hukou as they barely had a chance via the *Nong zhuan fei* channel (Chan, 2009). However, they had to transfer their land rights before settling in urban areas (State Council, 1984).

Although the central government stayed cautious about migration mobility, the migration was mounted in the 80s and the 90s was addressed as the "age of migration" (Chan, 2009; Renard et al., 2011). In 1992, the Ministry of Public Security issued an opinion to actualise an "effective hukou type", a status called "blue-stamp hukou" came into sight with various methods to fulfill the hukou conversion including investment, which allowed local governments to increase fiscal income by "selling" non-agricultural hukou. Selling hukou became phenomenal (Ministry of Public Security, 1994).

Since the 1989 *Urban Planning Law* (Central Committee of CCP, 1989) came into effect, the central government set the direction of urbanisation via "strict control of the size of large cities, rational development of medium cities, active development of small cities". Reforms to animate Hukou System in small cities have been developed. In 2000, the central government announced that any peasant who has a legitimate and stable residence, a fixed occupation or a source of livelihood in a county-level or subcounty-level municipality may convert their

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hukou into non-agricultural status and enjoy equivalent benefits as a non-agricultural hukou holder that "no discriminatory policies shall be applied" (State Council and CCCP, 2000).<sup>1</sup>

After a half century, the Hukou System finally begins to loosen up. The institutional discrimination in policies associated are acknowledged by the central government. As a result, from 2000s the central government cast light on the *Three Rural Issues* (Central Committee of CCP, 2002), attempting to improve the living standards in rural areas and mitigating rural-urban development disparities. During this periods, agricultural hukou holders a large portion of which remain peasants are included into the social security policy regime, notably the *New-Type Basic Endowment Insurance* and the *New-Type Basic Medical Insurance* (CCCP, 2002; State Council, 2009). A policy matrix to ensure the welfare of peasants has been dedicated since.

## How Did Hukou Become Critical ?

First and foremost, policies have bonded the supply of grains to hukou registration and excluded rural dwellers accessing alimentation outside their production unit. In November 1953, the consecutive launch of the *Order on the Implementation of Planned Purchase and Planned Supply of Grains* (CCCP, 1955) and the *Interim Measures on Grain Market Management* (State Council, 1953b) marked the start of the planned allocation of grains. It ordered that once the grains were purchased from the peasants, the trade of grains should be restricted between certified stores and certified collective groups in both rural and urban areas. For those urban dwellers who did not belong to any collective group, they would be allocated a grain stamp which would allow them to buy from the certified stores. In 1955, two interim measures were adopted to unify the purchase and allocation of grains in rural and urban areas. It officially bonded the access to grains with the hukou registration - urban dwellers were given stamps to buy grains at the certified suppliers whilst rural dwellers were supposed to be self-sufficient. Rural dwellers were strictly excluded from purchasing grains. The grain stamps and food coupons were abandoned in 1990s (Wang et al., 1997), marking the final desegregation

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<sup>1</sup>For an extensive description and explanation of all the hukou registration types and policies during this period, especially those for rural-to-urban migrants as to their registration status, entitlements and qualifications for hukou conversion, please see Chan and Wei (2019b).

between grain supply and hukou status.

Second, official directives strictly curbed rural residents to work in the urban areas. From July 1952 to December 1957, six directives and regulations to relieve urban unemployment from the central government were issued consecutively, forbidding direct recruitment of workers in rural areas and restricting rural residents working in the agriculture sector. Measures included that: a. Individuals were required to obtain a reference letter to move to cities and the issue of such letters was scrutinised; b. Unemployed peasants were dissuaded to return to the countryside; c. Direct recruitment of workers and personnel was banned in the rural areas where companies and institutes were required to prioritise recruiting urban residents. With above measures, rural residents were excluded to a significant extent from urban employment. Employment and job allocations were therefore firmly linked to the individual's hukou status.

Third, rural residents and agricultural hukou holders were excluded from social securities and public programmes. When the State Council launched the first *Labour Insurance Regulations* in 1951, it regulated the welfare that an employee of an enterprise could enjoy, covering the health insurance, maternal leave, retirement and pension, aid and death allowance, etc. Collective enterprises and governmental institutes follow the example of the state owned enterprises to provide labour benefits. Other than labour benefits, local governments tend to provide urban residents with subsidies and public programmes. These benefits were not only applied to employed individuals but all the urban residents, which were mostly non-agricultural hukou holders. Once again, as agricultural hukou holders were refused by cities, they were likewise excluded from these social benefits and public programmes (Depeng, 2002).

Lastly, hukou registration is inheritable, which further fortifies the impaired linkage between hukou registration and respective resources and opportunities. Moreover, before 1998 a child can only inherit hukou registration from the mother regardless of the father's hukou.<sup>2</sup> In a patriarchal society like China, women tend to marry upwards (upward mobility). It means that generally a woman with an non-agricultural hukou would much prefer to marry a man with an non-agricultural hukou and a woman with an agricultural hukou would prefer to

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<sup>2</sup>This regulation has changed in 1998. Since then a child could choose to inherit either the mother or father's hukou registration (State Council, 1998b; Nie and Xing, 2011).

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marry a man with an non-agricultural hukou (Qian and Qian, 2017; Sun et al., 2021; Xiong, 2023). Yet the inheritance of hukou registration would hinder urban men from marrying rural women (Nie and Xing, 2011). Such a policy prevents intergeneration individual mobility via leveraging the hukou factor in marriage (Wang and Schwartz, 2018), whose impact would be discussed in Chapter 3.

In 1958, when the *Regulations on Household Registration* (Central Committee of CCP, 1958) was announced, the *de facto* freedom of mobility no longer existed. The regulation stated that citizens should register one permanent residence at the local prefectures. Any mobility from rural to urban areas is strictly regulated unless one has a employment certificate from an urban entity, an enrollment from an urban school or a permit to migrate from an urban prefecture. In this sense, the registration of the permanent residence is the key element to the hukou registration. The prefecture where the individual registers as the permanent residence becomes their hukou origin. The rural-urban type of their hukou origin determines the hukou status. At this stage, the hukou status was a proper representation of the type of residence, i.e. rural residents are naturally categorised into agricultural hukou status (assuming they work on agriculture) and urban residents are allocated with non-agricultural hukou status. A conversion of hukou registration from the rural to the urban area implies not only a change in the place of residence (i.e. to change the permanent residence from a countryside to a city) but also a jump in job sectors from agriculture to non-agriculture sectors. However, when the internal migration (mostly rural to urban migration) augmented, the hukou status could no more reflect the actual residence of the individual. The individuals who live outside their hukou origin and do not obtain the local hukou at the destinations are considered internal migrants. "Floating population" is the term to describe these migrants in the sense that they live in some places but maintain their "roots (hukou origins)" elsewhere (they live outside their registered permanent residences). As a result, when talking about hukou or the household registration status, it normally refers to one's hukou origin (the registered permanent residence) and hukou status (the status that derived from the rural-urban category of the permanent residence). If it comes to an internal migrant, the current residence is also concerned (especially the rural-urban type of it).

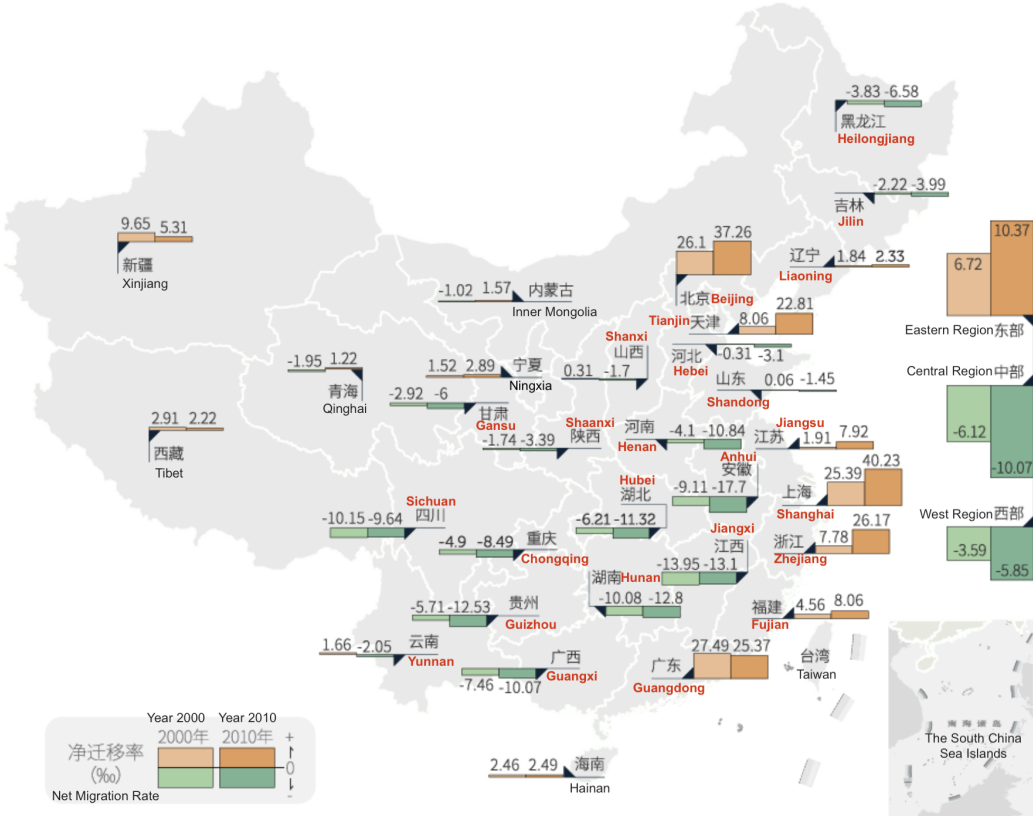


Figure 2: Provinces Covered by 2014 Hukou Reforms

Source: Map and data mapping credit Netease Data Blog (2019), data is from Li (2013), author’s translation.

### Today’s Hukou: Reforms and Lingering Problems

#### 2014 Reform: Elimination of Hukou Status Division

In order to alleviate institutional hukou disparities in terms of social welfare and public services, the Chinese central government has announced a milestone reform in mid-2014 to eliminate the agricultural and non-agricultural hukou division and all the other related hukou types nationwide and ease the hukou origin conversion procedures in eligible municipalities. Municipalities are divided into five tiers with seven categories included according to the *de facto* urban inhabitants where the conversion criteria is loosened in small and eligible medium size cities, but becomes more stringent in large and mega cities (Chan and Wan, 2017). Table 1 lists the respective conversion criteria. Below Figure 2 marks all the reformed provinces in red.

The 2014 reform historically cancelled the agricultural and non-agricultural hukou division and aimed to equalise the impaired social welfare associated with different hukou status.

Table 1: Brief on the 2014 Hukou Reform

City Tier		Urban Inhabitants	Hukou Origin Conversion
Small size cities	II	<0.2 million	No restriction
	I	0.2 - 0.5 million	
Medium size cities		0.5 - 1 million	<ol style="list-style-type: none"> <li>1. Legitimate and stable employment;</li> <li>2. Legitimate and stable residence;</li> <li>3. Eligible years of participation in social security (no more than 3 years);</li> <li>4. No restriction for cities with accommodation capacity;</li> <li>5. Limited restrictions may be applied regarding the range and years of employment as well as the condition of the residence in cities with less accommodation capacity</li> </ol>
Large size cities	II	1 - 3 million	<ol style="list-style-type: none"> <li>1. Eligible years of legitimate and stable employment;</li> <li>2. Legitimate and stable residence;</li> <li>3. Eligible years of participation in social security (no more than 5 years)</li> </ol>
	I	3 - 5 million	<ol style="list-style-type: none"> <li>1. Same categories of criteria as Tier I large size cities;</li> <li>2. Strict criteria may be applied to the range and years of employment as well as the condition of the residence;</li> <li>3. A point system may be applied</li> </ol>
Megacities		5 - 10 million	Stick to the point system where specific criteria should be applied on the emphasis of legitimate and stable employment and residence, years of participation in social securities, consecutive years of residence, etc.
Super Megacities		>10 million	

Parallel reforms have been put forward to unify the basic endowment insurance and basic medical insurance for previous agricultural and non-agricultural hukou holders - both would be eligible to participate in the *Integrated Basic Endowment Insurance* (State Council, 2014) and the *Unified Basic Medical Insurance* (State Council, 2016b) if they are not covered in the *Basic Endowment Insurance for Urban Employee* (State Council, 1991) nor in the *Basic Medical Insurance for Urban Employee* (State Council, 1998a).

These changes have i. extended the welfare coverage to all the individuals out of the legitimate job market or those without an employee medical/ endowment insurance; ii. increased the welfare standards for former agricultural hukou holders that are outside the employee insurance schemes. Table 2 list the changes.

Other than that, housing renovation programmes analogous to urban social housing programmes have been extended to low-income agricultural hukou holders and financed by the central government (Ministry of Finance et al., 2018, 2022). Moreover, housing subsidies which are exclusive to urban residents are experimentally open to rural residents without urban employment in Zhengjiang province to further close the welfare gap concerning housing sub-



Table 2: Unified Social Security Regime

Panel A			
Medical Insurance Scheme	Year	Eligibility	Coverage
Basic Medical Insurance for Urban Residents	2007	Non-agricultural hukou holders without medical insurance for urban employees	Medium
New-Type Medical Insurance for Rural Areas	2003	Agricultural hukou holders without medical insurance for urban employee	Low
Unified Basic Medical Insurance	2016	Eligible individuals without medical insurance for employees	Medium-High
Basic Medical Insurance for Urban Employees	1998	Legitimate employees	High
Panel B			
Endowment Insurance Scheme	Year	Eligibility	Charge
Social Endowment Insurance for Urban Residents	2007	Non-agricultural hukou holders without endowment insurance for urban employees	Individual + the Government
New-Type Social Endowment Insurance for Rural Areas	2009	Agricultural hukou holders without endowment insurance for urban employees	Individual + the Rural Collective + the Government
Integrated Basic Endowment Insurance	2014	Eligible individuals without endowment insurance for employees	Individual + the Rural Collective + the Government
Basic Endowment Insurance for Urban Employees	1991	Legitimate employees	Employer + Employee

sidies between former agricultural and non-agricultural hukou status (China National Radio, 2022). In this sense, land right is at the core of discussion as it is highly bonded to agricultural hukou status. The reluctance of losing land rights and government subsidies has led to many migrants "straddle and circulate between the city and the countryside" rather than giving up their agricultural hukou status (Chen and Fan, 2016). Such concern persisted till today although the hukou division has been officially eliminated (Meng and Zhao, 2018). A follow-up notice in 2020 pointed out that local governments should ensure peasants (former agricultural hukou holders)'s land rights and shall not demand them to give up the land rights as a pre-requisite to settle in urban areas via channels indicated in the 2014 reform (Development and Reform Commission, 2020).

In a nutshell, the 2014 hukou reform attempts to close up the welfare gap bonded to former agricultural and non-agricultural hukou, with parallel reforms targeted at basic endowment insurance, basic medical insurance, housing programmes, etc. The elimination of hukou status division aims to alleviate the rural-urban disparities within a municipality and equalise the welfare standards between former agricultural and non-agricultural hukou holders in their hukou origin. By the end of the first quarter of 2022, the *Basic Endowment Insurance* has covered 1032 million people whilst the *Basic Medical Insurance* has reached 1317 million, altogether accounting for the largest social security network in the world.<sup>3</sup> Meanwhile, by

<sup>3</sup>Source: Ministry of Human Resources and Social Security, 2022; National Health Care Security Administration, 2022

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the end of 2021, approximately 64.72% of the total population live in the urban areas, 72.18% of which have a local status. That is to say, roughly 18% of the total population are urban migrants living outside their hukou origin.<sup>4</sup> Altogether the number of internal migrants has reached 376 million in 2020, more than a quarter of the total population (25.99%).<sup>5</sup> With such a great amount of migrants, the controversy of the Hukou System has shifted from the rural-urban division to disparity as to hukou origins.

### **Hukou Alternative: A Residence Permit System**

To deal with the inequality due to migration status, the 2014 reform advocated to establish a Resident Permit System as an intermediary to let eligible migrants have access to public services as local people do. Eventually the resident permit would undertake the role of actual residence register and function as a proof for migrants to benefit from public services in the recipient prefectures such as vocational education grant, employment aid, social housing, basic endowment service, social welfare, social aid, etc. Migrants' children shall be able to take high school and university entrance exams in the recipient areas, considering the number of years of continuous schooling in the recipient areas. It is worth noticing that the university entrance exams are organised by provinces rather than universities. Students in different provinces may have varying textbooks, which means that the same university may apply distinct admission scores to students from different provinces. That explains the significance of letting migrants' children take the university entrance exam in the recipient areas as textbooks used in their hukou origin may differ.

Since 2016, a *Temporary Regulation of Residence Permit* ([State Council, 2016c](#)) has been implemented. Anyone who has been living outside their hukou origin for more than six months, and meets one of the conditions of having legitimate and stable employment, legitimate and stable residence or continuous schooling may apply for a residence permit. A residence permit is a proof for the place of residence, and for accessing public services and facilities in the recipient areas. With the residence permit, eligible migrants can apply for and change passports, identity cards, driving licences; take professional exams; benefit from legal aid and other legit-

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<sup>4</sup>Source: National Development and Reform Commission, 2022

<sup>5</sup>Source: National Bureau of Statistics, 2021

imate rights in the recipient areas. They no longer need to travel back to the hukou origin for these purposes. Additionally, the residence permit is also a record of the participation in social security which allows migrants to apply for local hukou once eligible. In Tier I large cities, mega cities and super mega cities (municipalities with more than 3 million *de facto* urban inhabitants) where a point system is applied, having a residence permit is also a prerequisite to start accumulating points. The point system is developed separately by each eligible city and may differ from each other in details. In general, the points are mostly associated with migrants' human capital (age, level of education, professional skills, income level, etc.), social security participation and contribution to the recipient areas. A high profiled migrant will be granted a higher point. Individuals are able to improve their scores by continuous participation in social security and developing the skills as instructed by the point system. Though the number of points does not restrict individuals' rights or access to public services and facilities, it does limit migrants' welfare to some extent. For example, in Shanghai, a super mega city, the number of points would impact migrants' children's access to quality public education as the admission is allocated by points (starting from 0, the baseline point is 120 in Shanghai). Additionally, to let the child take the high school entrance exam and university entrance exam in Shanghai, the migrant family has to present at least one residence permit meeting the baseline 120 points. If a residence permit with fewer points is presented, the child will have limited choices among vocational schools or second tier universities regardless of the actual score. Apart from education, a 120-point residence permit may allow not only the migrant but also their spouse and children to participate in social security in Shanghai. Moreover, a 120-point is the threshold to be able to demand for a Shanghai hukou. Table 3 and Table 4 presents the difference in rights for a migrant with varying residence permits and the comparison to a Shanghai hukou local.

Even though a 120-point residence permit would provide the migrant with almost equivalent social welfare that one can enjoy as a Shanghai local people, to access quality education, to meet house purchasing eligibility, the benefit from social housing and even retirement pension have strict requires for the number of years of social security participation, not to mention that the residence permit has to be renewed every year. All the benefits would be suspended if the permit expires. When it comes to hukou conversion, a 120-point residence permit is

Table 3: Comparison of Benefits Among Shanghai Residence Permits

Residence Permit Type	No Permit	< 120 points	≥ 120 points
Expiration Date	/	1 year, renew each year	
Eligibility	/	More than 6 months of residence, legitimate and stable employment/ legitimate and stable residence/ continuous schooling	
School Admission*	No	Kindergarten, elementary and secondary school admission by points	
Higher Education Application after 9-Year Compulsory Education**	Cannot apply in Shanghai	limited choices among vocational schools or second tier universities	No limits, same as Shanghai locals
Social Security	No	Oneself	Oneself + Core family members
Public Services***	No	Yes	
Social Housing	No	Yes, stricter criteria than locals	
House Purchasing	No	Yes, must get married + five years of social security participation	
Chance of Hukou Conversion	No	No	Yes

\* "School admission" refers to the free admission to public schools for the 9-year compulsory education. Spots in public schools are reserved for locals first and then people with residence permits. A residence permit is a prerequisite for local school admission.

\*\* It stands for whether the individual is eligible to take high school or eventually university entrance exam in Shanghai. One has no eligible residence permit can only apply for limited options despite the actual scores.

\*\*\* Public services such as passport and identity card application or replacement, driving license application, healthcare reimbursement, etc.

Table 4: Comparison Between A High Profiled Residence Permit and A Shanghai Hukou

Residence Permit Type	≥ 120 Points	Shanghai Hukou
Expiration Date	1 year, renew each year	Permanent
Eligibility	More than 6 months of residence, legitimate and stable employment/ legitimate and stable residence/ continuous schooling	/
School Admission	Kindergarten, elementary and secondary school admission by points	Yes
Higher Education Application after 9-Year Compulsory Education	Same as Shanghai locals	Yes
Social Security	Same as Shanghai locals	Yes
Public Services	Yes	Yes
Social Housing	Yes, stricter criteria than locals	Yes
House Purchasing	Yes, must get married + five years of social security participation	Depends on number of houses owned
Chance of Hukou Conversion	Yes	/

just the beginning: all the applicants should have held the residence permit for 7 years with at least a seven-year participation in social security, eligible tax payment, competent professional skills, no crime record and compliance with current planned fertility policy. On top of that, applicants would be sorted and selected by financial and innovative "contributions".

In practice, the residence permit is far from covering all the internal migrants, let alone the point system as to hukou conversion. In 2020, 60 thousand individuals started their journey of points collecting in Shanghai, making it 327 thousand individuals in total to collect points in Shanghai. However, only 22 thousand individuals succeeded to convert their hukou and obtained a Shanghai hukou.<sup>6</sup> These numbers are extremely trivial compared to its 10.48 million migrants by the end of October 2020.<sup>7</sup>

To sum up, the residence permit allows eligible migrants, especially those who are willing to settle, to be able to enjoy public services and benefit from social welfare in the recipient areas which reduces the gaps in social welfare between migrants and locals. However, in Tier I cities, megacities and super megacities, the social welfare associated with the permit is relatively discounted. Meanwhile, hukou conversion procedures in these cities remain hyper stringent and the quota is strictly controlled.

### **Hukou Reforms Actualisation Dilemma**

The impact of the Hukou System remains omnipresent in today's China. Other than a change in appellation, the hukou reform to eliminate the hukou division and facilitate hukou conversion in eligible municipalities reflects the ambition to equalise the rural-urban social welfare disparities. It also signifies that the function of the hukou is more relevant to one's migration status which depends on the residence locality and hukou origin. As the lagged parallel reforms and policies are still undergoing, we are witnessing the hukou transition. However, one should note that previous hukou reforms and parallel policies are announced by the central government, yet the specific hukou reform pathways are designed by local governments

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<sup>6</sup>Source: Shanghai Human Resources and Social Security Bureau, <https://rsj.sh.gov.cn/ttjsj17219/20210721/t00351401060.html>

<sup>7</sup>Source: Shanghai Bureau of Statistics, <https://tjj.sh.gov.cn/tjxw/20210517/4254aba799c840d2a54f9ef82858bcf5.html>

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(Chan and Buckingham, 2008; Chan, 2018a). The cost to include former agricultural hukou holders and migrants into the local welfare system mainly relies on local governments with subsidies from the central government (State Council, 2016a).

Since there is no specific share in cost between the central and local governments, local governments lack motivation to actualise the hukou reforms, accommodate former agricultural hukou holders in urban areas or migrants (Chan and Zhao, 2002; Chan, 2010; Cai et al., 2019; Tian et al., 2022). Phantom services to passively deflect migrants became widely documented (Chan and O'Brien, 2019). In later mandates, the central government ceased to ask local governments to be self-reliant in accommodating former agricultural hukou holders. Instead, they highlighted the function of the subsidy to award local governments with desired advancement in promoting hukou population urbanisation (Development and Reform Commission, 2020, 2022).

As discussed above, the Hukou System is still relevant as an institution (Chan and Buckingham, 2008; Chan, 2009, 2018a, 2021b). Yet the residue of the institution as a socially defined identity has been overlooked and not sufficiently addressed in studies. The Hukou System not only stratifies individuals into subcategories, but also alters their perceptions, impeding their performances and limiting the social interactions.

## **Hukou Related Literature and Discussions**

Up till today, the hukou institution remains a complex and multifaceted issue that touches on many aspects of Chinese society and development. The vast ongoing debates and discussions about the consequences of hukou at both micro and macro levels reflect its importance and the urgency of finding solutions that can ensure a more equitable and sustainable future for all citizens.

At a micro-level, recent studies cast light on the inequality of opportunities and the tendency of the discrimination regarding different hukou holders in the labour market (Dai and Li, 2021; Yang et al., 2021a; Yu and Liu, 2022; Alam and He, 2022), the quantitative measure of hukou reforms by cities (Zhang et al., 2018), the interpersonal discrimination and attitudes

towards different hukou holders (Tse, 2014; Wang et al., 2021).

At an aggregated level, researchers focus on how the hukou system has sustained inequality (Whalley and Zhang, 2007), how the hukou system has shaped the spatial labour reallocation (Zi, 2020), urban production (Imbert et al., 2022), internal and international trade (Tombe and Zhu, 2019; Fan, 2019), capital accumulation (Vendryes, 2011), marriage market (Xiong, 2023) and modelling the potential outcomes once China fully ease the hukou restriction (Zhang, 2018; Hsu and Ma, 2021; Song, 2021)

In particular, hukou dichotomy has involuntarily created a large group of "floating population", referring to the rural-to-urban migrants ("*Nong min gong*") or RIU migrants as to the typology of this dissertation, the majority of which migrate for economic reasons (Fan, 2005a). Since the hukou conversion is difficult, they can hardly obtain a local permanent residency in the destinations, which excludes them from local resources such as social security coverage, subsidies and public education in the destinations no matter how long they have been living there. Below Figure 3 posted in Chan (2022) has shown the rapid increasing in "floating population" since 1980 and the gap between urban population and urban hukou population shows no sign in converging.

A large thread of literature hence focusing on measuring the discrimination they face in the labour market (Cai and Zhang, 2021), evaluating their well-being (Song and Smith, 2019; Xiang et al., 2022), social networking and integration to the destination community (Xu, 2020; Liu et al., 2020), migration decisions (Ren et al., 2020), willingness to obtain local status (Li et al., 2022b; Vorthorns and Liu, 2022) and so on.

This dissertation contributes to the debate by stressing the socio-psychological aspect of the hukou identity and link it to various economic outcomes: the first chapter tests whether the individuals have internalised the hukou and migration status and concludes that the related stigmas attached to the hukou identity do not disappear when the division itself has been eased, revealing the persistence of the social identity. The second chapter then links the hukou identity with generalised social trust and seeks whether there exists a channel to overturn the gap in trust among different hukou holders. The third chapter innovatively combines

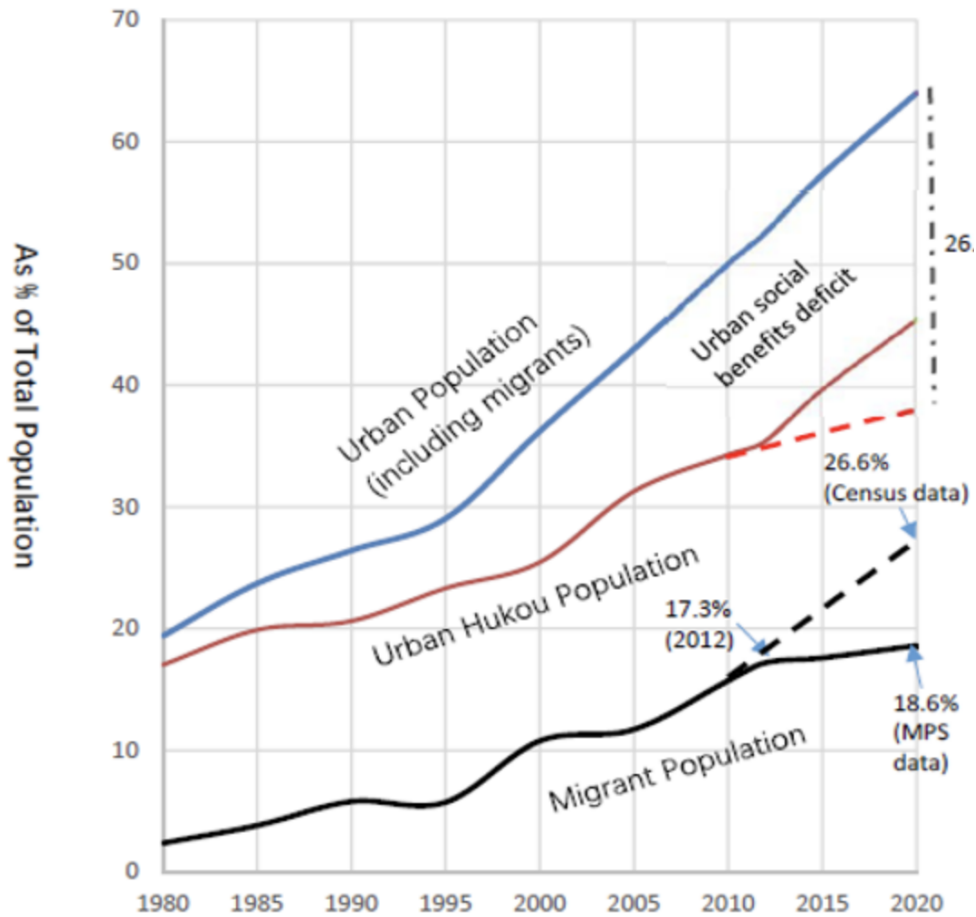


Figure 3: Difference Between Urban Population and Urban Hukou Population

Source: Chan (2021b).

the hukou literature with the intra-household bargaining, examining whether hukou-related social distance between spouses has an impact on women's intra-household bargaining outcomes by controlling the probability of different hukou matching.

## From Hukou Status to Hukou Identity

The Hukou System starts with a hierarchical nature is embodied with the segmented welfare system and reinforced a sense of membership by i. bonding the social benefits and public services to hukou status, meaning from the 1950s individuals had to claim their rights and benefits through a certificate of their status; ii. appointing different government organs and organizations to be responsible for individuals with different hukou status, which further assigned agricultural and non-agricultural hukou holders into two distinct groups; iii. prescribing the inheritable nature to the system, fixing the hukou status intergenerationally. With the devel-



opment of urban areas and public services, the differentiation in welfare between agricultural and non-agricultural hukou holders has deepened. Institutional discrimination further differentiated two groups, suggesting non-agricultural hukou is of higher value than agricultural hukou. During the early years when the Hukou System was established, official mandates and regulations constantly addressed agricultural hukou holders with derogatory phrases. Moreover, scrutiny towards agricultural hukou holders continued till 2000s, from restricting their mobility to strengthening political surveillance. These measures further alienated agricultural hukou holders, especially rural-to-urban migrants, causing a feeling of "outsiders", "inferiority" or "undeserved" (Fan, 2002; Kongshøj, 2017). Feng (2007) categorises individuals into rural (peasants), urban (urbanites) and rural-to-urban migrants based on survey data and finds that they hold distinctive perceptions regarding their social status, implying that such categorisation is "not only material but also mental". Wang and Fan (2012) find that rural-to-urban migrants tend to hold a "persistent rural and inferior identity" despite how long they have been living in the urban areas due to not possessing a permanent urban residency. On the contrary, obtaining a local urban hukou increases the odds that migrants take on the identity of urban residents. Chen et al. (2020a) point it out that hukou remains a critical role in the determination of the urban identity (i.e. captured as the degree to which one self-identifies as an urbanite). With interviews and in-depth participant observations, Lui and Chan (2020) explore the liminal identity construction of rural local people in "urban villages (Cheng zhong cun)" and concludes that the identity construction process often reinforces stereotypes based on hukou and migration status divisions.

Field experiments provided evidence to about such negative perceptions even among primary school pupils. Afridi et al. (2015) find that the salience of hukou status "agricultural or non-agricultural hukou status" modified the performances of pupils of the two hukou categories: agricultural hukou pupils underperformed while non-agricultural hukou pupils outperformed, demonstrating the sense of hukou identity would lead pupils to comply with stereotypes attached to the respective hukou status. With an ultimatum game, Luo et al. (2019) argue that the salience of hukou status (agricultural hukou holder vs non-agricultural hukou holder) affects the subjects' decisions especially agricultural hukou pupils. Agricultural hukou pupils reduced the amount to offer in spite of the counterparts' hukou status and "expected"

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higher offers from non-agricultural hukou proposers, which was interpreted as a compensation for the perception of being inferior out of a sense of fairness. With a trust game where migration status (local vs migrant) has been made salient, [Luo and Wang \(2020\)](#) show that subjects exhibited more trust towards local status pupils. Moreover, subjects exhibit a higher trustworthiness towards the pupils that share the same migration status as themselves. Not only does the hukou identity direct the individual's behaviour, it also affects one's perceptions. As [Luo et al. \(2019\)](#) show in a questionnaire prior to the ultimatum game, all participants have perceived that non-agricultural hukou pupils are more favoured at school and in life compared to agricultural hukou pupils.

Above evidence proves that hukou is more than a register but a social identity that individuals self-identifying with and thereby conforming to the respective stereotypes. Built on the origin of the Hukou System, we consider three dimensions of hukou identity: hukou status, migration status and the rural-urban wise place of residence. The former two are derived from the hukou registration and hence inheritable. The hukou status refers to whether the individual holds an agricultural or a non-agricultural hukou. Such division is often simplified into rural hukou (as in agricultural hukou type) and urban hukou (as in non-agricultural hukou type) in literature. This is because, during the period when the internal migration was stringently restricted, the hukou status represented one's place of living, i.e. agricultural status means one lives in the countryside while non-agricultural status means one lives in the city and implied one's occupation. Later on, when the internal migration tided and eventually the market economy was introduced, hukou status could no longer precisely represent one's residence nor the occupation. But to a large extent, it remains correct to describe the individual's family connection to the rural or the urban areas. Therefore, we keep the use of rural hukou or urban hukou as a simplified description of the hukou status throughout the dissertation. Since the 2014 hukou reform announced a nationwide elimination of the division between agricultural and non-agricultural status, all the hukou status that is mentioned after 2014 is a perceived status. The migration status is determined by whether the individual currently lives in the hukou origin. Every citizen can only register one locality as the hukou origin (as is called the "permanent address") yet a change in hukou origin (i.e. the official hukou conversion) is not easy. Hence most individuals who migrate to other municipalities do not modify

Table 5: Hukou Identity Grouping and the Abbreviations

Panel A				
Type of Residence	Rural Dwellers			
Migration Status	Locals		Migrants	
Hukou Status	Agricultural hukou	Non-agricultural hukou	Agricultural hukou	Non-agricultural hukou
Hukou Identity	Agricultural hukou locals in rural areas (RIR locals)	Non-agricultural hukou locals in rural areas (UIR locals)	Agricultural hukou migrants in rural areas (RIR migrants)	Non-agricultural hukou migrants in rural areas (UIR migrants)
Panel B				
Type of Residence	Urban Dwellers			
Migrant Status	Locals		Migrants	
Hukou Status	Agricultural hukou	Non-agricultural hukou	Agricultural hukou	Non-agricultural hukou
Hukou Identity	Agricultural hukou locals in urban areas (RIU locals)	Non-agricultural hukou locals in urban areas (UIU locals)	Agricultural hukou migrants in urban areas (RIU migrants)	Non-agricultural hukou migrants in urban areas (UIU migrants)

*Note:* As a reminder, the division between hukou status - the agricultural and non-agricultural status (which is also called rural and urban status) has nothing to do with where the individual currently lives. Therefore we would see in above table a group of "UIR locals" which corresponds to "non-agricultural hukou locals living in rural areas" or "urban hukou locals living in rural areas". Kam Wing Chan also considered a similar description of populations by hukou status, migration status and type of residence, please see [Chan \(2018a\)](#).

their hukou origins. They become non-locals or internal migrants in the destinations. Considering most migrants move on their own wills, we acknowledge the self-selection bias in interpreting results related to internal migrants. Hukou status and migration status are two most common dimensions to categorise individuals in hukou literature. However, a third aspect is also important - the type of residence, in the sense that whether one is currently living in the rural or the urban area. Due to the huge rural-urban development disparity in China, hukou identity may have heterogeneous effects in the rural and in the urban areas. We include the rural-urban wise place of residence as a dimension to indicate the available resources and living standard of the individual ([Xie and Zhou, 2014](#)). In addition, the physical environment as urban residency also determines one's urban identity (captured as whether one considers themselves as an urbanite) ([Wang and Fan, 2012](#); [Main and Sandoval, 2015](#); [Chen et al., 2020a](#)).

Altogether hukou status, migration status and type of residence give us eight groups of hukou identities. Table 5 presents how each group is derived and its abbreviation accordingly.

The Hukou System was designed to curb the rural-to-urban migration waves from its start. Complementary regulations were implemented to this purpose which structured institutional disadvantages for the agricultural hukou holders. They were not allowed to obtain grains and food in the urban areas - which was lethal in a planned economy where the food and daily necessities are strictly allocated. Further, to prevent agricultural hukou job hoppers working in the cities, the regulators forbid all kinds of recruitment in the rural areas. Employers from

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factories, construction sites, mines and eventually entities from a more specified list were namely not allowed to recruit in the rural areas. They must report their demand for labour to local authorities and wait for labour allocation. In addition, agricultural hukou holders were restricted to start their own business or to become "moochers (as is described in the official document)". If found unemployed in cities, agricultural hukou holders would be repatriated to their rural origins. These two sets of regulations basically fixed agricultural hukou holders to the land and bonded them to the agriculture sector. When the first *Labour Insurance Regulation* was launched, it launched the social security system in China, specifying the legitimate welfare and benefits that an employee of any types of enterprises could enjoy once they participated, excluding peasants - the majority of agricultural hukou holders. The regulation specified the content and coverage of injuries, disability, medical care, retirement pension and maternal leave, showing the ambition to establish a thorough social security system. Agricultural hukou holders were left behind. Not until 2002 were agricultural hukou holders included in basic medical care (CCCP, 2002).

Apart from this, internal migrants, especially rural to urban migrants are long attached to negative images. Directives and instructions to address the unemployment issue in the cities described the rural to urban migrants as blind influx suggesting that they voluntarily follow the crowd without critical thinking or significant analysis. As is pointed out by Cheng and Selden (1994), the word "blind influx" in Chinese is a reversed homophone of hooligan, further attaching a riot image to the rural to urban migrants. Eventually it is specified that all the unemployed agricultural hukou holders should be repatriated and no "mooching" behaviour was allowed. These associated the rural to urban migrants with an indecent image. As the wave of internal migrants momentum, the problem of fugitives has increased and raised public concern. Though the official directive pointed out that fugitives only accounted for a small part of the migrants, it called for stricter surveillance or scrutiny on all the migrants. This may stigmatise the internal migrants as if they are a danger to the public security.

As the growth of rural urban inequality in terms of income, welfare, schooling qualities, the rural residents experienced a lagged development compared to their urban counterparts. Poverty and lack of cultivation are common perceptions when talking about rural residents.

Employment opportunities were limited in the first fifty years of the republic, rural residents were largely fixed on the land which did not belong to them. Meanwhile, even if young adults managed to migrate and worked in cities, their offspring could hardly get admitted in schools in the urban areas. School admission, especially at the primary level of education is strictly controlled by hukou registration - the hukou registration of the child determines to which school the child would be admitted.

## **Do We Still Need to Talk about Hukou ?**

Up to date, the Hukou System remains a present carrier of social welfare and public services for people in China. Even though the agricultural and non-agricultural hukou division has been eliminated, the benefit gap attached to previous hukou status persists (Chan, 2021b). The parallel policies to equalise the benefits between former agricultural and non-agricultural hukou holders are still undergoing. Furthermore, the migration status becomes a significant feature derived from the Hukou System which stratifies individuals' welfare and access to public services by hukou origin. At this stage, the locality which one registers as the hukou origin plays a dominating role in determining one's benefits and rights. Other than the institutional aspect, the impact of the Hukou System as a social identity is underdiscussed. With the "abolition" of the hukou division and policies to equalise hukou-related benefits and rights, does hukou still influence one's everyday live? Can a reform to eliminate hukou division reverse the hukou-related stigma? Or is there any channel to overcome the hukou-related stigma? The first chapter shows that the reform did not reverse the stigma as the hukou-related perceived discrimination remains omnipresent. Based on that, the second chapter moves on the subject of trust. Since a long discriminated group may exert less trust, the second chapter asks whether education can close the trust gap among people with different hukou identities. The third chapter casts lights on hukou-related social distance in a household, the ongoing hukou hierarchy even plays a role in determining the household's bargaining outcomes.

To study the Hukou System provides insights on how and why certain stigmas and biases exist, as well as how they are implicitly nurtured. Even when reforms to remove the division in identities are installed, the identities and the respective stigmas stay. People continue to

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hold the perceived hukou identity and behave accordingly. In addition, a continuing focus on the hukou reforms would provide insights on how long if ever it takes for these stigmas to be reversed and what could be potential vehicles. Looking beyond the Chinese context, this dissertation analyses how a social identity is constructed, reinforced and internalised from an institution aiming to stabilise the society and boost the economy. Emphasis on the socio-psychological power of a social identity can inspire us to contemplate cultural traditions and their inventions. Furthermore such focus helps policy makers create more effective interventions that address the underlying causes of inequality and discrimination. Last but not the least, this dissertation ring the bell to worldwide authorities that how profound the harm a socially defined identity can do to the economics and individuals which should be prevented from happening. Ignorance on what has been traded off for economic prosperity would only bring partial equality and general disparities.

## **Outline of the Dissertation**

This dissertation contributes to the enormous hukou literature by emphasising its socio-psychological aspect of the hukou identity and link it to various economic outcomes. By defining the hukou identity as a triple interaction of hukou status, migration status and type of residence, this dissertation standardises the description of hukou as a social identity. Moreover, this dissertation examines whether a hukou reform can reverse the hukou-related stigma and finds that the disparity caused by the Hukou System cannot be easily overturned. The first chapter focuses on hukou-related perceived discrimination and the impact evaluation of a hukou reform; the second chapter inspects the level of generalised trust for each group and argues that hukou identity accounts for such differences in trust; the third chapter looks into intra-household bargaining and draws a causality between the hukou-related social distance and household bargaining outcomes.

### **Data Representativeness**

China Family Panel Studies (CFPS) is a nationally representative biannual longitude survey launched by the Institute of Social Science Survey (ISSS) of Peking University since 2010. It in-

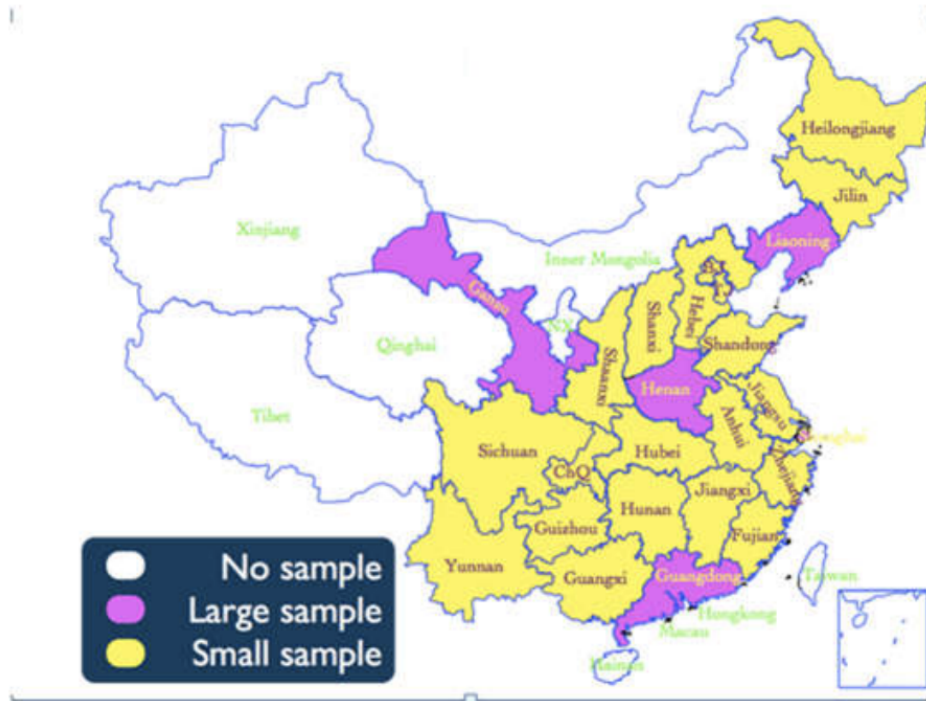


Figure 4: CFPS Surveyed Provinces

Source: Xie et al. (2017).

cludes individual-level, family-level and community-level information on economic activities, demographic characteristics, family dynamics and relationships, migration and health. The 2010 baseline survey managed to reach 14960 households distributed over 635 urban neighborhoods or villages in 162 administrative counties of 25 provinces. Figure 2 marks all the surveyed provinces in colours. Compared to Figure 5 which plots the urban population by city according to the Census 2010 and Census 2020 respectively, we can see that the surveyed provinces do include the most populated areas in China. Figure 6 compares the sex-specific relative sizes of age groups of the CFPS 2010 baseline respondents to the Census 2010. The shapes of the two pyramids are almost identical (Xie and Hu, 2014). More information and comparison about data representativeness can be found in Xie et al. (2017).

### Chapter 1: Does Hukou Reform Reduce the Hukou-Based Perceived Discrimination ?

The Hukou System is a household registration system implemented in China in the 1950s that divides rural and urban populations. It assigned different status to different people depending on their place of residence and the type of work they did initially and became inheritable once it was set up. Urban residents were considered under the responsibility of

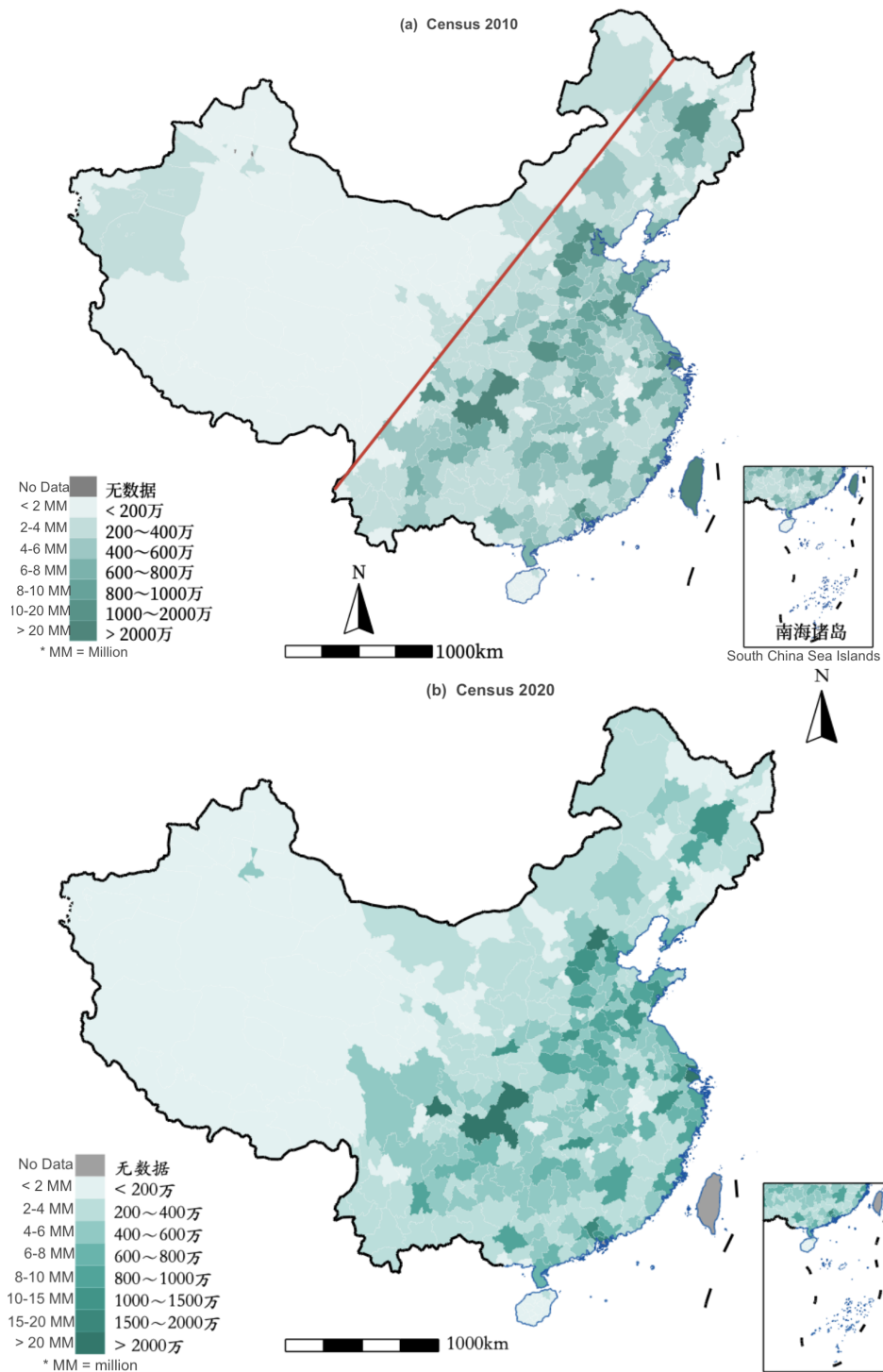


Figure 5: Urban Population by City in Census 2010 and Census 2020

Note: Upper figure depicts Census 2010 and lower figure represents Census 2020. Source: Data from Census 2010 and Census 2020. Graphs from RStata (2022).

the state, while agricultural hukou holders were restricted to rural areas. This division gave non-agricultural hukou holders access to preferential rights in terms of income, housing, education, healthcare, employment and retirement (Cheng and Selden, 1994). Agricultural hukou holders were largely deprived of these benefits and were discriminated against (Depeng, 2002;



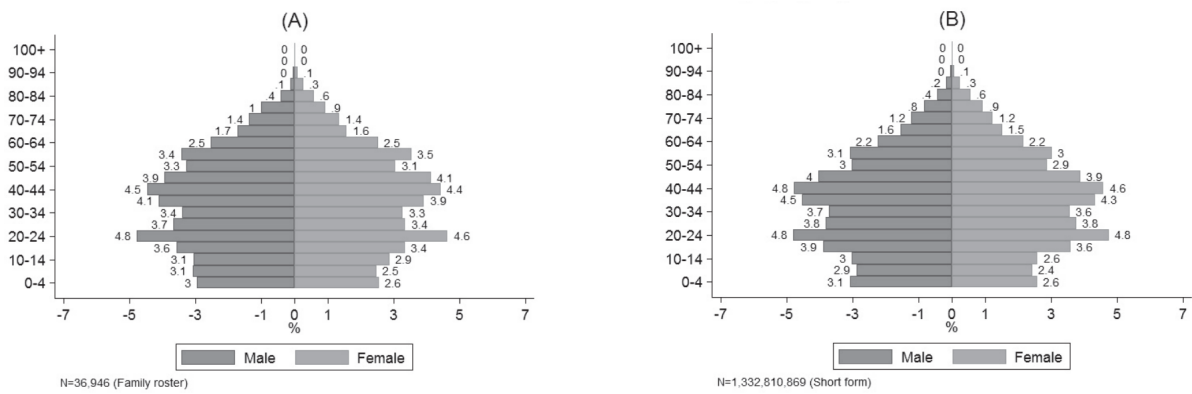


Figure 6: Age-Sex Structure of the CFPS 2010 Baseline Survey and the Census 2010  
 Source: Xie and Hu (2014); Xie et al. (2017).

Song, 2014; Zhu, 2016; Wang, 2018; Nie, 2019), with deep-rooted perception of their status leading to them being seen as inferior, even amongst primary school pupils Afridi et al. (2015); Luo et al. (2019). In order to alleviate the inequality caused by the Hukou System, a reform was introduced in mid-2014 aiming at abolishing hukou status and facilitating hukou conversion all over China. Based on a nationally representative survey (China Family Panel Survey) which covered the launch period of the reform, the first chapter tackles the research question: whether a reform would reverse the hukou-related perceived discrimination. Focusing on a question about whether the respondent encountered hukou-related unfair treatment in the past 12 months, we compare the answers among people with different hukou identities cross-sectionally and throughout most survey phases. We find that agricultural hukou holders especially agricultural hukou migrants are most likely to report hukou-related perceived discrimination. Over the time, a change in either hukou status or migration status into a lesser privileged status (i.e. changing from non-agricultural hukou to agricultural hukou) would increase one’s likelihood of reporting hukou-related perceived discrimination, which is in line with the cross-sectional analysis. Then a triple difference-in-difference estimation is introduced to evaluate the impact of the hukou reform, which aims to eliminate hukou status division and facilitate the hukou conversion procedures in eligible prefectures. The results suggest little effect on reversing hukou-related perceived discrimination. Only when we compare the change in attitudes between former agricultural and non-agricultural migrants do we see a convergence in terms of hukou-related stigma. However, we do not observe a similar result between local people. Moreover, when we compare the perceptions between non-agricultural

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migrants and locals, a diverging result is observed in the short term. It may indicate that the reform signals the social knowledge structure of migration status among non-agricultural migrants and reminds them aware of the related disadvantages. We do not observe any impact of the reform in the long run (which only two years after the reform due to data limitation). The findings are in line with the literature, confirming the persistence of the identity as well as the perceptions attached to it which could hardly be changed in a short period.

## **Chapter 2:** *Trust in China: the Role of Hukou*

The second chapter is a sequel of the work from the first chapter. Researchers have shown that members from long discriminated groups are less likely to trust (Alesina and La Ferrara, 2002). Evidence from a field experiment in China shows that pupils tend to trust people with the same hukou identities as they are and in general local people despite the hukou status are considered the most trustworthy (Luo and Wang, 2020). Since the first chapter confirms that agricultural hukou holders especially agricultural migrants are the main drive to report hukou-related perceived discrimination, the second chapter examines the trust gaps among individuals with varying hukou identities and inspects a potential channel to close that trust gap. It focuses on a generalised social trust question "In general, do you think that most people are trustworthy, or it is better to take greater caution when getting along with other people?" from the 2014 phase of CFPS data. A cross-sectional analysis is adopted as the level of trust is a persistent feature and can hardly vary within a short time. In the baseline logistic analysis, we find that agricultural hukou holders and rural residents are less likely to trust compared to the non-agricultural hukou holders and urban residents respectively. However, when the educational attainment is introduced, the significance of hukou identity disappears. Literature suggest that people get more educated can be a result of trusting the institutions which induces reversed causality (Papagapitos and Riley, 2009; Bjørnskov, 2009; Wu and Shi, 2020). Therefore, a Cohort Difference-in-Difference estimation and an Instrumental Variable approach are adopted to deal with endogeneity. We divide individuals into cohorts by whether they are beneficiaries to the *Compulsory Education Law* and use the cohort indicator as the instrument. The results from the Cohort DiD and IV estimation confirms that agricultural hukou holders and rural residents tend not to trust. However, the impact of migration status

on trust is not clear. This may be from the low percentage of migrants in the dataset which was only 5.0%. Also, results from the Cohort DiD and IV approach imply that the difference in trust behaviour is caused by the hukou status and the type of residence, which cannot be overturned by education. In this regard, the impact of the hukou identity on individual behaviour remains profound and cannot be reversed easily.

**Chapter 3: *Does Hukou-Related Social Distance Affect Intra-Household Bargaining ?***

As a hierarchy-like attribute, hukou identity is inevitably showing up in almost every matrimonial advertisement and asked by both parties in a speed dating scenario in the Chinese marriage market, reflecting its ongoing significance in revealing one's social status on top of educational attainment, occupational status and income level. Previous chapters have investigated the stigmas towards agricultural hukou holders and internal migrants persist. Hukou identity still exerts a strong hierarchical characteristic. In this regard, hukou identity appears as an equally vertical attribute in marriage matching as education or occupation. A non-agricultural hukou status is deemed superior to an agricultural one while a migrant status is considered inferior to a local status. In line with assortative matching theory, the marriage market in China is dominated by intra-hukou couples whereas inter-hukou marriage does happen and increase over the years (Qi and Niu, 2012; Qian and Qian, 2017). However, few studies look into heterogamy marriage and investigate the impact of the social distance between two parties on the household outcomes. This chapter answers to the question whether the hukou-related social distance affect intra-household bargaining. With the 2014 phase of CFPS data, this chapter focuses on two outcome variables proposed by Friedberg and Webb (2006) and Bertocchi and Torricelli (2014): the role of household head and the decision power. The household head is defined as the individual who is responsible for the family finance and economic condition while the decision power indicator is an aggregation of events over which one has a final say power. We investigate the determinants of these two outcome variables by including the hukou-related social distance between two spouses controlling other common determinants of intra-household bargaining power such as human capitals of both spouses, household characteristics and regional fixed effect (Banerjee et al., 2013; Bertocchi and Torricelli, 2014). All the estimations are conducted from the wife's perspective. A baseline logit

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estimation and an OLS estimation are conducted with respect to two outcome variables. By introducing controls gradually, we notice that the positive migration status distance (i.e. local status females marrying down to migrant status husbands) can significantly increase the female's chance to be the household head as well as her intra-household decision power compared to intra-hukou married females. The story is the other way around if she married up - a marrying-up wife is less likely to be the household head, nor does she exert more decision power compared to same-hukou married females. To draw a causality, we then employ a counterfactual framework with augmented inverse probability estimators. Our results stay robust that marry-down local females are more likely to be the household head and have more "final say" over family issues. Further robustness check examine the results considering the scenarios of family labour specialisation, correlation between hukou status distance and migration status distance, and cohabitation with grandparents. It is notable that, contrary to migration status distance (local status versus migrant status), hukou status distance (agricultural status versus non-agricultural status) loses its significance once controls are included. This on the one hand may reflect that the socio-economic distance between the two spouses can capture the information represented by the hukou-status distance; on the other hand, it may reflect that the influence of hukou-related social distance is weighing towards the migration status distance. In fact, as the carryout of hukou reforms, the differentials in the benefits and disparities associated with hukou status are narrowing down (Song, 2014). Hukou origin, which indicates the locality where the individual is able to enjoy hukou-related benefits and rights, becomes more influential, shaping the marriage market and affecting intra-household relations profoundly.



# APPENDIX

Table 6: Official Mandates about Rural to Urban Migrant Influx

Time	Department	Document	Key Strategies and Updates
April, 1953	former State Council	Directive on Dissuading Peasants from Blind Influx into Cities	<ol style="list-style-type: none"> <li>1. Dissuading peasants from moving to cities;</li> <li>2. Restrict the issue of move-out permits;</li> <li>3. Persuade unemployed peasants to go back to their rural origins;</li> <li>4. Forbid construction sites recruiting in the rural areas without permission</li> </ol>
March, 1954	Ministry of the Interior Ministry of Labour	Joint Directive to Control Blind Influx of Peasants into Cities	<ol style="list-style-type: none"> <li>1. Assist peasants with spring ploughing and improve agricultural productivity;</li> <li>2. Forbid factories, mines, construction sites, etc. recruiting in the rural areas without permission</li> </ol>

Table 6 continued from previous page

Time	Department	Official Document	Key Strategies and Updates
December, 1956	State Council	Directive on Preventing Blind Exodus of Peasants	<ol style="list-style-type: none"> <li>1. Diversify winter sideline productions to self-rescue amid the famine;</li> <li>2. Move-out permits should only be issued to people who are severely affected by the famine and holding a job offer elsewhere;</li> <li>3. Help unemployed peasants to integrate in the recipient areas if possible;</li> <li>4. Forbid factories, mines, railway sectors, transportation sectors, construction sites, etc. from recruiting in the rural areas without permission</li> </ol>
March, 1957	State Council	Supplementary Directive on Preventing Blind Exodus of Peasants	<ol style="list-style-type: none"> <li>1. Set up centres in transportation hubs to dissuade peasants from moving to cities;</li> <li>2. Set up institutes to deal with peasants influx in the most popular destination cities</li> </ol>



Table 6 continued from previous page

Time	Department	Official Document	Key Strategies and Updates
September, 1957	State Council	Circular on Preventing Peasants from Blind Influx into Cities	<ol style="list-style-type: none"> <li>1. Persuade peasants affected by the natural disaster to stay;</li> <li>2. Forbid employers to recruit in the rural areas;</li> <li>3. Repatriate peasants to their rural origins upon their arrival in cities;</li> <li>4. Repatriate peasants along their way to cities</li> </ol>
December, 1957	Central Committee of the CCP State Council	Directive on Stopping Blind Exodus of Peasants	<ol style="list-style-type: none"> <li>1. The public security sector and the railway sector are in charge of the monitoring and repatriation of peasants;</li> <li>2. Scrutinise the grain allocation only to eligible persons;</li> <li>3. Scrutinise the licence of small businesses, prohibit peasants starting a business</li> </ol>

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# DOES HUKOU REFORM REDUCE THE HUKOU-BASED PERCEIVED DISCRIMINATION ?

*This chapter is based on a paper co-authored with Catherine BROS and Julie LOCHARD*

## 1.1 Introduction

The Chinese Hukou System (or Chinese Household Registration System) is essential in understanding the development of China. It is imposed by the central government in 1950s to a) better regulate the numbers of regular inhabitants in different regions, b) to understand the change in the inhabitants and the mobility of these people and c) to curb migration from rural to urban areas and inflows to the border areas (Ministry of Public Security, 1957). It records one's place of living at that time (i.e. hukou origin) and divides them into either agricultural or non-agricultural hukou status (i.e. hukou status). That is to say people residing in the rural areas, regardless of their actual birthplaces and current occupations, are officially documented as agricultural hukou holders (rural hukou holders) whereas people residing in the urban areas are documented as non-agricultural hukou holders (urban hukou holders). At that time a rural hukou holder could not leave their hukou origin to work or to study in cities unless obtaining permissions via rigorous approval process. Moreover, one could only access public services like food allocation and public housing programs in their hukou origin, which further discourages initiatives of internal migration (mostly from rural to urban areas) (Chinese National People's Congress, 1958). Additionally, as hukou status is inheritable from parents to children in spite of the children's birthplaces and the policies for hukou conversion (i.e.,

changing one's hukou from rural status to urban status) are generally stringent, such hukou division constantly exempts rural hukou holders and members of rural households from job opportunities and quality education in cities (Liu, 2005). Rural hukou holders are therefore widely associated with stereotypical images of being poorer and less cultivated.

In order to alleviate the development disparity and to make public service more inclusive, the Chinese government has put forward a series of hukou reforms. The year 2014 witnessed a milestone as the division of hukou status was announced to be eased in all municipalities of less than one million *de facto* urban inhabitants. It means that after that date, people from those municipalities were able to convert their hukou status from rural to urban freely. By doing so, former rural hukou holders were able to have a same access to public service, facilities and social welfare as urban hukou holders do. In this case, whether or not those stereotypes attached to rural hukou holders would be lifted remains an open question. In this paper, we investigate whether the implementation of this reform has reversed such stereotypes and reduced perceived discrimination.

Stereotypes towards the rural hukou holders, as they are poorer and less cultivated, are prevailing judgements attached to this social group. They are believed to be a threat to one's self-image and performance. The notion of stereotype threat is firstly popularized by Steele and Aronson (1995). In experiments where college students were asked to do verbal tests for different purposes, i.e., whether or not it was for a diagnostic of intellectual ability, researchers found that African-Americans significantly under-performed compared to their white counterparts when told the test was for an intellectual diagnostic while they performed equally when told nothing. Steele and Aronson argued that the revealing of a racial stereotype about intellectual ability tend to lead people to conform to it regardless of the individual's actual competence. Later on, Spencer et al. (1999), via experiments about women and men's mathematical performances, found that both female and male participants performed equally under the circumstance that a statement of "there is no gender difference in terms of maths ability" was made while female participants were observed under-performing in the tests when a questionnaire aimed to reinforce the stereotype that "women are weaker in maths" was given prior to the actual tests. Shih et al. (1999) showed a likewise result in priming ethnic identity

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and gender identity. They found that by revealing ethnic identity, Asian-American women displayed better quantitative skills in accordance with the stereotype that Asians are better at maths than other ethnic groups while they performed worse when gender identity was revealed as women are widely believed weaker in maths. With results in two directions, [Shih et al.](#) argued that different stereotypes attached to the corresponding social identities may alter the same individual's behaviour in the direction that prejudiced by the stereotype. In line with this idea, [Hoff and Pandey \(2006\)](#) argued that individuals tended to perform as are indicated by the stereotypes attached to the group which they identify with. They showed evidence with experiments of maze-solving tasks among Indian young boys. The boys from a low caste were observed a significant drop in maze-solving tasks when their caste identities were revealed to high-caste participants and those boys from a high caste were observed a raise in maze-solving tasks when their caste identities were made salient in front of low-caste participants. [Smith et al. \(2008\)](#) found that the perception of one is of low social hierarchy would erode one's performance. [Hoff and Pandey](#) concluded that the public revelation of one's social identity, especially an identity that is constantly discriminated against, impedes their economic performance.

As is argued by [Hoff and Stiglitz \(2010\)](#), a social identity is very often justified by social construction which is the case of Chinese Hukou System. Hukou itself is a political construction which in light of [Akerlof and Kranton \(2010\)](#)'s analytical framework provides another social context where the identity economics could be applied. The Hukou System divides citizens into two social categories: rural and urban status. Apart from having lower healthcare coverage and less housing subsidies ([Chan and Zhang, 1999](#); [Chan, 2013](#); [Song, 2014](#)), rural hukou holders cannot enjoy as much education as their urban counterparts do bringing about a 3.11-year gap in schooling between rural hukou holders and urban hukou holders ([Liu, 2005](#)). Even when years of schooling remain the same, the quality of education in rural areas is not comparable to that in urban areas ([Fu and Ren, 2010](#)). Also, [Liu](#) argued that hukou status deprives rural hukou holders' access to jobs with more rewards to education and leads rural hukou holders to invest less in education. This may be a reason why rural hukou holders are less likely to be employed in the nation-owned enterprises which require relatively higher education experiences ([Song, 2014](#)). It is also believed that those rural hukou holders who migrate to

cities (rural-in-urban migrants) tend to work in labour-intensive industries in dirty dangerous environment with low and quite often delayed paychecks (State Council [State Council](#), 2006).

With all said above, distinct social norms have been attached to rural and urban hukou holders. Urban hukou holders are often addressed as "Urbanites" ("Cheng li ren") which is associated with an image of a stylish, well-educated white collar while rural hukou holders are addressed as "Villagers" ("Xiang xia ren") with an image of someone lacking in taste and doing repetitive works.<sup>1</sup> Such appellation implies strong disdain towards rural hukou holders. Rural hukou pupils are perceived to be less favoured at schools ([Luo et al., 2019](#)) and less trustworthy ([Luo and Wang, 2020](#)). In this sense rural hukou is deemed as an inferior identity to urban hukou. As such perception is widely held, [Afridi et al. \(2015\)](#) presented that the revelation of hukou identity reduced the number of mazes solved by non-local rural hukou pupils while it increased that of the local urban hukou pupils regardless of gender, grade or past maze game experiences. This experiment makes another proof for the argument of [Hoff and Pandey's](#) and even goes further: even a private reminder of one's social identity could shift one's behaviour which may indicate how deeply root the perceptions of social identities. The intention of this paper is to investigate whether a reform could reverse such perceptions.

Previous literature about hukou reforms cast lights on how hukou reforms could narrow the wage gap between the skilled and unskilled sectors ([Pi and Zhang, 2016](#)), on how hukou reforms could improve social welfare via reducing the living cost for internal migrants ([Fields and Song, 2020](#)) and whether hukou reforms affect the housing preferences of rural-urban migrants ([Hui et al., 2014](#)). [Zhang et al. \(2019\)](#) also presented a thorough comparison on the stringency of hukou conversion criteria across China via a holistic analysis on prefectural hukou reforms from 2000 to 2016. However, to the best of our knowledge, there is no existing evidence on the impact of the 2014 reform on reversing the perceptions of hukou identity.

We use a panel dataset and a Triple Difference-in-Difference (DDD) strategy to investigate whether the 2014 reform has changed the perceived discrimination related to hukou identity. To begin with, we examine whether hukou identity affects one's perceived discrimination. We find that, in line with previous literature, rural-in-urban migrants are the primary drive

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<sup>1</sup>A more implicit translation of "Xiang xia ren" would be the quite vulgar term "Bumpkins".

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to report hukou-related perceived discrimination. Additionally, we find those urban hukou holders living in rural areas also make such declaration, indicating that perceived discrimination may arise when there is an inconsistency between hukou status and type of residence. Then, we move on to a panel estimation to see, when given the chance, whether individuals would converse their hukou status in order to obtain a consistency between the hukou status and the type of residence. Finally, we turn to the question that what role the 2014 reform plays in reversing individuals' perception towards different hukou identities. We find that the reform turns out ineffective in reducing hukou-related perceived discrimination, suggesting that institutions may have profound impacts on shaping one's belief which is hardly reversed or even affected.

This paper is organized as follows. In Section 1.2, we present the data and our empirical strategy. In Section 1.3, we report our baseline cross-section and panel estimation results. Section 1.4 concludes.

## **1.2 Data and Empirical Strategy**

### **1.2.1 Data**

Our data is from CFPS, a longitudinal survey which has been conducted every 2 years since 2010 by Peking University. The survey covers both economic and socio-psychological indicators ranging from income, education and health to networks, values and beliefs. The sampling is drawn through multiple stages (province level, county level, village level and household level) to be nationally representative. All members over the age of nine and economically supported by the family are considered core members and interviewed with a tailored questionnaire, i.e., adult questionnaire or child questionnaire. In theory, one would stay interviewed unless dead. In 2010, the baseline survey covered almost 15,000 households and included 30,000 individuals. This paper uses data from the waves of 2010, 2014 and 2016.<sup>2</sup>

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<sup>2</sup>We set the 2012 wave aside as there appears to be a sampling bias for that year. In particular, the income distribution in 2012 is skewed towards lower income (details please check Table 1.13 in appendix). Besides, 2012 is an election year, which could affect people's responses to the perceived discrimination question, thus introducing declaration bias. At the time this paper is drafted, four waves of survey data are officially available while the 2018 phase is still under cleaning.

## 1.2.2 Main Variables

### Perceived Discrimination

Our aim is twofold. First, we would like to check whether perceived discrimination is affected by the hukou status of the individual. Second, given the 2014 reform providing individuals with more convenience to convert hukou status, we intend to investigate whether this has significantly changed the relationship between hukou status and perceived discrimination. Therefore, we are particularly interested in one survey question which characterizes perceived discrimination: Did you experience unfair treatment due to household registration status in the past year?<sup>3</sup> One may respond as "yes","no" or "no but heard about it". Our dependent variable is a dummy for this 'unfair treatment' question. It is valued 1 when the individual responds "yes" and 0 for the answer "no". We treat the answer "no but heard about it" as missing due to the ambiguity of the answer and because the 2010 phase does not include this option.

### Hukou Identity and The Reform

Since the household registration contains information of two dimensions (hukou status and hukou origin), we introduce two binary variables to represent each of them. *Rural hukou* goes to 1 when the individual has an agricultural status and is equal to 0 for non-agricultural.<sup>4</sup> *Migration status* indicates whether the individual currently lives in their hukou origin or otherwise as an internal migrant. It takes the value 1 if the individual holds a migrant status and 0 if not. For instance, it is equal to 1 if the individual has registered Prefecture A as hukou origin but lives in Prefecture B instead as opposed to still lives in Prefecture A.

Previous literature has shown that discrimination in China has a strong linkage to hukou status and that those most affected are rural hukou holders living in urban areas. For instance, rural to urban migrants receive an unequal returns to human capital attributes compared to their urban counterparts (Zhu, 2016; Siddique, 2020), have fewer access to formal employment

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<sup>3</sup>Household registration status is an equivalent term to hukou status.

<sup>4</sup>Here we do not consider those people without hukou status as they only take a small percentage in the data.

opportunities (Meng, 2001) and to public services and welfare programs (Song, 2014). In this regard, rural to urban migrants may be more likely to feel discrimination against their group as a result of the hukou registration compared to other groups. Therefore, we also account for the type of residence to characterize whether the individual lives in the urban or the rural in addition to the hukou and migration status. The division of the rural and the urban areas is determined by the National Bureau of Statistics of China.<sup>5</sup> The indicator *rural resident* goes to 1 when one lives in the rural area and 0 otherwise. In total we have three variables interacting with each other to define an individual's social identity in China: hukou status, migration status and type of residence. These three variables are distributed as Table 1.1 shows.

Table 1.1: Descriptive Statistics Part 1

		2010	2014	2016
Perceived discrimination	1 - Yes	10.93%	6.74%	6.37%
Hukou status	1 - Rural	72.85%	76.68%	77.16%
Migration status	1 - Migrant	7.61%	3.56%	3.22%
Type of residence	1 - Rural	55.24%	57.57%	57.95%
N		9904	13501	14496

Following the hukou literature, we combine the two dummy variables hukou status and type of residence and categorise individuals into the following four major groups: Non-agricultural Hukou Holders in Urban Areas, or Urban Hukou Holders in Urban Areas (UIU), Non-agricultural Hukou Holders in Rural Areas, or Urban Hukou Holders in Rural Areas (UIR), Agricultural Hukou Holders in Rural Areas, or Rural Hukou Holders in Rural Areas (RIR) and Agricultural Hukou Holders in Urban Areas, or Rural Hukou Holders in Urban Areas (RIU). As a reminder, both type of residence and hukou status cannot determine whether one is a migrant or not. For instance, a RIU individual can be a local person as RIU only presents that this person holds a rural hukou status and currently lives in urban areas. It is the hukou locality that matters to determine one's migration status. Therefore it is possible to have a RIU local or a UIU migrant combination. In this case, we further distinguish locals and migrants within each group which ends up in eight categories. The definition and correspondent distributions are shown in Table 1.2.

Before jumping into the hukou reform, it is essentially helpful to learn about the charac-

<sup>5</sup>Source: <http://www.stats.gov.cn/tjsj/tjbz/tjyqhdmhcxhfdm/>



Table 1.2: Descriptive Statistics Part 2

	2010	2014	2016
Urban locals in urban areas (UIU locals)	21.94%	18.75%	18.11%
Urban locals in rural areas (UIR locals)	2.23%	3.07%	3.26%
Rural locals in urban areas (RIU locals)	16.70%	21.01%	21.43%
Rural locals in rural areas (RIR locals)	51.40%	53.61%	53.98%
Urban migrants in urban areas (UIU migrants)	2.62%	1.27%	1.24%
Urban migrants in rural areas (UIR migrants)	0.25%	0.23%	0.23%
Rural migrants in urban areas (RIU migrants)	3.50%	1.39%	1.26%
Rural migrants in rural areas (RIR migrants)	1.24%	0.66%	0.48%
N	9904	13501	14496

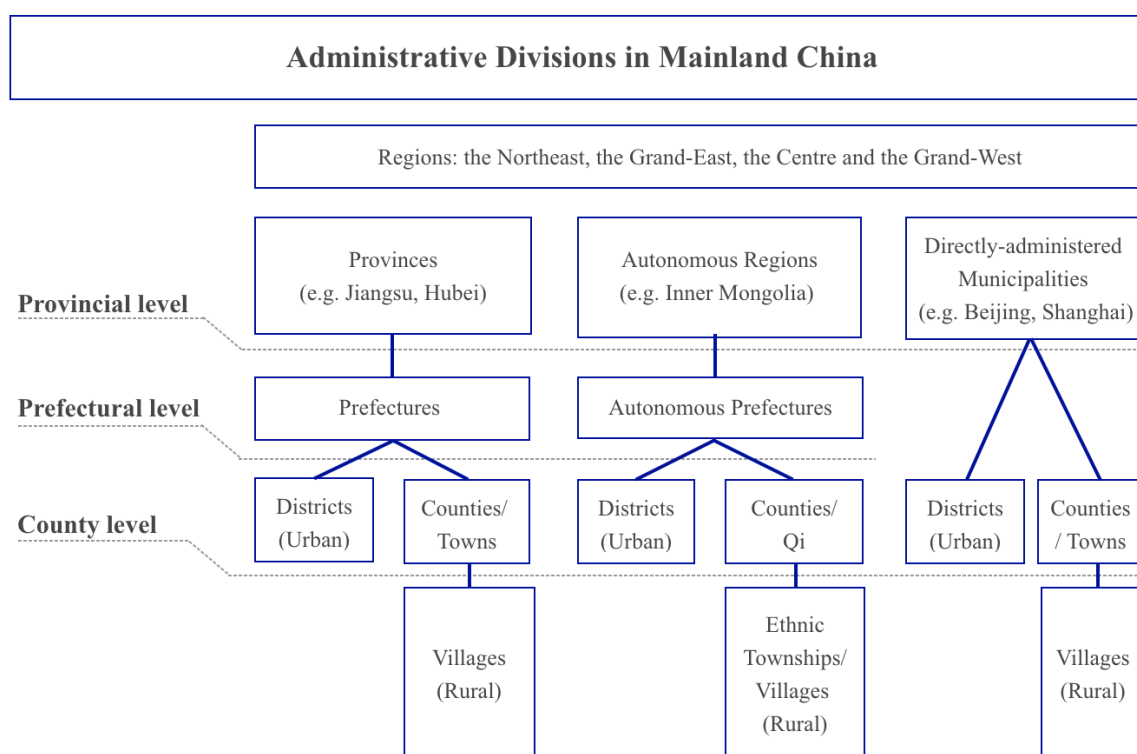


Figure 1.1: Administrative Divisions in Mainland China

Source: Author's depiction according to the *Constitution of the People's Republic of China* and the *Codes for Urban-rural Division* by the National Bureau of Statistics of China.

teristics of administrative division in mainland China which could eliminate confusion about the reformed areas. According to the Constitution, the administrative divisions in mainland China consist of three levels of governments: the provincial level, the prefectural level and the county-level, each one being superior to the later. When a policy is implemented at a superior government, it will affect all subordinating governments. Figure 1.1 gives a brief idea of the administrative constitution of mainland China.

Table 1.3: Statistics of Prefectural Level Municipalities in China

	Municipality Size	National Bureau of Statistics				CFPS Dataset			
		N		Percentage		N		Percentage	
Reformed	<0.2 million	2	158	0.69%	54.48%	1	71	0.79%	55.91%
	0.2 - 0.5 million	51		17.59%		20		15.75%	
	0.5 - 1 million	105		36.21%		50		39.37%	
Non-reformed	1 - 3 million	110	132	37.93%	45.52%	42	56	33.07%	44.09%
	3 - 5 million	11		3.79%		4		3.15%	
	5 - 10 million	8		2.76%		7		5.51%	
	>10 million	3		1.03%		3		2.36%	
Total		290				127			

Source: The Statistical Data of Cities at Prefectural Level and Above, 2013.

As discussed in the introduction, in mid-2014 a hukou reform to facilitate the hukou conversion has been implemented in all prefectural level municipalities with less than one million *de facto* urban inhabitants. Therefore, from 2014 and on, citizens from a prefecture of less than one million urban inhabitants were given the opportunity to convert their hukou status, irrespective of whether they lived in urban or rural areas within the prefecture. This has impacted 158 prefectural level municipalities nationwide, more than a half of all municipalities. In the CFPS dataset, 71 out of 127 municipalities are concerned. Table 1.3 presents the overall statistics on the size of prefectural level municipalities and Table 1.4 lists the share of reformed municipalities among all the surveyed ones by province. Figure 1.2 shows the map of China and marks the surveyed provinces in red.

We define a treatment indicator which takes the value 1 for qualified prefectures and 0 otherwise.<sup>6</sup> As the prefectural level information for each individual is only available for the year 2010, we have to make further assumptions.<sup>7</sup> In this regard, we extrapolate the residence information of existing interviewees for the year 2014 and 2016 based on their residence in 2010 and other residential indicators. As a conservative approach, we assume that the individual who stays in the same province and does not change the type of residence has not moved and has been living in the same prefecture over the periods.

Although on average within-province migration accounts for 62.3% of the total internal

<sup>6</sup>The numbers of *de facto* urban dwellers are from the yearbook *National Urban Population and Construction Land by City 2013*.

<sup>7</sup>The prefecture information is classified as restricted data and only accessible via an additional application. Source: <https://opendata.pku.edu.cn/file.xhtml?fileId=6643datasetVersionId=872>

Table 1.4: Share of Reformed and Non-Reformed Cities

Provinces/ DAMs	Reformed	Non-Reformed	Total	Share of Reformed Cities
Liaoning	9	3	12	75.00%
Gansu	6	3	9	66.67%
Guangdong	6	7	13	46.15%
Hebei	6	2	8	75.00%
Henan	5	9	14	35.71%
Shanxi	5	2	7	71.43%
Sichuan	5	3	8	62.50%
Guizhou	4	0	4	100.00%
Yunnan	4	0	4	100.00%
Guangxi	3	0	3	100.00%
Heilongjiang	3	2	5	60.00%
Hunan	3	3	6	50.00%
Jilin	3	0	3	100.00%
Anhui	2	1	3	66.67%
Jiangxi	2	1	3	66.67%
Shaanxi	2	1	3	66.67%
Fujian	1	1	2	50.00%
Jiangsu	1	2	3	33.33%
Shandong	1	6	7	14.29%
Beijing	0	1	1	0.00%
Chongqing	0	1	1	0.00%
Hubei	0	3	3	0.00%
Shanghai	0	1	1	0.00%
Tianjin	0	1	1	0.00%
Zhejiang	0	3	3	0.00%
Total		127		

migration according to the 2010 census (National Bureau of Statistics, 2010; Chan, 2021a), researches have pointed it out that the migration pattern is highly diverse region by region (Yu et al., 2013; NBS et al., 2019; Zhou, 2021). Eastern coastline provinces tend to attract migration inflows while inland provinces tend to contribute to migration outflows as is shown in Figure 1.2. Interprovincial migration have become more unidirectional and concentrated not only because economic migration is the major driver of the internal migration, but also regional development disparity is an increasingly important factor of interprovincial migration (Cai, 1999; Fan, 2005b,a; UNFPA, 2010; Chan, 2013). Figure 1.4 depicts the 20 largest interprovincial migration flows from 2010 and 2015, where we can see that the migration flows are highly concentrated in the southeastern and eastern parts of China (Chan and Yang, 2020; Chan, 2021a). Moreover, 82.7% rural to urban migrants in the coastal areas mainly migrate



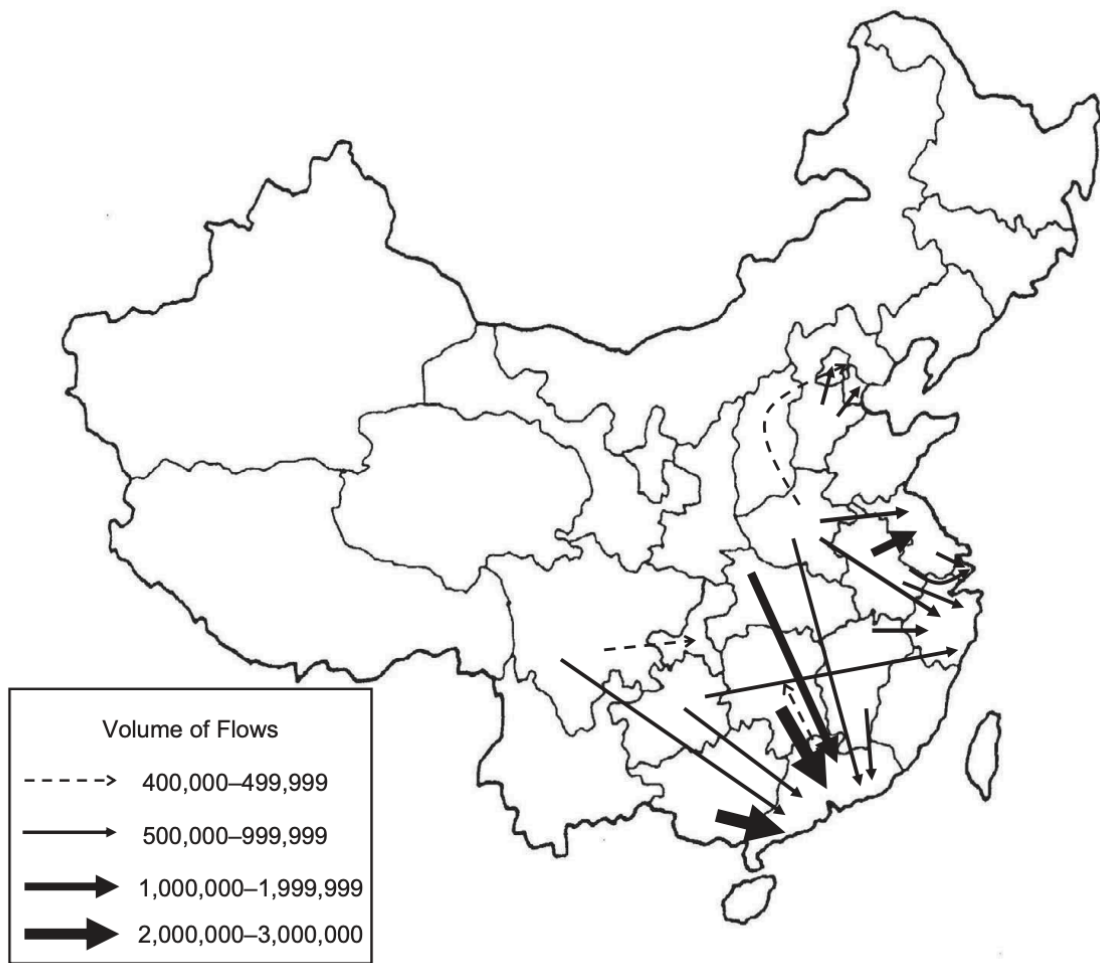


Figure 1.3: The 20 Largest Interprovincial Migration Flows, 2010–2015

Source: Figure by Chan and Yang (2020).

### 1.2.3 Specifications

As a first step, we test whether the hukou status affects perceived discrimination. To this purpose, a cross-sectional specification for individual  $i$  is constructed as follows:

$$(1) \quad Y_i = \alpha_0 + \beta_1 \times Hukou_i \times Residence_i \times Migrant\ status_i + \sum_k Z_{ik} \beta_k + Region_j + \epsilon_i$$

We use a Probit model to estimate the likelihood of one reporting perceived discrimination.  $Y_i$  is a binary indicator for perceived discrimination, which takes 1 when the individual reports perceived discrimination and 0 otherwise. The interaction term  $Hukou_i \times Residence_i$  characterizes the four hukou-residence combinations (RIU, UIR, RIR and UIU).  $Migrant\ status_i$  indicates whether individual  $i$  lives outside the prefecture which they register as hukou origin.

Altogether, the triple interaction term  $Hukou_i \times Residence_i \times Migrant\ status_i$  classes individuals into eight groups indicating their hukou status, migration status and where they live <sup>8</sup>.  $Z_{ik}$  is a set of  $k$  controls for individual characteristics such as age, gender, annual family net income per capita (in log), education, occupation and a minority dummy (please see Table 1.12 in Appendix for a full description of the variables and Table 1.5 below).<sup>9</sup> Considering the development disparities among regions in China, we include  $Region_j$ , a categorical variable of four regions to control regional characteristics: the Northeast, the Grand-East, the Centre and the Grand-West.<sup>10</sup>

Table 1.5: Descriptive Statistics Part 3

		2010	2014	2016
Gender	1 - Male	56.01%	51.42%	51.32%
Minority	1 - Ethnic minorities	8.88%	7.93%	8.13%
Age				
	Mean	43.94	48.63	50.10
	Std. Dev.	11.88	12.60	12.99
	Min	17	21	23
	Max	86	115	117
Income				
	Mean	10109.18	12677.38	14052.28
	Std. Dev.	19454.64	19168.54	22312.85
	Min	5.00	0.25	0.45
	Max	1000000.00	980000.00	1483971.86
N		9904	13498	14493

Secondly, if the hukou status is a significant driver of perceived discrimination, we would like to investigate whether individuals feel less discriminated against when they change their hukou status. In order to further explore that possibility, we undertake the following panel estimation over the 2010, 2014 and 2016 waves. Additionally, as we are working with a perception, unobserved individual characteristics may cause endogeneity issues. To tackle this, we estimate a fixed effect model, assuming that these unobserved individual characteristics do not vary overtime.

<sup>8</sup>We take the category UIU locals (Urban hukou locals in urban areas) as the reference group.

<sup>9</sup>The level of education is determined by the highest educational degree obtained in the survey year. The type of occupation is built following the instructions of *CFPS Technique Report - 8*. The distribution is shown in Table 1.13 in appendix. The minority indicator takes the value 1 if the respondent does not belong to the Han group (please see Table 1.5)

<sup>10</sup>Such categorisation is widely used by the National Bureau of Statistics of China and is prevalent in economic sampling.

$$(2) \quad Y_{it} = \alpha_0 + \beta_{1t} \times Inconsistency_{it} \times Migrant_{it} + \sum_k Z_{ikt} \beta_{ikt} + \mu_i + \delta_t + \epsilon_{it}$$

$Y_{it}$  is a binary variable for the perceived discrimination of individual  $i$  at time  $t$ . Since we assume, following the literature, that stigma does not derive necessarily from hukou status itself but from the inadequacy between hukou status and type of residence, we create a variable that is equal to 1 whenever the individual  $i$ 's hukou status is not consistent with their type of residence. This variable is labelled  $Inconsistency_{it}$  and would take for instance the value 1 whenever individual  $i$  holds a rural hukou and lives in an urban area at time  $t$  or, conversely, when they hold an urban hukou and live in a rural area. Again,  $Migrant\ status_{it}$  indicates whether one's current domicile corresponds to their hukou origin.  $Z_{ikt}$  is the set of  $k$  individual characteristics.  $\mu_i$  and  $\delta_t$  are fixed effects for the individual  $i$  and the year  $t$ .  $\epsilon_{it}$  is the error term.

In order to assess a potential heterogeneous effect, we further break down  $Inconsistency_{it}$  into indicators for the rural hukou holders in urban areas (RIU) and urban hukou holders in rural areas (UIR) as is shown in equation (3).

$$(3) \quad Y_{it} = \alpha_0 + \beta_{1t} \times Hukou_{it} \times Residence_{it} \times Migrant_{it} + \sum_k Z_{ikt} \beta_{ikt} + \mu_i + \delta_t + \epsilon_{it}$$

While panel estimation is useful to understand a potential correlation between change in status and change in perceived discrimination, we would like to further identify a potential causal impact of the reform on perceived discrimination. To that aim, and keeping in mind that the reform was only implemented in prefectures of less than one million urban inhabitants, we proceed with two triple difference-in-difference estimations for individuals in urban areas, investigating the impact of the reform between different hukou holders and migration status holders:

$$(4) \quad Y_{it} = \alpha_0 + \beta_1 \times Treatment + \beta_2 \times RIU + \beta_3 \times Period + \beta_4 \times Treatment \times Period + \beta_5 \times RIU \times Treatment + \beta_6 \times Period \times RIU + \beta_7 \times Period \times RIU \times Treatment + \epsilon_{it}$$

$$(5) \quad Y_{it} = \alpha_0 + \beta_1 \times Treatment + \beta_2 \times Migrant + \beta_3 \times Period + \beta_4 \times Treatment \times Period + \beta_5 \times Migrant \times Treatment + \beta_6 \times Period \times Migrant + \beta_7 \times Period \times Migrant \times Treatment + \epsilon_{it}$$

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*Treatment* refers to the reformed areas (i.e. prefectures of less than one million inhabitants). *Period* is a dummy variable equal to 1 after the implementation of the reform (i.e. after 2014, see below). *RIU* and *Migrant* are a dummy variables representing the groups of interest. *Period* represents the pre or the post reform time. *Treatment* defines the treated and the control areas. By controlling the type of residence (urban areas), Equation 4 compares RIU locals (migrants) to the UIU locals (migrants) while Equation 5 compares RIU migrants (UIU migrants) to RIU locals (UIU locals). Here we assign 0 to UIU locals (migrants) and 1 to RIU locals (migrants). In other words, we compare the change in the average tendency of the perception between the matching RIU and UIU groups (or between matching migrants and locals groups) in the treatment areas to the control areas before and after the treatment. The triple interaction term is at our interest as it would reveal the impact of the reform on the perceived discrimination of the RIU (or the migrants) group in the treatment areas.

One question remains concerning the year 2014, as the reform was implemented right in the middle of that year. Our take is to consider the full year of 2014 as post-treatment for three major reasons (a) the vast majority of the interviews conducted in 2014 were done after the reform was implemented; (b) the occurrence of such a reform has been announced months before it was put into effect. Therefore, the reform was easy to anticipate by early 2014; and (c) local governments had already been asked before the reform was in full swing to relax the conditions for migrant workers.<sup>11</sup> Thus, we consider 2010 as pre-reform while 2014 and 2016 as post-reform period. We also provide a sensitivity analysis by omitting the year 2014 and comparing only the 2010 wave to the 2016 one. Figure 1.4 shows the plot of the average likelihood for individuals to report perceived discrimination in the reformed and non-reformed areas year by year. The blue line depicts the situation in the reformed areas while the orange line is for the non-reformed areas. One can see that the pre-reform parallel trend in the treated and control regions holds and it breaks between 2012 and 2014. In other words, this graph also supports our above strategy to take 2014 as a post-reform period.

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<sup>11</sup>Source (in Chinese):<http://theory.people.com.cn/n/2013/1018/c40531-23248799-4.html>



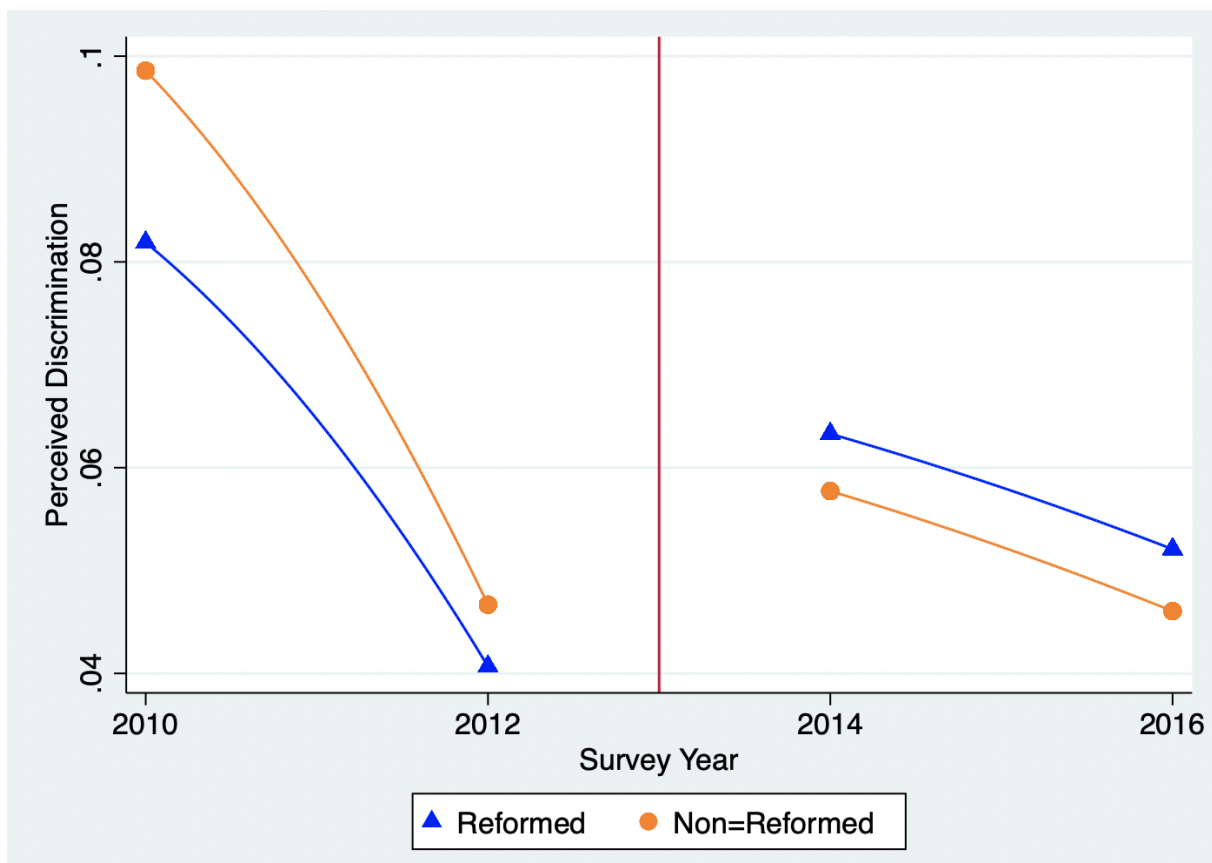


Figure 1.4: Parallel Trend Test for DDD Estimation

*Note:* Here we include 2012 data for the purpose of the parallel trend test. This graph supports the assumption that the 2014 reform is anticipated as a change in the trend around the reform is spotted.

## 1.3 Empirical Results

### 1.3.1 Cross-sectional Estimation

Table 1.6 presents the average marginal effects of cross-sectional analysis for the survey years respectively. Individuals are divided into eight groups by the triple interaction of the three dimensions of the hukou identity: hukou status x type of residence x migration status (i.e. RIU migrants/ locals, RIR migrants/ locals, UIR migrants/ locals and UIU migrants/ locals). The reference group is those local urban hukou holders who live in urban areas (i.e. UIU locals). Compared to the benchmark, rural hukou migrants in urban areas have a greater chance to report perceived discrimination which is in line with the literature. Moreover, other types of internal migrants such as rural-in-rural and urban-in-urban migrants share a similar trend. This holds true for urban to rural migrants in the 2016 phase as well. Apart from that, in the phase of 2014 and 2016, urban hukou locals have a higher probability to report

perceived discrimination, which is contradictory to the literature since the local urban hukou is deemed as the most privileged hukou identity. One possible interpretation may be that one is more likely to feel discriminated against if their hukou status is not correspondent to the type of residence. That is to say, rural hukou holders living in urban areas and urban hukou holders living in rural areas are more likely to report perceived discrimination regardless of their migration status. To further exam this point, we includes a consistent variable in the panel estimation.

Table 1.6: Average Marginal Effects of the Baseline Probit Estimation

	2010	2014	2016
	b/se	b/se	b/se
RIU locals	0.0233 (0.012)**	0.0165 (0.008)**	0.0261 (0.008)***
RIR locals	0.0094 (0.011)	0.0062 (0.008)	0.0108 (0.008)
RIU migrants	0.1554 (0.015)***	0.1186 (0.014)***	0.1058 (0.015)***
RIR migrants	0.0878 (0.025)***	0.1016 (0.020)***	0.0676 (0.025)***
UIR locals	0.0265 (0.020)	0.0347 (0.013)***	0.0397 (0.012)***
UIR migrants	0.0917 (0.053)*	0.0425 (0.041)	0.0718 (0.035)**
UIU migrants	0.0908 (0.017)***	0.0517 (0.018)***	0.0851 (0.016)***
Age	Yes	Yes	Yes
Income	Yes	Yes	Yes
Gender	Yes	Yes	Yes
Minority	Yes	Yes	Yes
Education	Yes	Yes	Yes
Occupation	Yes	Yes	Yes
District	Yes	Yes	Yes
N	9901	13470	14438

*Note:* The dependent variable is a dummy for perceived discrimination. The reference group is UIU locals - urban locals in urban areas. The identifier of each group are binary and composed by hukou status  $\times$  migration status  $\times$  type of residence. Robust standard errors are in parenthesis. Significance levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

### 1.3.2 Panel Estimation

The consistency variable takes the value 1 if one's hukou status is correspondent to their type of residence. Both rural-in-rural and urban-in-urban hukou holders (i.e. group RIR and UIU) are considered to have a consistent hukou status. Hence consistent migrants refer to rural-in-rural and urban-in-urban migrants; inconsistent migrants are rural-in-urban and urban-in-rural migrants. Same rules are applied to inconsistent locals which are rural-in-urban and urban-in-rural locals. Table 1.7 presents the results from the panel estimation <sup>12</sup>.

The reference group in the first column is the consistent locals. By comparing the inconsistent locals to the reference group, we could see that individuals changing into hukou-residence inconsistent status would significantly increase the chance to report perceived discrimination with other conditions unchanged which confirms our finding in the cross-sectional analysis. In addition, individuals who become internal migrants are more likely to feel discriminated against despite that they maintain the hukou-residence consistency. Therefore, the individuals who not only change their status into a hukou-residence inconsistent status but also migrate turn out the most likely to declare the perceived discrimination. Then we break down the consistency indicator to analyse the outcome of the change among hukou status as is shown in Column 2. The reference group in the second column is urban-in-urban locals (UIU locals). It shows that local people are more likely to feel hukou-related discrimination when they change into a rural-in-urban status (RIU). This could be seen as the stigma attached to the rural hukou status because a changing into an urban-in-rural status (UIR locals) does not increase one's chance to report perceived discrimination. However, such stigma only reveals its negativity in an environment inconsistent with the individual's hukou status - where they may be "othered" due to a different hukou status. To this note, we observe that one has a lower probability to feel hukou-related discrimination when they change into a rural-in-rural status (RIR) no matter they migrate or not. Similarly, the migration to cities tend to increase one's chance of feeling hukou-related discrimination in spite of the hukou status as is suggested by comparing UIU migrants to UIU locals. Furthermore, changing into an UIR migrant does increase one's

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<sup>12</sup>Since our dependent variable is discrete and the data is of large N small T, we use the nonlinear panel data estimation methods by [Fernández-Val and Weidner \(2016\)](#) and apply a jackknife correction to fix the incidental parameter problem.

Table 1.7: Average Marginal Effects of the Panel Estimation

	Eq.(1) b/se	Eq.(2) b/se
Inconsistent migrants	0.0763 (0.022) <sup>***</sup>	
Inconsistent locals	0.0444 (0.003) <sup>***</sup>	
Consistent migrants	0.0327 (0.006) <sup>***</sup>	
RIU locals		0.0297 (0.006) <sup>***</sup>
RIU migrants		0.0667 (0.018) <sup>***</sup>
RIR locals		-0.0326 (0.007) <sup>***</sup>
RIR migrants		-0.0304 (0.011) <sup>***</sup>
UIR locals		0.0116 (0.010)
UIR migrants		0.0514 (0.023) <sup>**</sup>
UIU migrants		0.0509 (0.009) <sup>***</sup>
Income	0.0030 (0.014)	0.0029 (0.014)
N	8742	8742

*Note:* The dependent variable is a dummy variable for perceived discrimination. Group identifiers are binary variables. Income is the logarithm form of the net annual family income per capita. Reference groups are consistent locals and UIU locals respectively. Standard errors are presented in parenthesis. Significance levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

probability of feeling discrimination than changing into an UIR local person, making another proof for the negative stigma attached to the migration status. Hence RIU migrants are the most likely to declare hukou-related perceived discrimination as they are bonded with stigmas from both the hukou status and the migration status.

It is worth noticing that there is a significant drop of observations during the panel analysis. As is shown in Table 1.8, we notice that a great amount of observations did not change in either status or attitudes temporally. Table 1.9 further presents the details of the change in hukou identity between 2010 and 2016. One may notice that a larger share of individuals with hukou-residency inconsistent hukou change their hukou status over the period. In addition, a

Table 1.8: Fraction of People Changing Hukou Status or Attitudes

	Proportion
Only change in hukou status	2.21%
Only change in attitudes	7.11%
Change in both dimensions	0.42%
No change	50.48%
Cannot tell*	39.77%

\* Individuals only show up in one wave.

significant proportion of migrants have changed their migration status.

Prior to the reform, hukou conversion was possible yet extremely difficult as it was based on stringent criteria. The 2014 reform made the conversion more feasible by easing these criteria. Given that the results from the panel suggest that changing in hukou status and/or type of residence has a significant effect on perceived discrimination, we would expect the 2014 reform allowing free status conversion to significantly affect one's feeling of being discriminated against. However, over the period covering the implementation of the reform, that is between 2010 and 2016, only 3% of the panel sample actually converted their hukou status. This suggests that perhaps individuals felt discriminated against either because of the stereotypes attached to the hukou status, or because of the attributes that are correlated with the status but not the status itself and thus feeling little compelled to change it even when this was made possible. To further investigate this issue, we assess the direct effect of the reform on perceived discrimination resorting to a DDD estimation.

Table 1.9: Details of People Changing Hukou Identity Between 2010 and 2016

Hukou ID in 2010		Hukou ID in 2016		Hukou Status Change	Migration Status Change
UIU locals	484	UIU locals	392	3.10%	3.10%
		RIU locals	13		
		RIU migrants	2		
		UIU migrants	13		
		Missing	64		
UIR locals	86	UIU locals	9	11.63%	3.49%
		RIU locals	1		

Table 1.9 continued from previous page

Hukou ID in 2010	Hukou ID in 2016	Hukou Status	Hukou Status Change	Migration Status	Migration Status Change
	RIR locals	9			
	UIR locals	56			
	UIR migrants	2			
	UIU migrants	1			
	Missing	8			
RIU locals	551	UIU locals	44	8.71%	2.36%
		UIR locals	2		
		RIU locals	445		
		RIR locals	20		
		RIU migrants	11		
		UIU migrants	2		
		Missing	27		
RIR locals	1403	UIU locals	4	2.92%	1.28%
		UIR locals	37		
		RIU locals	131		
		RIR locals	1178		
		RIU migrants	4		
		RIR migrants	13		
		UIR migrants	1		
		Missing	35		
RIU migrants	114	UIU locals	17	21.05%	33.33%
		RIU locals	21		
		RIU migrants	51		
		UIU migrants	7		
		Missing	18		
RIR migrants	51	UIR locals	2	5.88%	70.59%

Table 1.9 continued from previous page

Hukou ID in 2010	Hukou ID in 2016	Hukou Status Change	Migration Status Change		
	RIU locals	3			
	RIR locals	31			
	RIU migrants	2			
	RIR migrants	9			
	UIR migrants	1			
	Missing	5			
UIR migrants	21	UIR locals	12	14.29%	61.90%
		RIR locals	1		
		RIR migrants	2		
		UIR migrants	6		
		Missing	0		
UIU migrants	74	UIU locals	31	5.41%	44.59%
		RIU locals	2		
		RIU migrants	2		
		UIU migrants	26		
		Missing	13		
Total	2784				

*Note:* Percentage indicates the share of individuals that change their hukou status or migration status since 2010.

### 1.3.3 Triple Difference Estimation

We may think that the reform would reduce hukou-related perceived discrimination because it is meant to facilitate hukou registration in the treatment areas. In other words, to detach a stigmatised identity like a rural hukou or a migrant status should be more feasible. This should be of great interest to the RIU group (both locals and migrants) and the UIU migrants. Hence in this section we compare the RIU group with respect to their UIU references as well as migrant groups to the locals (RIU migrants to RIU locals and UIU migrants to UIU locals). We expect

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that both RIU migrants and UIU migrants would be able to register as local residents in the treatment areas after the reform while both rural hukou locals and migrants would no longer be seen different from urban hukou locals and migrants. Table 1.10 and Table 1.11 presents the results of the DDD estimations between RIU and UIU groups and between migrants and locals.

The first columns of the both tables evaluate the long term impact of the reform, taking 2010 as the pre-treatment year and 2016 the post-treatment whilst the second columns are to evaluate the short-term impact considering both 2014 and 2016 as the post-treatment period. Though the reform was officially launched in mid-2014, local authorities would have anticipated it since experimental practices have been applied in certain areas already. Panel A of Table 1.10 compares the RIU locals to UIU locals and Panel B compares RIU migrants to UIU migrants. From Panel A, we find that even though over the time both RIU and UIU locals tend not to report perceived discrimination, the probability that the RIU locals to report perceived discrimination actually increases. Furthermore, the gap between the chance that RIU locals reporting perceived discrimination and that of UIU locals in the treatment areas is smaller than that in the control areas as is indicated by the triple interaction term. Although the coefficients are not statistically significant, the signs may suggest a convergence in terms of feeling discrimination due to hukou status in the treatment areas between RIU locals and UIU locals. When we focus on internal migrants as shown in Panel B, we notice that RIU migrants are more likely to report perceived discrimination than UIU migrants and in the short run such difference slightly enlarges. Despite the fact that migrants in the treatment areas are less likely to declare perceived discrimination and the overall probability that migrants report perceived discrimination decreases across the time, the chance for migrants in the treatment areas to report perceived discrimination increases over the years. Since the chance for RIU migrants to report perceived discrimination in the treatment areas after the reform indeed decreases in both short run and long run (significant at 1% and 11% respectively), this may indicate an actual increase in the chance that UIU migrants in the treatment areas to declare perceived discrimination after the reform. Results in Table 1.11 are consistent with this finding.

Table 1.11 focuses on the comparisons between migrants and locals with respect to the



Table 1.10: DDD Estimation Between RIU and UIU Groups

	2010 vs 2016 b/se	2010 vs 2014-2016 b/se
<i>Panel A: RIU VS UIU locals</i>		
Treatment	-0.0111 (0.009)	-0.0106 (0.008)
Period	-0.0689 (0.009)***	-0.0560 (0.007)***
RIU locals	0.0052 (0.008)	0.0050 (0.008)
Period x Treatment	0.0159 (0.014)	0.0107 (0.011)
Period x RIU locals	0.0365 (0.013)***	0.0348 (0.010)***
Treatment x RIU locals	0.0197 (0.013)	0.0188 (0.012)
Period x Treatment x RIU locals	-0.0210 (0.020)	-0.0209 (0.016)
N	10404	15675
<i>Panel B: RIU VS UIU migrants</i>		
Treatment	-0.1673 (0.068)**	-0.1635 (0.066)**
Period	-0.1023 (0.042)**	-0.1106 (0.035)***
RIU migrants	0.1263 (0.036)***	0.1234 (0.035)***
Period x Treatment	0.1953 (0.115)*	0.2548 (0.091)***
Period x RIU migrants	0.0401 (0.059)	0.0839 (0.048)*
Treatment x RIU migrants	0.1122 (0.081)	0.1097 (0.079)
Period x Treatment x RIU migrants	-0.2228 (0.139)	-0.3024 (0.110)***
N	829	1174

*Note:* The dependent variable is a dummy variable for perceived discrimination. Group identifiers are binary variables: RIU locals indicates those rural hukou locals who live in urban areas whereas RIU migrants are rural hukou migrants living in the urban areas. The benchmark groups are UIU locals and migrants, urban hukou locals or migrants respectively. Robust standard errors are in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\* $p \leq 0.05$ , \*\*\* $p \leq 0.01$ .

UIU and RIU hukou holders. In Panel A, the results present that as UIU hukou holders, migrants are more likely to declare perceived discrimination than locals. Such difference does not vary significantly between the treatment areas and the control areas. In the short run, we observed that UIU migrants in the treatment areas are in general less likely to report perceived

Table 1.11: DDD Estimation Between Urban Migrants and Locals

	2010 vs 2016 b/se	2010 vs 2014-2016 b/se
<i>Panel A: UIU migrants VS UIU locals</i>		
Treatment	-0.0100 (0.008)	-0.0092 (0.007)
Period	-0.0620 (0.008)***	-0.0489 (0.006)***
UIU migrants	0.0373 (0.014)***	0.0346 (0.013)***
Treatment x UIU migrants	-0.0709 (0.034)**	-0.0656 (0.031)**
Period x Treatment	0.0143 (0.013)	0.0094 (0.010)
Period x UIU migrants	0.0126 (0.022)	-0.0017 (0.017)
Period x Treatment x UIU migrants	0.0800 (0.057)	0.1073 (0.043)**
N	6515	9872
<i>Panel B: RIU migrants VS RIU locals</i>		
Treatment	0.0112 (0.012)	0.0110 (0.012)
Period	-0.0417 (0.012)***	-0.0282 (0.010)***
RIU migrants	0.1341 (0.019)***	0.1322 (0.019)***
Treatment x RIU migrants	-0.0492 (0.032)	-0.0486 (0.032)
Period x Treatment	-0.0066 (0.018)	-0.0136 (0.015)
Period x RIU migrants	-0.0013 (0.032)	0.0096 (0.025)
Period x Treatment x RIU migrants	-0.0124 (0.057)	-0.0197 (0.045)
N	4718	6977

*Note:* The dependent variable is a dummy variable for perceived discrimination. UIU and RIU are binary variables indicating individuals who hold an urban (or a rural) hukou and live in the urban. The benchmark groups are UIU and RIU locals respectively. Robust standard errors are in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\* $p \leq 0.05$ , \*\*\* $p \leq 0.01$ .

discrimination than those in the control areas. Yet this is not the case in the long run. In fact, in the short run the reform slightly increases the chance for UIU migrants to report perceived discrimination. Therefore looking back at Panel B of Table 1.10, the short run effect can hardly be interpreted as a proof of a successful reverse in stigma for underprivileged hukou holders. Rather, this converging phenomenon could come from the upwarding tendency in declaring

perceived discrimination among urban hukou migrants. The reform may raise one's awareness of their hukou identity and signal the related social knowledge about it. Individuals with an underprivileged hukou identity may be more conscious about their stigmatised disadvantages and therefore a divergence in perceptions appears. Panel B of Table 1.11 shows that the reform has no impact on RIU migrants compared to RIU locals, which is also consistent to previous results. In any case the reform fails to reverse the stigmas attached to hukou-related identities.

In order to test the robustness of the results, we also include individuals answering "No but heard about it (self-reported unfair treatment due to hukou registration)". This answer is interpreted as an indirect way to share one's perception towards hukou-related unfair treatments, which concerns 1319 individuals in 2014 wave accounting for 15.04% of the interviewed in that phase which may introduce noise for the 2014 phase in particular. Appendix Table 1.14 and Table 1.15 present the cross-sectional analysis and panel estimation including these individuals. Table 1.14 shows that RIU migrants remain the group that is more likely to report hukou-related unfair treatment. Over the time, the effect of changing one's hukou identity into a RIU migrant significant increases the chance that one declares hukou-related perceived discrimination as indicated in Table 1.15. The DDD estimation brings an identical outcome as is shown in Section 1.3.3 (full results are presented in Appendix Table 1.16- 1.17 Hence, our main results remain robust.

## 1.4 Conclusion

This paper aims to investigate the relationship between hukou identity and perceived discrimination. We firstly test how hukou status affects perceived discrimination and find that individuals who do not hold a hukou status consistent with their type of residence are more likely to declare perceived discrimination no matter what their initial hukou status are or where they live. In other words, people of rural hukou living in the urban areas and people of urban hukou living in the rural areas have greater chance to report hukou-related discrimination. Our panel estimations confirm that perceived discrimination is more likely to be reported when individuals' hukou status become inconsistent with their type of residence. In partic-

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ular, we find that individuals getting a rural hukou status in urban areas or an urban hukou status in rural areas are more likely to declare hukou-based discrimination. In this sense, the hukou reform may be effective in reducing perceived discrimination as it facilitates the process for eligible individuals to change their hukou status. However, our triple difference estimation shows that the previous assumption only works on migrants: in the post-reform period, the rural-in-urban locals have higher chance to report discrimination, indicating a divergence in perceived discrimination between the rural-in-urban and urban-in-urban locals over time; whereas the rural-in-urban migrants do become less likely to declare perceived discrimination after the reform compared to urban-in-urban migrants, which may come from the increasing chance for urban-in-urban migrants to report discrimination after the reform.

Moreover, from either the cross-sectional or the panel estimations, we see that changing one's residence (either moving back to hukou origin or moving into a place that is consistent with one's hukou status) leads to a large decrease in the chance of reporting perceived discrimination. This explains why that we only observe significant impacts of the reform on migrants.

The hukou reform that intends to facilitate hukou conversion may be not as effective as expected for several reasons. First, the actual hukou conversion criteria may remain stringent and not instant even after the reform due to requests for eligible individuals to have a legal and stable job, a legal and stable domicile and some municipalities even asking for certain years of participation in social security. This may explain why only a small portion of individuals (less than 3%) convert their hukou status over the years. Second, hukou identity in China may depend less on hukou status *per se*, but rather on the interrelations between hukou origin and type of residence. The locality where individuals have access to resources and public services matters more than the binary division of hukou status in mediating individuals' subjective well-being (Han, 2015; Bonnefond and Mabrouk, 2019). Further research could be done to investigate how the treatment areas would retain or regain attraction so that more people would be willing to register their permanent domicile in these areas. Last but not least, hukou origin is more than an officially documented location but also about one's feeling of being 'local' or 'non-local' which is easily distinguished by dialect spoken, by accent or by

customs. This makes hukou identity subtler and signifies its intertwined relationships with other cultural factors. In this sense, a single policy or reform may not suffice to reverse the perceptions attached to the hukou identity, long-term efforts must be devoted.

# APPENDIX

Table 1.12: Description of Key Variables and Notions

Variable	Description	Source
Age	The survey year - the birth year + 1	CFPS
Gender	Substituted missing values only if the gender indicator takes the same value as in the previous and post phase.	CFPS
Minority	Designated the Han group to 0 and other ethnic groups to 1	CFPS
Income	Logarithm term of the net annual family income per capita, i.e. dividing the number of economically dependent family members	CFPS
Education	Highest educational degree obtained in the survey year	CFPS
Occupation	(1) Broke down the occupation code according to <i>CFPS Technique Report - 8</i> (2) Designated the position and industry with respect to <i>GB/T 6565-2009</i>	CFPS
Regions	Compiled 31 provinces/ autonomous regions/ municipalities into four regions, which is widely applied by the National Bureau of Statistics of China	CFPS / NBSC*
Perceived discrimination	Individuals' answers to the question: Did you experience unfair treatment due to hukou status in the past year?	CFPS
Rural hukou	Binary variable: 1 - rural hukou, 0 - urban hukou	CFPS
Hukou origin	The place where one registers as documented permanent domicile	CFPS
Rural resident	Binary variable: 1 - living in the rural area, 0 - living in the urban area	CFPS
Migrant status	Binary variable: 1 - living outside the hukou origin, 0 otherwise	CFPS
Inconsistency	Binary variable: 1 - if one's hukou status is not the same as their current residence, e.g. rural hukou holders living in urban areas	CFPS
Treatment	Binary variable for the reformed areas, which are prefectures with less than one million <i>de facto</i> dwellers	CFPS / NUPCL 2013**

\* Source: <http://www.stats.gov.cn/tjsj/nds/j/2019/html/note.htm> (in Chinese) \*\* Short for *National Urban Population and Construction Land by City 2013*.

Table 1.13: Descriptive Statistics

	2010		2012		2014		2016	
	N	Proportion	N	Proportion	N	Proportion	N	Proportion
<b>Age</b>								
[16, 25]	643	6.49%	301	3.28%	454	3.36%	381	2.63%
[26, 35]	1829	18.47%	1284	13.97%	1772	13.12%	1858	12.82%
[36, 45]	3065	30.95%	2519	27.42%	3138	23.24%	2846	19.63%
[46, 55]	2541	25.66%	2644	28.78%	4043	29.95%	4657	32.13%
[56, 65]	1467	14.81%	1866	20.31%	2824	20.92%	2930	20.21%
[66, 75]	318	3.21%	533	5.80%	1130	8.37%	1558	10.75%
[76, 85]	41	0.41%	41	0.45%	134	0.99%	255	1.76%
[86, 95]	0	0.00%	0	0.00%	5	0.04%	10	0.07%
[96, 105]	0	0.00%	0	0.00%	0	0.00%	0	0.00%
[106, -)	0	0.00%	0	0.00%	1	0.01%	1	0.01%
<b>Gender</b>								
0 - Female	4357	43.99%	4221	45.94%	6559	48.58%	7057	48.68%
1 - Male	5547	56.01%	4967	54.06%	6942	51.42%	7439	51.32%
<b>Minority</b>								
0 - No	9025	91.12%	8439	91.85%	12431	92.07%	13318	91.87%
1 - Yes	879	8.88%	749	8.15%	1070	7.93%	1178	8.13%
<b>Income</b>								
Min	5.00		0.20		0.25		0.45	
Max	1000000.00		612700.00		980000.00		1483970.86	
Mean	10109.00		10945.27		12683.39		14053.56	
P25	3000.00		2918.00		4178.75		4266.67	
P50	6000.00		7108.33		9200.00		9523.33	
P75	11500.00		14000.00		16025.00		17500.00	
Skewness	19.70		12.81		23.56		26.02	
Kurtosis	767.77		345.49		989.98		1446.93	
N	9904		9188		13501		14496	

To Be Continued



Continuation of Table 1.13

	2010		2012		2014		2016	
	N	Proportion	N	Proportion	N	Proportion	N	Proportion
<b>Education</b>								
1 - Illiterate/ Semi-literate	2304	23.26%	2410	26.23%	3927	29.09%	3735	25.77%
2 - Primary school	2161	21.82%	2154	23.44%	3169	23.47%	3343	23.06%
3 - Junior high school	2909	29.37%	2720	29.60%	3651	27.04%	4307	29.71%
4 - Senior high school/ technical school/vocational senior school	1443	14.57%	1166	12.69%	1722	12.75%	1854	12.79%
5 - 3-year college	649	6.55%	453	4.93%	629	4.66%	744	5.13%
6 - 4-year college	404	4.08%	265	2.88%	373	2.76%	482	3.33%
7 - Master's degree	32	0.32%	19	0.21%	29	0.21%	31	0.21%
8 - Doctoral degree	2	0.02%	1	0.01%	1	0.01%	0	0.00%
<b>Occupation</b>								
100 - Central Gov or CPC members	0	0.00%	0	0.00%	0	0.00%	0	0.00%
101 - Provincial gov or CP	15	0.15%	1	0.01%	3	0.02%	13	0.09%
102 - Gov	35	0.35%	17	0.19%	8	0.06%	12	0.08%
103 - Social entities/ Other political groups	44	0.44%	25	0.27%	59	0.44%	80	0.55%
104 - Public institutions	32	0.32%	12	0.13%	15	0.11%	12	0.08%
105 - Enterprising	286	2.89%	145	1.58%	537	3.98%	797	5.50%
2 - Professionals & Technicals	711	7.18%	483	5.26%	657	4.87%	788	5.44%
3 - Office workers and related staff	564	5.69%	424	4.61%	677	5.01%	650	4.48%
4 - Service staff	1309	13.22%	1252	13.63%	1784	13.21%	1777	12.26%
5 - Agriculture/ Forestry/ Animal husbandry/ Fishery workers	4835	48.82%	5070	55.18%	7026	52.04%	7295	50.32%
6 - Production workers/ Transport equipment operators/ Other laborers	1801	18.18%	1752	19.07%	2542	18.83%	2391	16.49%
7 - Soldiers	1	0.01%	0	0.00%	1	0.01%	0	0.00%
8 - Unemployed	23	0.23%	1	0.01%	64	0.47%	64	0.44%
9 - Others	248	2.50%	6	0.07%	128	0.95%	617	4.26%
N	9904		9188		13501		14496	
To Be Continued								

Continuation of Table 1.13

Region	2010		2012		2014		2016	
	N	Proportion	N	Proportion	N	Proportion	N	Proportion
0 - the Northeast	1510	15.25%	1275	13.88%	2066	15.30%	2022	13.95%
1 - the Centre	2298	23.20%	2193	23.87%	3418	25.32%	3675	25.35%
2 - the Grand-West	3083	31.13%	2765	30.09%	3875	28.70%	4383	30.24%
3 - the Grand-East	3013	30.42%	2955	32.16%	4139	30.66%	4413	30.44%
Perceived Discrimination								
0 - No	8821	89.07%	8722	94.93%	12591	93.26%	13572	93.63%
1 - Yes	1083	10.93%	466	5.07%	910	6.74%	924	6.37%
Hukou status								
0 - Urban	2689	27.15%	2108	22.94%	3149	23.32%	3311	22.84%
1 - Rural	7215	72.85%	7080	77.06%	10352	76.68%	11185	77.16%
Type of residence								
0 - Urban	4433	44.76%	3619	39.39%	5728	42.43%	6095	42.05%
1 - Rural	5471	55.24%	5569	60.61%	7773	57.57%	8401	57.95%
Migration status								
1 - Migrant	754	7.61%	298	3.24%	480	3.56%	467	3.22%
0 - Local	9150	92.39%	8890	96.76%	13021	96.44%	14029	96.78%
Inconsistency								
0 - RIR / UIU	7646	77.20%	7131	77.61%	10030	74.29%	10700	73.81%
1 - RIU / UIR	2258	22.80%	2057	22.39%	3471	25.71%	3796	26.19%
Rural hukou in urban areas	2001	20.20%	1784	19.42%	3025	22.41%	3290	22.70%
Urban hukou in rural areas	257	2.59%	273	2.97%	446	3.30%	506	3.49%
Rural hukou in rural areas	5214	52.65%	5296	57.64%	7327	54.27%	7895	54.46%
Urban hukou in urban areas	2432	24.56%	1835	19.97%	2703	20.02%	2805	19.35%
N	9904		9188		13501		14496	
End of Table								

Table 1.14: Robustness Check for Tab1.6: Average Marginal Effects of Baseline Probit Estimation

	2010	2014	2016
	b/se	b/se	b/se
RIU locals	0.0233 (0.012)**	-0.0105 (0.011)	0.0261 (0.008)***
RIR locals	0.0094 (0.011)	-0.0122 (0.010)	0.0108 (0.008)
RIU migrants	0.1554 (0.015)***	0.1179 (0.022)***	0.1058 (0.015)***
RIR migrants	0.0878 (0.025)***	0.0559 (0.034)	0.0676 (0.025)***
UIR locals	0.0265 (0.020)	0.0256 (0.017)	0.0397 (0.012)***
UIR migrants	0.0917 (0.053)*	-0.0058 (0.060)	0.0718 (0.035)**
UIU migrants	0.0908 (0.017)***	0.0283 (0.025)	0.0851 (0.016)***
Age	Yes	Yes	Yes
Income	Yes	Yes	Yes
Gender	Yes	Yes	Yes
Minority	Yes	Yes	Yes
Education	Yes	Yes	Yes
Occupation	Yes	Yes	Yes
District	Yes	Yes	Yes
N	9901	14812	14438

*Note:* The dependent variable is a dummy for perceived discrimination. The reference group is UIU locals - urban hukou locals in urban areas. The identifiers of each group are composed by hukou status + migration status + type of residence and are binary. Robust standard errors are in parenthesis. Significance levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

Table 1.15: Robustness Check for Tab1.7: Average Marginal Effects of Panel Estimation

	Eq. (1) b/se	Eq. (2) b/se
Inconsistent migrants	0.0913 (0.040)**	
Inconsistent locals	0.0407 (0.009)***	
Consistent migrants	0.0279 (0.008)***	
Income	0.0018 (0.005)	0.0017 (0.005)
RIU locals		0.0332 (0.010)***
RIR locals		-0.0218 (0.009)**
RIU migrants		0.0831 (0.036)**
RIR migrants		-0.0187 (0.014)
UIR locals		0.0318 (0.013)**
UIR migrants		0.6782 (0.056)
UIU migrants		0.0441 (0.010)***
N	13506	13506

*Note:* The dependent variable is a dummy variable for perceived discrimination. Group identifiers are binary variables. Income is the logarithm form of the net annual family income per capita. Reference groups are consistent locals and UIU locals respectively. Standard errors are presented in parenthesis. Significance levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

Table 1.16: Robustness Check for Tab1.8:  
DDD Estimation Between RIU and UIU Groups

	2010 vs 2016 b/se	2010 vs 2014-2016 b/se
<i>Panel A: Between RIU and UIU Locals</i>		
Treatment	-0.0111 (0.009)	-0.0106 (0.008)
Period	-0.0689 (0.009)***	-0.0560 (0.007)***
RIU locals	0.0052 (0.008)	0.0050 (0.008)
Treatment x RIU locals	0.0197 (0.013)	0.0188 (0.012)
Period x Treatment	0.0159 (0.014)	0.0107 (0.011)
Period x RIU locals	0.0365 (0.013)***	0.0348 (0.010)***
Period x Treatment x RIU locals	-0.0210 (0.020)	-0.0209 (0.016)
N	10404	15675
<i>Panel B: Between RIU and UIU Migrants</i>		
Treatment	-0.1673 (0.068)**	-0.1635 (0.066)**
Period	-0.1023 (0.042)**	-0.1106 (0.035)***
RIU migrants	0.1263 (0.036)***	0.1234 (0.035)***
Treatment x RIU migrants	0.1122 (0.081)	0.1097 (0.079)
Period x Treatment	0.1953 (0.115)*	0.2548 (0.091)***
Period x RIU migrants	0.0401 (0.059)	0.0839 (0.048)*
Period x Treatment x RIU migrants	-0.2228 (0.139)	-0.3024 (0.110)***
N	829	1174

*Note:* The dependent variable is a dummy variable for perceived discrimination. Group identifiers are binary variables: RIU locals indicates those rural hukou locals who live in urban areas whereas RIU migrants are rural hukou migrants living in the urban areas. The benchmark groups are UIU locals and migrants, urban hukou locals or migrants respectively. Robust standard errors are in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\* $p \leq 0.05$ , \*\*\* $p \leq 0.01$ .

Table 1.17: Robustness Check for Tab1.10:  
DDD Estimation Between Migrants and Locals

	2010 vs 2016 b/se	2010 vs 2014-2016 b/se
<i>Panel A: Between UIU Migrants and Locals</i>		
Treatment	-0.0100 (0.008)	-0.0092 (0.007)
Period	-0.0620 (0.008)***	-0.0489 (0.006)***
UIU migrants	0.0373 (0.014)***	0.0346 (0.013)***
Treatment x UIU migrants	-0.0709 (0.034)**	-0.0656 (0.031)**
Period x Treatment	0.0143 (0.013)	0.0094 (0.010)
Period x UIU migrants	0.0126 (0.022)	-0.0017 (0.017)
Period x Treatment x UIU migrants	0.0800 (0.057)	0.1073 (0.043)**
N	6515	9872
<i>Panel B: Between RIU Migrants and Locals</i>		
Treatment	0.0112 (0.012)	0.0110 (0.012)
Period	-0.0417 (0.012)***	-0.0282 (0.010)***
RIU migrants	0.1341 (0.019)***	0.1322 (0.019)***
Treatment x RIU migrants	-0.0492 (0.032)	-0.0486 (0.032)
Period x Treatment	-0.0066 (0.018)	-0.0136 (0.015)
Period x RIU migrants	-0.0013 (0.032)	0.0096 (0.025)
Period x Treatment x RIU migrants	-0.0124 (0.057)	-0.0197 (0.045)
N	4718	6977

*Note:* The dependent variable is a dummy variable for perceived discrimination. UIU and RIU are binary variables indicating individuals who hold an urban (or a rural) hukou and live in the urban. The benchmark groups are UIU and RIU locals respectively. Robust standard errors are in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .



# TRUST IN CHINA: THE ROLE OF HUKOU

*Trustworthiness.....comes from consistent, predictable and reliable behaviour over a long period of time, demonstrating honesty, competence and reliability.*

*David Omand, 2020*

## 2.1 Introduction

Trust, as an essential component of social capital, is deemed to be an independent channel that contributes to economic prosperity (Fukuyama, 1996; Fehr, 2009). It not only yields direct economic growth via reducing transaction costs, increasing investments, inducing the development of complex industries and boosting the prosperity of financial market, but also reinforces the foothold of long-run economic prosperity through engaging individuals to fulfil non-pecuniary obligations and enhancing the quality of institutions (Putnam, 1993; Knack and Keefer, 1997; Zak and Knack, 2001; Guiso et al., 2004; Francois and Zabojnik, 2005; Tabellini, 2010; Aghion et al., 2010; D’Adda et al., 2020; De Sousa et al., 2020).

As a result, the discussion about why people trust and the attempt to increase the level of trust stay relevant until nowadays. In the pioneering work *Who Trusts Others?*, Alesina and La Ferrara (2002) have modelled why and how people exhibit trust towards others. They argue that people belonging to a historically discriminated group tend to trust less and in general people are more likely to trust in their own kinds. Hong and Bohnet (2007) show that marginalised groups tend to be averse to vulnerability and risk-taking activities and therefore exhibit less trust. Algan and Cahuc (2010) find a positive and solid correlation between



immigrants' level of trust and the countries of origin. In the study on the slave trade, [Nunn and Wantchekon \(2011\)](#) present an empirical study on how the experience of an ethnic group member affects the level of trust of their descendants. They point out that the mistrust among the Africans nowadays could be traced back to the exploiting history of their ancestors during the slave trade which is mostly sustained by cultural norms, beliefs and value. All these studies above make it clear that the group identity is often a key element impacting one's trust behaviour. These group identities are historically constructed and grounded on profound social norms that are echoed and reinforced by generations. In the Chinese context, whether the hukou identity which was institutionally imposed in 1950s has an impact on trust? This paper intends to investigate whether those individuals holding an underprivileged hukou identity exert less trust towards others; on top of it, what accounts for this difference.

This paper is firstly related to the discussion on fundamental economic primitives like belief and preference. The notion of trust in this paper follows the definition by [Coleman \(1994\)](#) who considers trust as a behavioural preference. Then [Hong and Bohnet \(2007\)](#) add that to trust is to reveal vulnerability and undertake risks which draws a link between trust and risk preference. The generalised social trust employed in this paper is derived from a survey question. Although it is argued that experiments as trust games, exchange games or dictator games generate better measures of trust since trust is interpreted as a behavioural intention, [Fehr \(2009\)](#) proves that a survey question asking details about one's behaviour inclinations could capture those factors that all matter in a trust action: the belief of others' trustworthiness, one's risk preferences and pro-social dispositions, making it a legitimate predictor of experimental trust. [Johnson and Mislin \(2012\)](#) prove that the trust measured in surveys is positively correlated with the one measured by experiments, justifying the usage of survey measured trust.

Secondly, this paper is related to the discussion about the origin and the determinants of trust. From a biological point of view, certain hormones like oxytocin are positively associated with trust behaviour. Studies show that genetic variation and specific brain structures are moderate predeterminants of trust ([Rodrigues et al., 2009](#); [Riedl and Javor, 2012](#)). However, in a trust game between monozygotic and dizygotic twins, [Cesarini et al. \(2008\)](#) suggest that even

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though endowed biological traits yield significant differences in trust behaviour, the largest part of such variation is explained by the influences from the environment. Therefore the origin of trust is more than a debate in bio-science but an open discussion in social sciences too. Trust is believed to be a historical residue (Fisman and Khanna, 1999). Today's trust behaviour can be traced back historically to the rate of literacy and quality of institutions 150 years ago (Putnam, 1993; Tabellini, 2010). Such cultural traits persist as a result of intra-family transmission or repetitive interpersonal interactions (Bisin and Verdier, 2000; Fafchamps, 2006). But this does not mean that trust is invariant. Putnam (1995) shows that the level of generalised social trust in the United States dropped dramatically after WW2 revealing the time-varying aspects of trust. This opens a door to promote the level of trust. Scholars tend to draw a causal relationship between social interaction and trust. Fearon et al. (2009) argue that improving social interaction in a community augments social cohesion which likewise reinforces trust. Hilger et al. (2020) present that different aspects of the social interaction in South India yield various trust gains - the network density would raise the trust in neighbours whereas the network size would increase the trust in kin employees. Furthermore, heterogeneous trust behaviours are detected by caste but the causal relationship of social identity to trust is yet explored.

Thirdly, this paper contributes to the literature about Chinese hukou studies. Most hukou studies mainly focus on the discriminatory situations that the hukou status brings to individuals such as poorer education resources, less healthcare coverage, fewer housing subsidies, limited job opportunities and so on (Liu, 2005; Fu and Ren, 2010; Song, 2014). Studies about hukou identity are thin and mainly focus on revealing the behaviour patterns attached to a specific hukou identity. Afridi et al. (2015) find that in an incentive cognitive task, making hukou status salient would significantly curb rural hukou migrant pupils' performance in solving tasks while this would not make a difference to urban hukou local pupils. Luo et al. (2019) show that the salience of hukou status would impact pupils' feeling of fairness in an ultimatum game so that the disadvantaged hukou holders (rural hukou holders as to urban hukou holders) tend to give out less while expecting more from the urban counterparts. This is interpreted as looking for compensation for the "sense of inferiority". Luo and Wang (2020) use a trust game to show that regardless of hukou status, people tend to exhibit more trust towards local people while

both locals and migrants tend to trust more in their kinds. This paper takes a step further and intends to examine whether there exists a channel through which the differences in economic behaviours resulted from different hukou identities would converge.

This paper starts with a baseline logistic regression to examine the role of hukou identity in determining the generalised social trust and proceeds with interaction terms in search for the heterogeneous effects of education among people with different hukou identities. Later a Cohort Difference-in-Difference (Cohort DiD) and an Instrument Variable (IV) approach are employed to deal with the reversed causality caused by education indicator. The results show that both rural hukou holders and rural residents are less likely to trust compared to urban hukou holders and urban residents. Moreover, the hukou identity appears to account for such difference in trust behaviour after correcting the endogenous bias brought about by education.

This paper is organised as follows: Section 2.2 introduces data and estimation strategy; Section 2.3 discusses the endogeneity issue and Section 2.4 concludes the implications and limitations.

## **2.2 Data and Empirical Strategy**

### **2.2.1 Data**

This paper uses data from the CFPS which was launched in 2010 by the Institute of Social Science Survey of Peking University and carried out every two years since. With a coverage of 25 provinces, it represents 95% population in China. Only 2014 phase has been employed in this paper to avoid the confusion of the hukou identity caused by a 2014 reform. This reform aimed to eliminate the distinction between rural and urban hukou nationwide and facilitate the hukou conversion in eligible municipalities. Since most respondents were interviewed between July 2014 and January 2015 when the reform was freshly announced, we assume that the hukou identities especially the hukou status reported by individuals are real identities rather than perceived ones. The hukou identity that we discuss here includes three dimensions: hukou status, migration status and type of current residence, all of which are binary variables. Hukou status is divided between rural and urban hukou holder, which is mostly

Table 2.1: Descriptive Statistics

	N	Percentage		
Rural Hukou Holder	21743	76.9%		
Migrant	21743	5.0%		
Rural Resident	21743	56.2%		
Female	21743	47.4%		
Minority	21743	8.4%		
Generalised Social Trust	21743	53.0%		
	N	Mean	SD	
Age	21743	45.15	13.98	
Years of Education	21743	7.49	4.68	
Income	21743	10849.98	20800.51	

inherited from parents; migration status is determined by whether one lives in the prefecture that they register as their hukou origin and thus categorising individuals into locals or migrants; and lastly, type of residence signifies whether the individual currently lives in the rural or urban areas according to the statistical division. Table 2.1 presents the basic statistics of the individuals involved where we can see the majority of the participants are reported to be rural hukou holders (76.9%).

We use the question "In general, do you think that most people are trustworthy, or it is better to take greater caution when getting along with other people?" to define the generalised social trust. The respondents would choose between "Most people are trustworthy" or "The greater caution, the better". We therefore code the answer into 1 if the response is "Most people are trustworthy" and 0 otherwise. Table 2.2 presents the difference in the level of the generalised social trust between distinct hukou holders with respect to each dimension of the hukou identity, where we observe that rural hukou holders and rural residents do trust less compared to their urban counterparts whereas no significant difference between migrants and locals.

### 2.2.2 Baseline Analysis

Baseline analysis starts with the exploration of the determinants of the generalised social trust in China and whether any dimension of the hukou identity plays a role. Hence we apply a logistic model to regress the trust indicator on the hukou identity and individual characteristics.

Table 2.2: The Level of Trust Among People with Different Hukou Identities

	Count	Percentage	Trust Mean	Difference (1) - (2)
(1) Rural Hukou	16731	76.9%	52%	-6%
(2) Urban Hukou	5012	23.1%	58%	(0.008)***
(1) Migrant	1096	5.0%	55%	2%
(2) Local	20647	95.0%	53%	(0.015)
(1) Rural Resident	12214	56.2%	51%	-4%
(2) Urban Resident	9529	43.8%	55%	(0.007)***
N	21743			

The equation is as follows:

$$(1) \quad Trust_i = \beta_0 + \sum_n Hukou\ identity_{in} \beta_n + \sum_k X_{ik} \beta_k + Province_j + \epsilon_i$$

On the left-hand side, the generalised social trust for individual  $i$  has been derived from a survey question "whether most people are trustworthy", which goes to 1 if the respondent gives a positive answer and 0 otherwise. On the right-hand side, three dimensions of the hukou identity and a set of  $k$  controls for individual  $i$ 's traits  $X_{ik}$  are included.  $Province_j$  controls the regional fixed effect and  $\epsilon_i$  is the error term.  $\sum_n Hukou\ identity_{in}$  consists of three dummy variables to represent the hukou information for individual  $i$ , namely whether one holds a rural hukou whether one is a considered a migrant and whether one currently resides in the rural area, all take the value 1 if the answer is positive and 0 otherwise. Hence the reference groups are urban hukou holders, locals and urban inhabitants separately.

$\sum_k X_{ik} \beta_k$  include other individual characteristics that may affect the level of trust. These controls are selected according to [Alesina and La Ferrara \(2002\)](#)'s findings, covering both group identifiers (such as gender and ethnicity) and indicators for economical success (the level of education, income level and occupational type). These are common individual-level controls when discussing the determinants of trust in both developing and developed world settings ([Algan and Cahuc, 2010](#); [Nunn and Wantchekon, 2011](#); [Alesina and Giuliano, 2015](#); [Cassar et al., 2017](#)). As is argued by [Glaeser et al. \(2000\)](#), one's social status may indicate their ability to "earn returns from social situations", which may stand for the degree of resilience towards risks and hence determining the level of trust ([Giddens, 1991](#)). From another perspective, people of varying social status tend to have distinct trust behaviours which reflects the rules of in-

Table 2.3: Average Marginal Effects of the Logistic Estimation

	(1)	(2)	(3)
	b/se	b/se	b/se
Rural Hukou	-0.0572 (0.009) <sup>***</sup>	-0.0355 (0.010) <sup>***</sup>	-0.0063 (0.010)
Migrant	0.0254 (0.016)	0.0160 (0.016)	0.0130 (0.016)
Rural Resident	-0.0235 (0.008) <sup>***</sup>	-0.0197 (0.008) <sup>**</sup>	-0.0134 (0.008)
Years of Education			0.0132 (0.001) <sup>***</sup>
Female	No	Yes	Yes
Minority	No	Yes	Yes
Age	No	Yes	Yes
Age <sup>2</sup>	No	Yes	Yes
Income	No	Yes	Yes
Occupation	No	Yes	Yes
Province	Yes	Yes	Yes
N	21743	21741	21741

*Note:* The dependent variable is a binary variable refers to the generalised social trust. Rural hukou/ migrant/ rural resident are dummy variables. Robust standard errors are in parenthesis. Significance levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

group favouritism and out-group discrimination and motivates us to include the social status indicators (Tsutsui and Zizzo, 2014; Suchon and Villeval, 2019). Results in average marginal effects are presented in Table 2.3.

Column 1 is a baseline regression only with hukou identity and province fixed effect whilst Column 2 and Column 3 include controls gradually. Even though there is a drop in the magnitude of the effects in Column 2 compared to Column 1, both columns show that the likelihoods for a rural hukou holder and a rural resident to trust are significantly lower by 3.5 percentage points and 2.0 percentage points respectively compared to an urban hukou holder or an urban resident. Meanwhile such difference is not spotted between migrants and locals. The results turn out in line with the previous proportional test in Table 2.2. However, when the dynamic has changed when the years of education indicator has been included, where we no more observe the effect of the hukou identity on trust as is shown in Column 3. On the contrary, it shows that on average an extra year of education increases the probability for anyone to trust by 1.32 percentage points. Since hukou identities may affect the enrollment and the quality of

the education, this could imply that education functions as a channel where hukou identities play a role on trust and we may expect a heterogeneous effect of education on trust among different groups. We then introduce interaction terms between education and each dimension of the hukou identities in the next section.

### 2.2.3 Interaction Terms

The interaction terms consist of each one of the dimensions of the hukou identity interacting with the education: hukou status x education, migration status x education and type of residence x education. To facilitate interpretations, one interaction term will enter the below equation at a time:

$$(2) \text{Trust}_i = \beta_0 + \beta_1 \times \text{Education}_i + \beta_2 \times \text{Hukou identity}_{in} \times \text{Education}_i + \sum_n \text{Hukou identity}_{in} \beta_n + \sum_k X_{ik} \beta_k + \text{Province}_j + \epsilon_i$$

As in Equation (2), the partial effect of hukou identity on the generalised trust is captured by  $\beta_n$  and  $\beta_2$ , where  $n$  stands for the specific hukou identity in the equation.  $\beta_2$  also captures the potential amplification effect of the education for different groups. Looking at  $\beta_n$  alone, it shows the baseline likelihood for everyone to trust at the mean educational attainment; whereas  $\beta_1$  alone tells us how education could make a difference in the chance of people from the reference group to trust. Results are shown in Table 2.4, where Column 1 presents the baseline analysis without the interaction term while the rest columns include interactions one by one.

From the table, only the education indicator stays significant across three specifications, showing that an extra year of education brings 1.30-1.42 percentage points increase in the chance for everyone to trust. However, none of the interaction terms is significant. Intuitively, people who trust the institutions are more likely to attend schools and hence receiving more education. As the institutional trust and the generalised social trust are highly associated (Sønderskov and Dinesen, 2016), it could be the case that education is endogenous to trust. With a country-level cross-sectional analysis, Papagapitos and Riley (2009) find that the generalised social trust positively contributes to secondary school enrollment. Bjørnskov (2009)

Table 2.4: Logistic Estimation with Interaction Terms

	(1)	(2)	(3)	(4)
	b/se	b/se	b/se	b/se
Years of Education	0.0132 (0.001)***	0.0138 (0.002)***	0.0130 (0.001)***	0.0142 (0.001)***
Rural Hukou	-0.0063 (0.010)	0.0017 (0.023)	-0.0058 (0.010)	-0.0043 (0.011)
Migrant	0.0130 (0.016)	0.0130 (0.016)	-0.0402 (0.042)	0.0125 (0.016)
Rural Resident	-0.0134 (0.008)	-0.0133 (0.008)	-0.0136 (0.008)*	-0.0012 (0.014)
Education × Rural Hukou		-0.0008 (0.002)		
Education × Migrant			0.0052 (0.004)	
Education × Rural Resident				-0.0017 (0.002)
Female	Yes	Yes	Yes	Yes
Minority	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes
Age <sup>2</sup>	Yes	Yes	Yes	Yes
Income	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes
N	21741	21741	21741	21741

*Note:* The dependent variable is a binary variable for the generalised social trust. Rural hukou/ migrant/ rural residents are dummies. Years of education is continuous. Robust standard errors are in parenthesis. Significance: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

also shows that the increase in generalised social trust leads to a rapid growth in schooling. This having been said, a potential reversed causality may arise from trust to education. As we expect the trust has a positive impact on education, the coefficient of the education indicator as in Table 2.4 has an upward bias, meaning that we actually overestimate the positive impact of education on trust. The next session will deal with the endogeneity issue.

## 2.3 Endogeneity

Since the education indicator can be endogenous to trust, this section focuses on identification strategies that do not involve the educational attainment directly. In this regard, an exogenous proxy for the educational attainment has been adopted: the launch of the *Compulsory Education Law* (Chinese National People's Congress, 1986). We do not choose parental educational



endowment to avoid picking up intra-household cultural transfers which may as well affect one's level of trust (Nunn and Wantchekon, 2011; Bisin and Verdier, 2011), apart from the grand missing values by using this information. The launch of the law is seen as a natural experiment and considered beyond any individual's control (De Talancé, 2019; Wu and Shi, 2020). The law was announced to provide nine-year free education to all eligible children reaching six years old, covering a full-length education from a six-year primary school to a three-year junior high school. All the individuals that were under six years old in 1986 or born after 1986 should be affected. The implementation of the nine-year compulsory education law brings a remarkable increase in the enrollment rates of primary and junior high schools in China, which increased from 96.0% in 1985 to 99.1% in 2000 for the former and from 36.8% to 88.6% for the later during the same period.<sup>1</sup> Having said that, we would use the beneficiary of the Compulsory Education Law as a fuzzy indicator for a greater education attainment. As a result, we divide individuals into cohorts according to their eligibility to the Compulsory Education Law.

The law came into effect on July 1st in 1986 and the State Council urged each province to implement practices accordingly. Ten out of thirty-one provinces, autonomous regions or directly administered municipalities in mainland China passed their practices within the same year, directly affecting all the pupils who were to start a primary school in 1986, whereas other provinces put forward relevant practices in the later years.<sup>2</sup> Table 2.5 lists the time stamps of the implementation in each province of the mainland China, as well as the birth year of the generation that were affected. By province and birth year, we assign individuals that were under six years old in the launch year or born after the launch year as the exposed cohort, benefiting from the free compulsory education; whereas the rest are considered as the control group.

Table 2.6 presents the mean difference as to years of education and generalised social trust among the treated and control groups. Considering the quality of education in 1950s can be significantly different from that in 1990s and the age trend that younger generations may have

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<sup>1</sup>Source: Report of Chinese National Institute of Education Sciences in 2016.

<sup>2</sup>Provincial administrative divisions in mainland China consist of 23 provinces, 5 autonomous regions and 4 directly administered municipalities.

Table 2.5: Implementation Year of the Compulsory Education Law in Each Province

Implementation	Provinces or the equivalents	Cohort
1986	Beijing, Hebei, Shanxi, Liaoning, Heilongjiang, Zhejiang, Jiangxi, Chongqing, Sichuan, Ningxia	1980
1987	Tianjin, Jilin, Shanghai, Jiangsu, Anhui, Shandong, Henan, Hubei, Guangdong, Yunnan, Shaanxi	1981
1988	Fujian, Guizhou, Xinjiang, Inner Mongolia	1982
1989	Tibet, Qinghai	1983
1990	Gansu	1984
1991	Hunan, Guangxi, Hainan	1985

Source: Provincial governments' website and [Lin and Li \(2020\)](#).

Table 2.6: Statistics About Education and Trust by Cohort

	All Individuals			Birth Year 1969-1989		
	Treated	Control	Treated - Control	Treated	Control	Treated - Control
Years of Education	10.39	6.54	3.85 (0.069)***	10.35	8.01	2.34 (0.095)***
Generalised Social Trust	54%	53%	1% (0.008) *	53%	54%	-1% (0.011)
N	5355	16388		3270	4818	
Total	21743			8088		

more opportunities to get educated, a restricted sample has been constructed, only including individuals born within 10 years before and after the education law came into force (i.e. people born between 1969 and 1989). One can see that the individuals who are exposed in the compulsory law acquire more years of schooling than those unexposed. Also, the gap between the two groups is smaller in the restricted sample, mostly because the mean education of individuals in the control group is greater than that of the individuals in the whole sample. This indicates that elder generations tend to receive less schooling, which may overstate the effect of the education law if we continue to use the full sample. Other than educational attainment, we calculate the mean of the generalised social trust indicator as well. We find that in the whole sample, treated individuals have a higher level of trust than the control group. We do not observe a significant difference in trust between the treated and control groups among the restricted sample.

Table 2.7 presents the comparisons in mean trust between treated and control groups by their hukou status, which breaks down the details of the cohort difference-in-difference that

Table 2.7: Difference in Trust by Cohort and Hukou Status

<i>Panel A: All sample</i>						
	Treated			Control		
	Urban Hukou	Rural Hukou	Difference	Urban Hukou	Rural Hukou	Difference
Generalised Social Trust	58%	52%	6% (0.015) ***	58%	51%	7% (0.009) ***
Total Difference						-1%
N	3619	12769		1393	3962	
Total						21743
<i>Panel B: Birth Year 1969-1989</i>						
	Treated			Control		
	Urban Hukou	Rural Hukou	Difference	Urban Hukou	Rural Hukou	Difference
Generalised Social Trust	57%	52%	5% (0.019) ***	60%	52%	8% (0.015) ***
Total Difference						-3%
N	1016	2254		1315	3503	
Total						8088

we intended to employ. Panel A shows the results for the full sample whilst Panel B presents the results for the restricted sample. It is noted that no matter which sample it is, no matter which group it belongs to, urban hukou holders have a higher level of generalised social trust than rural hukou counterparts. Moreover, the gap in generalised social trust between urban and rural hukou holders of the treated group is smaller than that of the control group. Our hypothesis is that such difference is statistically significant, which may imply a potential convergence in generalised social trust between rural and urban hukou holders via more investment in education.

There is one underlying assumption about the cohort - it assumes that individuals received education in the survey province. In other words, all migration decisions have been made by the family before the schooling age of the individual. That is, we do not consider the case that one may migrate during the schooling age. This assumption could hold as two-thirds of the sample were born before 1980 when internal mobility was extremely stringent (Cheng and Selden, 1994). Also, the average years of education of the sample is around 7.5 years which corresponds to the middle of the second year of the junior high school. It is far from common for a student to switch schools between cities amid a schooling cycle. In fact, it is as well unusual and disturbing to switch schools during an academic year within a city. On top of that, migrants (both inter-provincial and intra-provincial migrants) only consist of 5.0% of the sample (1096 individuals out of 21743). We think that such an assumption is reasonable.

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### 2.3.1 Cohort Difference-in-Difference

We thereby consider a cohort difference-in-difference estimation to inspect the possible heterogeneous treatment effect among varying groups, utilising the cohort indicator as an alternative to the years of education and letting it interact with hukou identities. The specification is shown as follows:

$$(3) \text{Trust}_i = \beta_0 + \beta_1 \times \text{Cohort}_i + \beta_2 \times \text{Hukou identity}_{in} \times \text{Cohort}_i + \sum_n \text{Hukou identity}_{in} \beta_n + \sum_k X_{ik} \beta_k + \text{Province}_j + \epsilon_i$$

Similar to the coefficients of the interaction terms in Equation (2),  $\beta_2$  is at our interest since it may reveal the heterogeneous effects of the hukou identity by groups as to different educational attainment. Together with  $\beta_n$ , where  $n$  refers to the specific dimension of the hukou identity,  $\beta_2$  also captures the impacts of the individual  $i$ 's hukou identity on the generalised social trust.  $\beta_1$  shows the relationship between the treatment of the launch of the Compulsory Education Law and the generalised social trust.

We apply the estimations on the full sample as well as the restricted sample. Results are shown in Table 2.8. In Column 1, the coefficient of the Cohort stands for the average partial effect of the beneficiary of the free compulsory education for urban hukou holders on trust, compared to the urban hukou non-beneficiaries, which does not exhibit a significant difference. However, the coefficient of the *Rural Hukou* shows significant and negative, indicating that the rural hukou non-beneficiaries have a 3.7 percentage points lower chance to trust compared to urban hukou non-beneficiaries. This implies a likelihood of trust loss due to the hukou status with all other conditions held in the mean. The interaction term *Cohort*  $\times$  *Rural Hukou* captures the marginal effect of being a rural hukou beneficiary which is insignificant. Compare between the coefficients of *Rural Hukou* and *Cohort*  $\times$  *Rural Hukou*, we find that the exposure to the free compulsory education turns out to be vague and insignificant. The reference group in Column 2 is the local beneficiaries, yet we do not observe a significant difference in the effect of the treatment between locals and migrants. Column 3 focuses on the effect of the exposure to the free compulsory education between rural and urban inhabitants. With the urban inhabitant non-beneficiaries as the reference group, we do not see a significant effect

of the exposure on rural residents compared to urban inhabitant non-beneficiaries. Yet Column 1 and Column 2 shows that on average, a rural resident status drags down the likelihood to trust by 1.7 percentage points. Column 4 - 6 present the results for the restricted sample. Meanwhile the general trend is similar, we do observe a difference in the magnitude of the effects. In Column 4, for instance, rural hukou non-beneficiaries have 4.5 percentage points less in the likelihood to trust than urban hukou non-beneficiaries. This to some extent reveals the impact of hukou status on generalised social trust, with other variables held constant.

In sum, rural hukou holders and rural residents on average are significantly unlikely to trust due to the hukou identity. However the indicator for the free compulsory education is not significant across estimations, implying that education can hardly mediate the trust gap between different hukou holders.

Table 2.8: Cohort Difference in Difference Estimation

	(1) Full b/se	(2) Full b/se	(3) Full b/se	(4) Restricted b/se	(5) Restricted b/se	(6) Restricted b/se
Cohort	-0.0310 (0.021)	-0.0282 (0.017)*	-0.0222 (0.018)	-0.0218 (0.029)	0.0062 (0.023)	-0.0070 (0.026)
Rural Hukou	-0.0372 (0.011)***	-0.0358 (0.010)***	-0.0358 (0.010)***	-0.0446 (0.019)**	-0.0277 (0.016)*	-0.0273 (0.016)*
Migrant	0.0171 (0.016)	0.0124 (0.023)	0.0163 (0.016)	0.0206 (0.022)	0.0254 (0.034)	0.0212 (0.022)
Rural Resident	-0.0195 (0.008)**	-0.0195 (0.008)**	-0.0165 (0.009)*	-0.0252 (0.014)*	-0.0255 (0.014)*	-0.0363 (0.017)**
Cohort x Rural Hukou	0.0054 (0.019)			0.0395 (0.025)		
Cohort x Migrant		0.0094 (0.031)			-0.0094 (0.042)	
Cohort x Rural Resident			-0.0111 (0.016)			0.0258 (0.023)
Female	Yes	Yes	Yes	Yes	Yes	Yes
Minority	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes
Age <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes
Income	Yes	Yes	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes	Yes	Yes
Province	Yes	Yes	Yes	Yes	Yes	Yes
N	21741	21741	21741	8086	8086	8086

Note: The dependent variable is a binary variable for the generalised social trust. Rural hukou/ migrant/ rural residents/ cohort are dummies.

Years of education is a continuous variable. Robust standard errors are in parenthesis. Significance Levels: \*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

### 2.3.2 Instrumental Variable

In order to obtain a more robust result, we also conduct an instrumental variable approach to tackle the endogeneity issue. Here we use the cohort variable a fuzzy instrument for years of education. As is stated in Section 2.3, the launch of the *Compulsory Education Law* is seen

beyond individual's decision and considered exogenous. Results from the above Cohort DiD also support the exclusion restriction of this instrument. A Two-Stage Least Squares (2SLS) approach is employed following below equations:

$$(4) \quad Education_i = \lambda_0 + \lambda_1 \times Cohort_i + \sum_n Hukou\ identity_{in} \lambda_n + \sum_k X_{ik} \lambda_k + \mu_i$$

$$(5) \quad Trust_i = \beta_0 + \beta_1 \times \widehat{Education}_i + \sum_n Hukou\ identity_{in} \beta_n + \sum_k X_{ik} \beta_k + \epsilon_i$$

Equation (4) presents the first stage estimation between the cohort indicator and the education. Equation (5) shows the second stage, where the estimated value of education from the first stage enters the final estimation. Results are reported in Table 2.9.

The Kleibergen-Paap Wald rk F-statistic reads 57.230 implying no weak instrument concern. The lower panel presents results of the first stage estimation, where we can see that the cohort indicator is significant at 1% level and positively co related to the years of education. All hukou identity indicators are significant in the first stage, which are reasonable as hukou identity plays a critical role in educational opportunities, among which hukou status matters the most. Looking at the upper panel which displays the second stage results, we notice that rural hukou holders and rural residents are less likely to trust, which is in line with the Cohort DiD results. Here the impact of the education is again insignificant, correcting the upward bias in the baseline analysis shown in Table 2.3 where we observe a significant and positive impact. This result is in line with what has been observed in Table 2.8, where education turns out no effect on trust when the bias has been corrected. In this regard, the different trust behaviour is owing to the hukou identity, especially the dimension of hukou status and type of residence. Moreover, as is suggested by [Wu and Shi \(2020\)](#), in China people with a higher education tend to "severe the social issues" and this could counteract the positive impact of education. One may be more conscious about the unfair treatment as a member of a discriminated group with the accumulation of education, which could explain why education has no impact on trust in our results. Moreover, in a research inspecting the impact of the education on trust, [Xu et al. \(2022\)](#) restricts their sample to rural women and argue that education can increase the level of generalised social trust. The heterogeneity as to gender or a more socio-economically disadvantaged group may also be blurred by average outcome.

On a different note, as we only have one instrument to tackle the reversed causality from education, which may not fully solve the endogeneity caused by for instance omitted variables. One may argue that the migration decision is also endogenous to trust as people are more likely to migrate if they have a higher level of trust in the institutions of the destinations (which is correlated to the generalised social trust) or in the trustworthiness of people in the destinations (Baudassé et al., 2018; Dhakal et al., 2022). Since this paper assumes that the individual receives education in the survey province, the migration decision is then seen to be made by the parental or even grandparental generation. We acknowledge that this could underestimate the effect of migration status on trust, which could be the reason why we do not observe a significant effect from the migration status. Also, the 2SLS result may largely reflect the average partial effects of the treated group defined by the cohort variable rather than the true education indicator for all the population as is suggested by Card (2001) and Li et al. (2022a). Therefore we do not dive in interpreting the 2SLS results in magnitude but in direction.

## 2.4 Conclusion

This paper examines the role of hukou identity in determining the generalised social trust in China and investigates what accounts for the gap in the trust behaviour. Starting from a logistic regression, this paper explores the determinants of trust. Then interaction terms are introduced to examine the potential heterogeneous effect of education among people with different hukou identities. Since education can be endogenous to trust, we introduce a cohort indicator and apply a Cohort DiD as well as an IV approach to tackle the endogeneity issue. Results confirm that on average both rural hukou holders and rural residents are less likely to trust compared to urban hukou holders and urban residents. In addition, results from Cohort DiD and IV approach show that hukou identity appears to be the cause of this trust difference and education does not seem to overturn the trust loss.

This again rings a bell to policy makers that how profound the hukou identity's impact on individual behaviours which cannot be easily reversed. On major limitation of the paper is that, the instrument variable is generated at the cohort level which may introduce noise

Table 2.9: Compulsory Education Law as IV

	Trust b/se
<i>Second Stage - General Social Trust</i>	
Years of Education	-0.0350 (0.023)
Rural Hukou	-0.1125 (0.051)**
Migrant	0.0235 (0.018)
Rural Resident	-0.0363 (0.014)***
<i>First Stage - Years of Education</i>	
Rural Hukou	-2.2005 (0.068)***
Migrant	0.1922 (0.099)*
Rural Resident	-0.4800 (0.056)***
Cohort	0.7772 (0.103)***
Female	Yes
Minority	Yes
Age	Yes
Age <sup>2</sup>	Yes
Income	Yes
Occupation	Yes
Province	Yes
N	21741

*Note:* The dependent variable of the first stage is the years of education which is continuous while the dependent variable of the second stage is a binary variable for the generalised social trust. The instrumental variable is the cohort indicator for the implementation of the Compulsory Education Law. Robust standard errors are in parenthesis. Significance Levels:

\*  $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

into the analysis. One potential alternative is to use the migration wave during the cultural revolution as a control to account for educational attainment. As in [Chen et al. \(2020b\)](#)'s work, young talents sent down to the rural areas during that period led to a 0.072 year increase in education for rural children. Further research can go forward from this point. Apart from that, this paper only conducts cross-sectional analysis. Even though the level of trust is seen to be stable over a long period, it would be interesting to investigate the dynamics with a panel dataset, especially the impact evaluation of the extent to which a change in hukou status or



type of residence can make up the trust loss.

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# DOES HUKOU-RELATED SOCIAL DISTANCE AFFECT INTRA-HOUSEHOLD BARGAINING ?

## 3.1 Introduction

Hukou plays an essential role in the Chinese marriage market and is intrinsic to almost all the matrimonial advertisements and speed dating questions. This reflects the ongoing stratification by hukou identity where it continues to impede Chinese citizens' job opportunity, wage rate, health care coverage, access to social programs, child school admission and so on (Song, 2014). Hukou is therefore more than a record of one's birthplace or residence locality but a status-like attribute. Luo et al. (2019) and Luo and Wang (2020) reveal that both rural hukou pupils and migrant status pupils are perceived to be less favoured and less trustworthy at schools, whereas urban local pupils are deemed as the most trustworthy among all. Rural hukou is considered inferior to urban hukou while migrant status is inferior to local status (Qi and Niu, 2012). Rural hukou migrants are among the bottom of the hukou hierarchy (Yang et al., 2021b).

Similar to religious homogamy in the US (Bisin et al., 2004), same race dating preference (Fisman et al., 2008; Hitsch et al., 2010) and horizontal caste marriage preference in India (Banerjee et al., 2013), same hukou marriage remains a dominating phenomenon in the Chinese marriage market (Qi and Niu, 2012; Zhou, 2019; Sun et al., 2021). Hukou heterogamy may embed a vast socio-economic gap between the spouses which could increase the likelihood of divorce (Yuan and Shi, 2017). However, hukou heterogamy does occur and its proportion has

increased since the 1990s with the advancement of hukou reforms to ease hukou-related disparities (Qi and Niu, 2012). Previous studies acknowledge the importance of hukou in mating selection yet fewer discuss whether hukou still makes a difference in marriage life. In this paper, we would like to investigate whether and to what extent the social distance from hukou heterogamy affects the household decision making process, in particular the intra-household bargaining power of the wife.

Researchers on assortative marriage cast light on the within-couple matching in terms of age, education, occupation, religion, race, family backgrounds, etc. (Schwartz, 2013). Marriages of which two parties are aligned on the demographic spectrum are considered homogamy whereas cross-group marriages are called heterogamy (Kalmijn, 1998). Homogamy remains a universal practice (Qi and Niu, 2012). Scholars explain the phenomenon from the perspectives of preferences, competition, structural impacts and interventions (Kalmijn, 1998; Hitsch et al., 2010; Schwartz, 2013; Tian and Davis, 2019). On the other hand, heterogamy still exists, despite the failed attempted of a substantial amount of literature to examine the association between heterogamy and discontent in marriage (Jorgensen and Klein, 1979). An explanation to justify the existence of heterogamy is the marriage exchange theory. Merton (1941) and Davis (1941) found in their field researches that cross-race marriages in the US are more likely to take place between a high class black person and a low class white person. This implies a compensatory exchange between the racial status and economical position (captured by education in both cases). Status exchange theory conceptualises that racial status is a desirable resource and can be vertically sorted like other socio-economic characteristics (Gullickson and Torche, 2014; Yuan and Shi, 2017). Later empirical analysis between interracial and intraracial couples supports the exchange theory and reveals that black males exchange racial status with their socio-economic backgrounds as they are more likely to marry down in intraracial marriage than in interracial marriage (Gullickson and Torche, 2014). In the India context, Banerjee et al. (2013) model the price of caste with respect to other demographic qualities and find that in an environment where caste preference stays hierarchical, there exists a trade-off between the caste and other socio-economic factors as stated in the status exchange literature. In the Chinese case, Qian and Qian (2017) provide evidence for the exchange between the migration status and educational attainment in Shanghai as China remains highly hukou-stratified. Mu

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and Yeung (2020) describe that only rural hukou migrants of high human, social and cultural capitals have a greater chance for cross-hukou heterogamy. Sun et al. (2021) document that the chance for older men with urban hukou to marry younger women with rural hukou increases among rural-to-urban migrants. Few research investigates within hukou heterogamy whether between spouses hukou-related social distance affects the household outcomes. This paper tries to fill the blank.

We argue that the hukou-related social distance can affect the outcomes of intra-household bargaining via restricting their outside options. Even till now, people with an underprivileged hukou status (a migration status or an agricultural hukou status) are discriminated against in terms of employment opportunities, child's school admission and access to social programs (Song, 2014; Yang et al., 2021b). In this regard, a non-agricultural hukou holder or a local status individual tend to have larger employment opportunities which means greater outside options. This enables them to have a higher threat point in the marriage and hence a greater bargaining power. For instance, between a migrant-local couple, the party with a migrant status may not have same chances of employment as the local spouse and be opted out of the local social welfare. As a result they are more vulnerable at the threat point indicating a low bargaining power in the household.

In the context of China, two specific features need to be considered regarding women's intra-household bargaining: one is married couples cohabiting with their parents (patrilocal or matrilocal cohabitation), the other is the highly skewed sex ratio (Du et al., 2015; Xie et al., 2019). The bond between adults and their parents remains tight as family togetherness is one of the core values of Confucianism. A household in China can refer to a multigenerational cohabitation. As a result, it is not uncommon to see couples cohabit with their parents (mostly often with the husband's parents) (Wu and Guo, 2010; Hu and Peng, 2014, 2015; Gruijters and Ermisch, 2019). Ideally such cohabitation can provide bilateral help for both sides: on one hand, it is easier for couples to take care of parents; on the other hand, parents are likely to help with chores or grandchild sitting (Courtin and Avendano, 2016; Yu and Xie, 2018; Zhao et al., 2021). Yet such living arrangements can influence women's well-being in both directions Shih and Pyke (2010). Yu and Xie (2018) find that the motherhood penalty (i.e. women with

young children suffer from a wage disadvantage) is the largest for women who live with their husbands' parents, smaller for those who live with husbands only and tending to zero for those who live with their own parents (patrilocal /matrilocal coresidence). Women who live with husbands' parents tend to feel less satisfied with the marriage (Zhao et al., 2021). Cheng (2019) argues that educational attainment can hardly improve the intra-household bargaining power of the women in a patrilocal coresidence. Cohabiting with wives' parents can also decrease wives' weekly chores time, yet such reduction is less or simply unobserved among women cohabiting with husbands' parents. (Jia, 2014; Jisheng and Yahong, 2019; Zhang and Li, 2020; De Bruin and Liu, 2020). Women tend to gain more help from natal families while facing more resistance or even deprivation from husbands' families (Shih and Pyke, 2010). Lui (2018) find that rural wives of urban men are often stigmatised as "unpaid reproductive workers" by the husbands' families. From a hukou point of view, local hukou holders are more likely to cohabit with their own parents. In this regard, local wives have a greater chance to cohabit with their parents or get support from them more easily compared to migrant counterparts, suggesting a channel to improve their well-being in marriage. On the contrary, migrant wives of local men are likely to cohabit with husbands' parents, which may further complicate the role as a wife at home (e.g. greater family burdens such as more time spent on chores and childcare (Yu and Xie, 2018)). As a result, we include cohabitation with parents in the robustness check section. Our results reveal that compared to neolocality, patrilocality would decrease the chance for the wife to be the household head as well as her "final say" over family events.

Another specificity about China is the extreme sex ratio (115.88 in 2014 while the normal range is between 103-107 (Guilmoto, 2012; UNFPA, 2018)). This phenomenon is mainly driven by the preference of boys and the one-child policy (1980-2015) had worsened the situation, as the latter introduced a higher demand for prenatal sex diagnosis technologies and more prenatal selection (Bulte et al., 2011; Kumar and Sinha, 2020). Since sex ratio indicates the supply and demand in the marriage market, an imbalanced sex ratio of marriageable men and women would encourage heterogamy (Jin et al., 2013; Lui, 2016). In a relatively favourable marriage market condition, women have a greater bargaining power in the marriage market (i.e. more likely to marry up (Du et al., 2015; Yao et al., 2023)) and such advantage may last even after married (i.e. exercise more intra-household bargaining power (Porter, 2016)). This

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could be a reason why the proportion of the female household head is high in our dataset (45%).

Here we assume that individuals keep the hukou and migration status constant throughout the marriage according to the following reasons: a) In our sample, the mean age for female is 49 and that for male is 51, indicating that when the majority got married, the hukou conversion restrictions remained stringent. During Mao's era upward hukou conversion (e.g. convert from rural to urban hukou) was strictly regulated and limited for people by a state-own urban enterprise or enrolled in an urban school (Wang and Schwartz, 2018). b) Even though hukou conversion restriction has been eased since 1980s, only elite rural hukou holders (qualified talents or local cadres) were eligible to convert the hukou and the quota for such hukou conversion was small and strictly controlled as to the local urban population (Cheng and Selden, 1994; State Council, 1998b; Chan and Zhang, 1999). c) The expansion of the individuals who managed to convert hukou status since 1990s was mainly driven by individual achievement such as higher education enrolment or land acquisition (Wu and Treiman, 2004; Sun and Fan, 2011; Chan, 2012; Zhang and Treiman, 2013; Quheng and Gustafsson, 2014). Hence "marrying an urban hukou holder in no way guaranteed hukou conversion for the rural spouse (Wang and Schwartz, 2018)". Even nowadays, hukou conversion through marriage still requires rigorous application particularly in populated areas. However, we may still understate the proportion of hukou heterogamy, which may lead to an underestimation of the impact especially for those who marry up.

This paper innovatively combine the hukou literature with the intra-household bargaining thread and inspect whether the hukou status as a social distance still plays a role on the intra-household bargaining assuming the marriage has been assortative. Two outcome variables are employed: one is the household head, the other is the decision making. We then investigate the relationship between the bargaining indicators and the hukou-related social distance by controlling other factors that may determine the intra-household bargaining power, notably the ethnicity distance, education distance, occupation distance, health distance and household characteristics. Based on the assumption that the one making more decisions at home may have a higher bargaining power, we assume the household head and the number of family

events that one has a say reflect one's bargaining power at home. We find that compared to inter-hukou married females, married-up women tend to exert less bargaining power while married-down women tend to have more bargaining power. This paper provides a novel perspective to understand the role of hukou identity as a measure of social distance between spouses in a household.

The remaining parts of the paper organise as follows: Section 3.2 presents a literature review on intra-household bargaining, Section 3.3 introduces the data and the empirical strategy, Section 3.4 interprets the main results while Section 3.5 checks the robustness, Section 3.6 concludes.

## 3.2 Literature Review

Models of household decision making can be categorised into two classes: unitary models and bargaining models where a subset of collective models, cooperative models and non-cooperative models are developed. The unitary model assumes that all the members of the household pool their resources to maximise the joint utility function. It implies no bargaining in marriage and hence the distribution of resources does not affect consumption behaviours nor the household outcomes. However, an extensive body of empirical literature has questioned such presumption (Strauss and Thomas, 1995; Doss, 1996). Research show the evidence that the fraction of the total income controlled by a spouse does matter and it would alter household outcomes such as the allocation of time, female labour participation, spending on women and men's clothes, alcohol and tobacco consumption, domestic violence, child well-being, financial investment and so on (Thomas, 1990; Schultz, 1990; Lundberg et al., 1997; Pollak, 2005; Friedberg and Webb, 2006; Ward-Batts, 2008; Duflo, 2012). Those evidence set grounds for intra-household bargaining. As a subset of collective models, cooperative bargaining models assume the household to be able to achieve Pareto efficiency whereas the non-cooperative models loosen the assumption that households may not reach Pareto efficiency (Chiappori, 1992, 1997; Doss, 2013). In any case the bargaining power of one spouse is often assumed as the utility they get from a divorce or more generally from a threat point which could refer to the point of a non-cooperative marriage (Manser and Brown, 1980; McElroy

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and Horney, 1981; Lundberg and Pollak, 1993; Friedberg and Webb, 2006). Therefore understanding what the outside options are and what determines them are critical to measure one's bargaining power. From a market point of view, the outside options for a spouse could be the resources at hand or the possibility to access the resources. With resources, one is able to realise their preferences by investing in desired outcomes and therefore have a larger bargaining power at home. Labour market participation, incomes, current and lifetime earnings and wage rates are common proxies for bargaining power (Thomas, 1990; Pollak, 2005).

Moreover, working outside the household may provide the individual with skills, information and networks that elevate their productivity which in turn increase their outside options. In this regard, human capital such as education is often used as a measure since one's level of education is correlated to their outside options (Doss, 2013). However, the decision to work itself is endogenous. As a result, non-labour incomes, non-labour transfers, land rights, possessions at the time of marriage, the ownership of assets or even the change in inheritance law which allows women have rights over properties have raised scholars' attention and become proxies for bargaining power because they are less relevant to labour participation (Schultz, 1990; Lundberg et al., 1997; Beegle et al., 2001; Behrman and Hodinott, 2005; Maluccio and Flores, 2005; Deere and Doss, 2006; Datta, 2006; Allendorf, 2007; Duflo et al., 2007; Brown, 2009; Bobonis, 2009; Deininger et al., 2013; Evans and Popova, 2014; Almås et al., 2018).

Another strand of popular measures for bargaining power is the observed outcome which should reflect the outcomes of the intra-household bargaining. The questions about the household decision making - who has the final say over family events - are used to reveal which spouse's preferences are "reflected to a greater degree in household choices" (Elder and Rudolph, 2003; Friedberg and Webb, 2006; Connelly and Zheng, 2010; Reggio, 2011; Bertocchi and Torricelli, 2014; Bros et al., 2022). Outcomes that directly reveal women or men's preferences such as fertility decisions and gendered expenditure preferences (Bankole, 1995; Prabhu, 2010). This implies that men and women have different preferences. Also, consumption patterns may serve as a proxy. This may include the household expenditure patterns where the level of the consumption of women, men and children's goods may reflect the distribution of bargaining power. Studies reveal that women's bargaining power affects household spending on food, ed-



education, health and other goods (Deaton, 1989; Quisumbing and Maluccio, 2003; Duflo, 2012; Duflo and Udry, 2004). Moreover, women with a higher bargaining power tend to have prenatal care (Beegle et al., 2001). Likewise, the production decisions can reflect bargaining power as well. Especially in agricultural households, the allocation of inputs like seeds or fertiliser may indicate the bargaining power as the produced goods may be distributed by units of input (Goldstein and Udry, 2008). Also the allocation of labour and the adoption of new technologies can also impact the level of production by gender and hence the bargaining power respectively (Von Braun, 1988). Talking about the allocation of labour, the time allocation may reflect the bargaining power too. The time allocated to work may be related to production while the non-labour time which includes leisure and self-care may increase one's well-being. Working hours, time spent on chores and the amount of leisure and self-care time are often included (Zhang and Chan, 1999; Li and Wu, 2011; Xu, 2017). Duflo (2012) summarises that increasing women's possession of resources would improve children's outcomes in terms of health and education. Indicators for children's survival rate, nutrition status, school enrolment and expenditures on education are in focus (Thomas, 1990; Duflo, 2003; Qian, 2008; Luke and Munshi, 2011; Duflo, 2012). Lastly, individuals' perceptions towards gender norms is correlated to the bargaining power as well (Mabsout and Van Staveren, 2010; Field et al., 2021). In some context where the patriarchal structure remains deeply rooted, the gender of the first child can be a proxy for women's bargaining power as in many places boys are favoured than girls (Li and Wu, 2011).

In our conceptual framework, we propose that the hukou-related social distance may affect the outcomes of intra-household bargaining via restricting one's outside option as underprivileged hukou identities remain discriminated against in the aspect of employment opportunities, quality education and access to social benefits (Song, 2014; Yang et al., 2021b).

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## 3.3 Data and Identification Strategy

### 3.3.1 Data and Variables Description

The data is from the 2014 phase of the China Family Panel Studies. Although a panel study as it is called, only the 2014 phase includes questions concerning the family decision making process which allows the analysis. We are particularly interested in two types of information: one is the prime person responsible for the family financial and economic condition and the other is the principal person responsible for certain family events. All the questions are asked at the household level which means that there is no conflict of answers between spouses. Furthermore, the answers are seen as a reflection of family consensus. That is to say, we assume that only the person who actually has leverage over the indicated event would be reported. However, this leaves a window for the possibility of imposter reporting as we can not really identify who answers this part of the questionnaire. Even if we can, we do not have a second source for cross checking. On such a basis, we acknowledge that we would conduct a noisy estimation. To ensure the credibility of our findings, we therefore propose two measures of the intra-household bargaining power to inspect the mechanism. In this regard, we focus on the currently married couples who live together and disregard the singles, widowed, divorced or separated individuals which altogether account for 23.73% of the data.

The first proxy is a binary variable of the female household head - whether the wife is the principal person to take the responsibility for the family economic and financial condition as is put by [Bertocchi and Torricelli \(2014\)](#). It is constructed as an interaction between a survey question and the gender indicator. The question asks for the person who is able to answer the family finance questionnaire, which is defined as an indicator for the chief finance executive of the family by the survey designer ([ISSS, 2020](#)). That is why we interpret it as "the principal person in charge of the family finance and economic condition" which corresponds to the role of household head. The answer to the question goes to 1 if the individual is the household head and 0 otherwise. Table 3.1 presents the percentage of household head by gender where one can see that it is more common for husbands to be household heads. As the question is interviewed at the family level, there exist couples that cohabit with their parental generation

or other family members. As a result, in a such extended family, family members other than the couple could be appointed as the household head or the principle person responsible for certain family issues which concerning 17% individuals in the data. That is to say neither party of the couple is the household head. We thereby exclude this fraction in our analysis, the inclusion of which does not modify the main results.

The other indicator is an aggregation of five binary questions regarding family decisions. These questions demand for the principal person that is responsible for family events, which are interpreted into the individual who has a "final say" power in family decision making. This indicator is in line with the decision making questions utilised by [Friedberg and Webb \(2006\)](#) which they consider to reflect one's "preferences [...] to a greater degree in household choices". Unlike the Health and Retirement Study in [Friedberg and Webb \(2006\)](#), the CFPS dataset includes decision making questions on specific family events in the following aspects: family expenditure, financial investment (including deposit, investment and insurance), house purchasing, purchase of high value commodities and the direction of child education. Each question is coded into 1 if the individual is the primary person in charge of the issue and 0 if not. We therefore aggregate the answers as one's bargaining power at home which is analogous to the generic question that who has more say in major family decisions in [Friedberg and Webb \(2006\)](#). In addition, we consider that both spouses may take responsibility for certain family events as a result of specialisation. We assign an equal weight to all these aspects and compare the individual's intra-household bargaining power by comparing the value of the aggregated decision making. Table 3.1 shows the descriptive statistics about the decision making by gender. In general husbands have almost 1.5 more "final say" power than wives at a significant level.

The correlation coefficient between the decision indicator and the household head indicator is 0.60, meaning that the outcomes of intra-household bargaining are consistent across perspectives.

According to [Song \(2014\)](#), rural hukou holders especially rural-to-urban migrants are mostly discriminated against institutionally. Rural hukou is deemed inferior to an urban hukou while a migrant status is perceived inferior to a local status. We then define the marry-up along the

Table 3.1: Bargaining Power Indicator Statistics by Gender

	Female		Male		Female - Male
	N	Mean	N	Mean	Difference
Household Head	8310	45.3%	8295	54.7%	-9.40%***
Decision Making	7554	1.77	7540	3.23	-1.46***

Table 3.2: Hukou Assortative Marriage Statistics

	Hukou Status	Migration Status
Same Hukou Marriage	91.30	96.47
Female Marry-Up	5.96	1.93
Female Marry-Down	2.75	1.60
N	16658	16658

hukou status ladder as a rural hukou holder married to an urban hukou holder and vice versa for marry-down: an urban hukou holder married to a rural hukou holder. Same rules applied with respect to migration status: marry-up is defined as a migrant married to a local while marry-down means a local married to a migrant. Since in developing countries where women labour market participation is low, marriage is seen as the single most important determinant of women's economic future (Banerjee et al., 2013). We thus frame the question from the female's perspective and divide couples into horizontal marriage, female marrying-up and marrying-down with regards to the hukou status and migration status of both spouses. In this sense we would include four binary indicators to capture the heterogamy behaviour in terms of the hukou and migration status. The reference groups are homogamy couples. From Table 3.2 we can see that hukou homogamy remains mainstream.

The control variables are notable determinants of bargaining power including both the individual perspective (age, ethnicity, education, occupational status, health status) and the household perspective (the number of preschool children, family size and its quadratic term) (Banerjee et al., 2013; Bertocchi and Torricelli, 2014; McClintock, 2014). Education is captured in years provided in the dataset. Occupational status is constructed from the occupational code following the instruction by Xu and Pan (2021), dividing individuals into six categories (in ascending order): unemployed and others, peasants, production workers and other labourers, service staffs, office workers, and managers and other professionals. We distinguish the "unemployed and others" category from the "peasants" group and acknowledge the difference

between short-term labours from contracted service staffs. Hence we have two more categories other than [Xu and Pan](#)'s approach. The "unemployed and others" group is deemed to have the lowest occupational status whilst the "managers and other professionals" is considered as the highest. The health status reflects the Body Mass Index (BMI) calculated by the weight and height reported in the sample compared to the standard. In addition, a minority indicator is included to control another element of social distance from the ethnic aspect. For all the controls, instead of using the absolute values, we utilise the between spouse differentials as a common practice in literature ([Grossbard-Shechtman and Neuman, 1988](#); [Thomas, 1994](#); [Lundberg and Ward-Batts, 2000](#); [Lundberg et al., 2003](#); [Bertocchi et al., 2011](#); [Pericoli and Ventura, 2012](#); [Bertocchi et al., 2012](#); [Bertocchi and Torricelli, 2014](#)). To be more specific, we calculate the gap between two parties in terms of each trait and employ a set of dummy variables to indicate whether the wife is at an advanced position. Table 3.3 and Table 3.4 present the average wife's traits with respect to the average husband's and the within-couple differentials. Table 3.5 and Table 3.6 further breaks down the demographic characteristics of each spouse of the married couple and their differences in terms of demographic patterns. Table 3.5 groups couples by hukou distance while Table 3.6 by migration distance. Even though all the marriage types show an overall gender trend that on average wives are younger, less educated and have a lower occupation level than husbands, we do observe some between marriage type differences. Table 3.5 shows that marrying-up rural hukou females are on average much younger than their urban hukou husbands compared to other couple types, which is in line with the observation of [Sun et al. \(2021\)](#) that older urban hukou men are more likely to marry younger women with rural hukou. Same phenomenon can be spotted in Table 3.6 that marry-up female migrants are much younger than their local husbands. Moreover, it is worth noting that the income gap between marry-down local females and their husbands is the largest among all the categories. This echoes ([Qian and Qian, 2017](#))'s work that there exists a status exchange between migration status and socioeconomic status according to a field research in Shanghai.

Table 3.3: Other Assortative Marriage Statistics

	Wife			Husband		
	N	Mean	SD	N	Mean	SD
Age	8336	49.528	12.587	8322	51.559	12.824
Years of Education	8336	6.074	4.728	8322	7.853	4.161
Occupational Status	8336	2.426	1.403	8322	2.784	1.411
	N	Percentage		N	Percentage	
Minority	8336	7.2%		8322	6.9%	
Healthy	8336	53.5%		8322	55.0%	
Rural Hukou Holder	8336	72.7%		8322	69.4%	
Migrant	8336	4.8%		8322	4.4%	
Observations	16658					

Table 3.4: Wife-Husband Differentials

Minority Distance	Percentage
Same Ethnicity	96.45%
Female Minority - Male Majority	1.78%
Female Majority - Male Minority	1.78%
N	16658
Other Status Distance	Percentage
Wife Senior	8.94%
Wife Better Job	22.87%
Wife higher education	32.60%
Wife Better Health	24.01%
N	16658

### 3.3.2 Identification Strategy

The question at our interest is whether the social distance between spouses with respect to hukou identity would impact a wife's probability to be the household head, which as in [Bertocchi and Torricelli \(2014\)](#), is defined as the principal person in charge of the family financial and economic condition. Since the answer to the question is reported at the household level, we only have one source of the information. The data could be noisy. Therefore, we include a set of questions measuring intra-household decision making process regarding family issues as a supplement. Though the questions are equally answered at the household level, they specify various aspects ranging from child education to family expenses and ask who is the principal person responsible for each one. In this sense, we consider an aggregation of the answers as one's bargaining power at home, i.e., the power of "final say" on certain issues, analogous to the decision making question in [Friedberg and Webb \(2006\)](#). We then propose two frameworks

Table 3.5: Wife-Husband Hukou Status Matching Statistics

	(1) Wife		(2) Husband		(1) - (2)
	Mean/ %	SD	Mean/ %	SD	Difference
<i>Female Marry-Up</i>	<i>Rural Hukou</i>		<i>Urban Hukou</i>		
Age	49.889	14.661	52.230	14.547	-2.341***
Education	6.712	4.728	9.595	4.072	-2.883***
Occupation Level	2.546	1.403	3.111	1.709	-0.565***
Minority	7.9%		6.3%		1.6%
Healthy	55.2%		50.6%		4.6%*
Migrant	10.5%		12.1%		-1.6%
Income	4397.718	11240.44	14486.35	26474.71	-10088.64***
N/ %	496/ 5.95%				
<i>Female Marry-Down</i>	<i>Urban Hukou</i>		<i>Rural Hukou</i>		
Age	46.013	13.301	47.978	13.528	-1.965***
Education	8.713	4.578	8.957	3.934	-0.244
Occupation Level	2.913	1.841	3.209	1.513	-0.296***
Minority	5.2%		6.5%		-1.3%
Healthy	51.7%		47.8%		3.9%
Migrant	12.6%		17.0%		-4.4%*
Income	8445.874	22488.67	15698.7	26803.24	-7252.83***
N/ %	230/ 2.76%				
<i>Same Status Marriage</i>	<i>Rural Hukou</i>		<i>Rural Hukou</i>		
Age	48.780	12.152	50.732	12.392	-1.952***
Education	4.766	4.162	6.808	3.766	-2.042***
Occupation Level	2.273	1.083	2.605	1.136	-0.332***
Minority	8.4%		8.2%		0.2%
Healthy	53.3%		57.9%		-4.6%***
Migrant	3.1%		2.8%		0.3%
Income	2669.442	8211.137	8691.8	18026.04	-6022.358***
N/ %	5564/ 66.75%				
<i>Same Status Marriage</i>	<i>Urban Hukou</i>		<i>Urban Hukou</i>		
Age	51.870	12.795	53.913	13.221	-2.043***
Education	9.179	4.581	10.150	4.140	-0.971***
Occupation Level	2.758	1.915	3.146	1.838	-0.388***
Minority	3.7%		3.3%		0.4%
Healthy	53.9%		49.2%		4.7%**
Migrant	6.9%		5.6%		1.3%*
Income	9510.535	18810.26	16838.97	25176.38	-7328.437***
N/ %	2046/ 24.54%				
Observations	8336				

Table 3.6: Wife-Husband Migration Status Matching Statistics

	(1) Wife		(2) Husband		(1) - (2)
	Mean/ %	SD	Mean/ %	SD	Difference
<i>Female Marry-Up</i>	<i>Migrant Hukou</i>		<i>Local Hukou</i>		
Age	38.981	13.79192	41.907	14.495	-2.926***
Education	9.475	4.282	10.074	4.111	-0.599**
Occupation Level	3.142	1.807	3.364	1.591	-0.222*
Minority	9.3%		6.8%		2.5%
Healthy	56.2%		53.1%		3.1%
Rural Hukou	58.6%		44.4%		14.2 %**
Income	12474.48	24432.23	21173.59	29452.51	-8699.105***
N/ %	162/ 1.94%				
<i>Female Marry-Down</i>	<i>Local Hukou</i>		<i>Migrant Hukou</i>		
Age	46.269	14.802	47.948	14.842	-1.679104***
Education	7.724	5.655	9.075	4.328	-1.351***
Occupation Level	2.754	1.740	3.142	1.542	-0.388***
Minority	1.5%		3.0%		-1.5%
Healthy	49.3%		52.2%		-2.9%
Rural Hukou	62.7%		47.0%		15.7%***
Income	8841.119	17018.04	21835.75	32372.75	-12994.63***
N/ %	134/ 1.61%				
<i>Same Status Marriage</i>	<i>Migrant Hukou</i>		<i>Migrant Hukou</i>		
Age	42.907	14.217	45.280	14.376	-2.373***
Education	8.780	4.772	9.928	4.114	-1.148***
Occupation Level	3.242	1.853	3.644	1.676	-0.403***
Minority	5.5%		4.7%		0.8%
Healthy	59.7%		46.6 %		13.1%***
Rural Hukou	55.9%		55.9%		0.0%
Income	14143.89	28012.85	24525.73	40631.93	-10381.84***
N/ %	236/ 2.83%				
<i>Same Status Marriage</i>	<i>Local Hukou</i>		<i>Local Hukou</i>		
Age	50.003	12.306	51.976	12.593	-1.973***
Education	5.893	4.661	7.723	4.129	-1.830***
Occupation Level	2.380	1.359	2.740	1.384	-0.360***
Minority	7.3%		7.0%		0.3%
Healthy	53.3%		55.4%		-2.1%***
Rural Hukou	73.7%		70.8%		2.9%***
Income	4085.82	11293.14	10436.71	19539.83	-6350.888***
N/ %	7808/ 93.62%				
Observations	8336				



to estimate the determinants of bargaining power as a dichotomy variable (i.e. female household head) and a mixture of discrete and continuous process (i.e. aggregation of the decision making). For the former, a logistic model is applied, whereas for the later an Ordinary Least Squares (OLS) model is employed. In the OLS model, the dependent variable is seen as continuous in that the aggregation reflecting one's relative bargaining power at home. By doing so, we acknowledge that the aggregation value may underestimate one's bargaining power at home as the mentioned family events can be limited in depicting a panoramic image of one's 'say'.

Following a bargaining approach, we regress the measure of bargaining power on the social distance of both spouses with respect to hukou identity and insert controls for spouse attributes and household characteristics separately. The specification thus taking the following form:

$$(1) \quad Y_i = \beta_0 + \beta_1 \times \text{hukou distance}_{ij} + \beta_2 \times \text{migration distance}_{ij} + \sum_n X_n \beta_{nij} + \sum_k H_k \beta_k + \text{Region}_p + \epsilon_i$$

$Y_i$  represents two dependent variables that interest us: i. a latent variable as an indicator of the female household head supported by a questionnaire about the household's economic condition; ii. a censored variable with a scale from 0 to 5 aggregating the decision making (who has the "final say") in the following 5 family issues: family expenditure, financial investment, house purchasing, direction of the child's education and high priced commodity purchasing.

Hukou distance<sub>ij</sub> and Migration distance<sub>ij</sub> are the main variables of interest. Hukou distance<sub>ij</sub> stands for the wife  $i$ 's hukou status relative to her husband  $j$ 's. It is a categorical variable capturing whether she married up or married down, with the same hukou status marriage to be the reference. That is to say, If the wife  $i$  holds a rural hukou and her husband  $j$  has an urban hukou, then she is considered to be "marrying-up", whereas an urban hukou wife  $i$  marries to a rural hukou husband  $j$  is considered to be "marrying-down". If both parties of the couple have the same hukou status, then they are considered to have a "same hukou marriage" and become reference groups. Same rules are applied for the Migration distance<sub>ij</sub>.

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$\sum_n X_n$  is a series of distances in terms of  $n$  individual attributes between the wife  $i$  and the husband  $j$ , which includes minority distance, age, years of education, occupational status and health status. Minority distance is a categorical variable with the same ethnicity marriage as the reference. The two other categories are whether the wife is ethnic minority and marries to an ethnic majority husband or the other way around. The age, education, job and health indicators are binary variables. They take the value 1 if the wife is senior to the husband, has a higher occupational status, achieves more education and has a better health than the husband, and 0 otherwise. They are calculated as the differentials between the two parties as stated in Section 3.3.1. Here we do not include parental attributes of the both parties as we believe that the inclusion of the educational attainment and occupational status of both spouses can reflect cultural transfers from the original families. The main results remain robust when we include the family information despite the fact that the inclusion of parental information has induced a great loss in observations.

$\sum_k H_k$  controls  $k$  properties of the household which make a difference on the wife's bargaining power. Here we include the number of preschool children, the size of the family and its quadratic form and the net family total assets as commonly seen in literature (Banerjee et al., 2013; Bertocchi and Torricelli, 2014; De Bruin and Liu, 2020). We may expect a positive sign of these variables on the female household bargaining power indicators as the traditional gender role asks more about female devotion at home, which could be seen as a household labour specialisation as is suggested by Bertocchi and Torricelli (2014). We will discuss about this in the robustness check section.

$Region_p$  is the control for provincial disparities such as sex ratio, economic development and cultural norms regarding intra-household dynamics.  $\epsilon_i$  is the error term at the individual level.

However, one may argue that the marriage decision is not random. The reasons why one enters a type of marriage may also determine the intra-household bargaining power later. To address this issue, we further use a counterfactual framework with Augmented Inverse Probability Weights (AIPW) to correct such selection bias (Robins and Rotnitzky, 1995; Wooldridge, 2007; Glynn and Quinn, 2010; Narduzzi et al., 2014; Özçelik et al., 2020; Hernán and Robins,

2020; Carry et al., 2021; Kurz, 2022; Waernbaum and Pazzagli, 2023). If we see an individual entering one type of marriage as a treatment, where hukou homogeneity is considered as the control while marry-up and marry-down are treatments of two levels. In this case, the causality from hukou-related social distance to the intra-household bargaining power can be rephrased as to calculate the Average Treatment Effect (ATE). In a counterfactual framework, we calculate the likelihood of an individual entering a particular type of marriage based on their observed characteristics and generate this individual's counterfactuals as if they have chosen otherwise. Then we utilise the inverse probability as the weight for the individual's hukou-related social distance variables in the outcome Equation (1) (Angrist and Pischke, 2009; Cattaneo, 2010; Cattaneo et al., 2013; StataCorp, 2015). Below Equation (2) presents the estimated outcome equation and Equation (3) presents the equation to estimate the likelihood of marriage choice:

$$(2) \quad ATE_t = E(Y_t - Y_0) = E(Y_t) - E(Y_0) = E\left[\frac{YT}{P(X)}\right] - E\left[\frac{Y(1-T)}{1-P(X)}\right] = \frac{1}{N} \left[ \sum \frac{y_i t_i}{p(x_i)} - \sum \frac{y_i (1-t_i)}{1-p(x_i)} \right]$$

for  $t \in \{1, 2\}$ , where  $Y_t$  and  $Y_0$  are conditionally independent of  $T$  on a set of covariates  $X$  (i.e.  $Y_t, Y_0 \perp T | X$ ).

$$(3) \quad P(T = t_i | X = x_i) = b_0 + b_1 \times \text{education}_i + b_2 \times \text{minority}_i + b_3 \times \text{occupational status}_i + b_4 \times \text{health}_i + \mu_i$$

In Equation (2),  $T$  denotes the treatment and  $t_i$  denotes the assigned treatment of the individual  $i$  (i.e. the type of marriage  $i$  ends up into), the control is 0 which means hukou homogeneity.  $P(X)$  means the probability to be exposed to the treatment conditional on the observed characteristics  $X$  and  $p(x_i)$  refers to the likelihood for  $i$  to end up in a particular type of marriage given their characteristics  $x_i$ .  $\sum \frac{y_i t_i}{p(x_i)} - \sum \frac{y_i (1-t_i)}{1-p(x_i)}$  indicates the difference between the realised and counterfactual outcomes of individual  $i$  based on the likelihood to be exposed in the treatment  $t$ . Equation (3) estimates  $p(x_i)$  for each individual  $i$ . Here we include  $i$ 's education, ethnicity, occupational status and health, all calculated as is stated in Section 3.3.1.

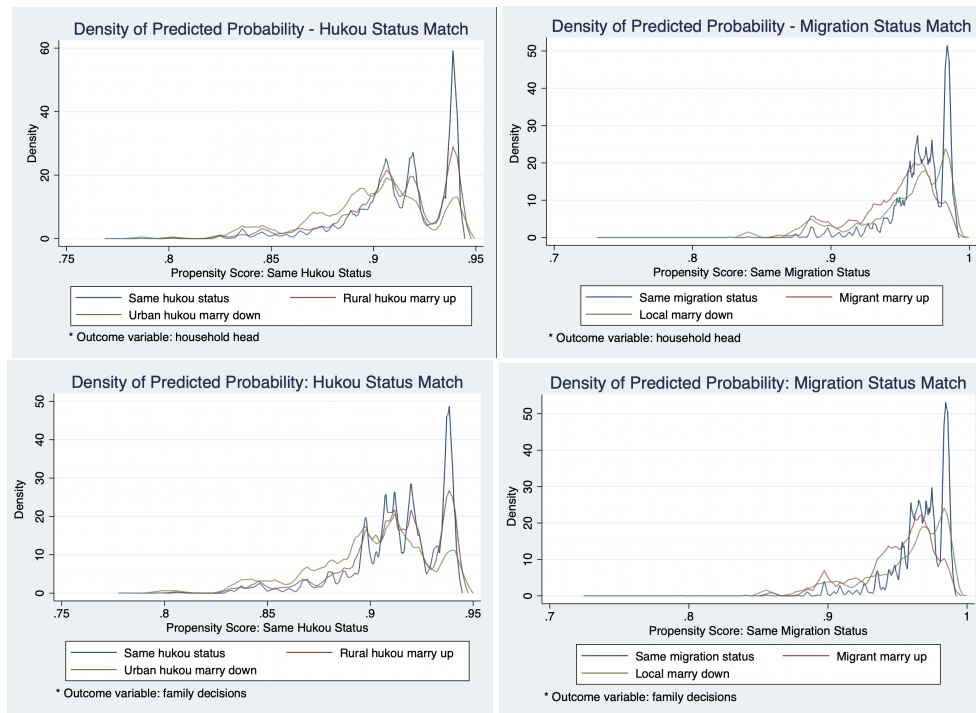


Figure 3.1: Density of Predicted Probabilities

To apply AIPW estimator, we have to meet the following two assumptions: conditional independence assumption and overlap assumption (Cattaneo et al., 2013; StataCorp, 2015). The conditional independence assumption restricts the dependence between the potential outcomes and the treatment model (Equation 3). Even though we have included as many common indicators to predict the likelihood of intermarriage (Fu, 2001; Gullickson and Torche, 2014; Torche and Rich, 2017; Qian and Qian, 2017), marriage decision can be affected by other unobservables. As a result, we may overstate the impact of hukou-related social distance on the wife’s intra-household bargaining power. That is to say we estimate the lower bound for a negative effect whereas an upper bound for a positive effect. The overlap assumption ensures that each individual has the potential to receive any treatment level. To demonstrate the assumption, we plot the predicted density of the predicted probabilities that a hukou heterogamy (marry-up or marry-down) person to marry inter-hukou as to hukou status and migration status respectively for both outcome variables in Figure 3.1. Neither plot indicates too much probability mass near 0 or 1, and the three estimated densities have most of their respective masses in regions where they overlap each other, which does not support that the overlap assumption is violated. Therefore we may proceed with the AIPW estimator.

## 3.4 Results

### 3.4.1 Logistic and OLS Estimations

Table 3.7 presents the marginal effects of the logit regression of female head and Table 3.8 shows the results of the OLS regression of female bargaining power. The first columns of both tables only include social distance in terms of hukou identity. Individual and household attributes are then added in the second and the third columns. When we look at Table 3.7, Column 1 tells us that the probability for the wife to be the household head increases if she marries a migrant husband as a local while decreases if she marries up as a migrant to a local or as a rural hukou holder to an urban hukou holder. Taking individual and household characteristics into account, the results in Column 2 and Column 3 show that local status wives who marry down (i.e. a local status wife to marry a migrant status husband) are more likely to be the household head whereas rural hukou wives who marry up (i.e. a rural status wife to marry an urban status husband) are less likely to be the household head. The results are robust.

What is interesting is that the significance of the hukou distance shrinks with the inclusion of controls. The reason could be that, by the survey year 2014, a series of hukou reforms are meant to eliminate the distinction between rural and urban hukou status. One milestone hukou reform announced in 2014 was to officially abort the rural and urban hukou division nationwide. However the distinction of migration status defined by hukou origin, local and migrant status, sustains. Each prefecture level government can set their own rules about hukou origin conversion and there is yet any uniform criteria to converse one's hukou origin in China (Song, 2014). Hence hukou-related discrimination gradually shifts from hukou status specific to migration status specific. This could explain why the social distance measured by migration status remains significant in determining one's intra-household bargaining power across perspectives. Having said that, whether the hukou status distance is highly correlated to the migration status distance and as a result captures influence of the latter raises doubt. We will discuss this in the robustness check. In short, the results show that hukou status distance and migration status distance tell different stories, even though not every narrative achieves

Table 3.7: Marginal Effects of Logistic Estimation on Female Head

	(1)	(2)	(3)
	Female Head	Female Head	Female Head
	b/se	b/se	b/se
Rural hukou marry-up	-0.0606 (0.022)***	-0.0559 (0.022)**	-0.0540 (0.022)**
Urban hukou marry-down	-0.0265 (0.031)	-0.0375 (0.032)	-0.0382 (0.033)
Migrant marry-up	-0.0829 (0.034)**	-0.0563 (0.039)	-0.0586 (0.039)
Local marrying down	0.1149 (0.039)***	0.1156 (0.044)***	0.1141 (0.044)***
Ethnic minority marrying majority		0.0527 (0.041)	0.0517 (0.041)
Ethnic majority marrying minority		0.0584 (0.044)	0.0575 (0.044)
Age gap		-0.0009 (0.002)	-0.0010 (0.002)
Age gap <sup>2</sup>		-0.0005 (0.000)**	-0.0005 (0.000)**
Wife better job (=1)		0.0772 (0.015)***	0.0717 (0.015)***
Wife higher education (=1)		0.1447 (0.014)***	0.1413 (0.014)***
Wife better health (=1)		-0.0028 (0.013)	-0.0034 (0.013)
Number of preschool child			0.0108 (0.013)
Family size			0.0591 (0.013)***
Family size <sup>2</sup>			-0.0064 (0.001)***
Province Fixed Effect	Yes	Yes	Yes
N	9568	8308	8308

Notes: The dependent variable is binary. Marry-up and marry-down are categorical variables; the reference group is the inter-hukou marriage. Robust standard errors in parenthesis.

Significance levels: \* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

statistical significance.

If we look into the individual attributes and household characteristics, we would find that a wife who has a higher occupational status or obtains more education is more likely to be the household head than the husband. Moreover, as the family size grows, the wife tends to be the household head, even though at a positive but diminishing likelihood. This could be a result of intra-family specialisation accordingly the traditional gender role that women should devote

more time to the household. Further discussions on this point would be unfolded in the next section.

In Table 3.8, the dependent variable is an aggregation of five binary questions scaled from 0 to 5 that represent the wife's intra-household bargaining power. Table 3.8 confirms our observation from Table 3.7 that migration status distance plays a larger role in determining intra-household bargaining power. If a wife has a local hukou and marries down to a migrant hukou husband, her expected "final say" power at home would increase by 0.6 event compared to what she would have in a same migration status marriage, holding all other variables constant. Therefore, a higher migration status the wife obtains relative to her husband, the more say she has over family decisions. Both tables present a similar outcomes in terms of the level of significance and consistent with Table 3.7.

### **3.4.2 Counterfactual Framework Results**

Table 3.9 presents the results estimated with the AIPW estimator. The potential outcome mean is an average of what the individual would obtain under each treatment level. The first column presents the results of the likelihood for females to be the household head. With other social distance and household characteristics controlled, an inter-hukou married female has 45% probability to be the household head, which is close to the sample statistics (45.3% in Table 3.1). However, a marry-up rural hukou female has 12.4 percentage points less likely to be the household head compared to inter-hukou married counterparts. Furthermore, in terms of the migration status, a marry-down local female has 22.1 percentage points more likely to be the household head. The second column presents the results as to the female's "final say" power. One can notice that a marry-down local female on average has more "final say" power compared to inter-hukou married females. Overall, this marry-down local female has a "final say" power over 2.48 out of 5 family events.

If we compare Table 3.9 to the third column of Table 3.7 and Table 3.8, one may notice that the magnitudes of the impact of hukou-related social distance are greater with AIPW estimators, which echos our expectation that the AIPW estimation may overstate the magnitude of the treatment effect. Therefore, we estimate the lower bound of the impact that a rural hukou

Table 3.8: OLS Estimation on Female Decision Making

	(1)	(2)	(3)
	Female Decision	Female Decision	Female Decision
	b/se	b/se	b/se
Rural hukou marry-up	-0.1340 (0.092)	-0.1320 (0.096)	-0.1322 (0.096)
Urban hukou marry-down	0.2721 (0.140)*	0.1780 (0.150)	0.1752 (0.151)
Migrant marry-up	-0.3157 (0.152)**	-0.2530 (0.179)	-0.2761 (0.179)
Local marry-down	0.5595 (0.177)***	0.6576 (0.195)***	0.6468 (0.195)***
Ethnic minority marrying majority		0.4647 (0.171)***	0.4681 (0.170)***
Ethnic majority marrying minority		-0.0959 (0.182)	-0.0927 (0.182)
Age gap		-0.0202 (0.010)**	-0.0202 (0.010)**
Age gap <sup>2</sup>		-0.0024 (0.001)***	-0.0024 (0.001)***
Wife better job (=1)		0.4617 (0.065)***	0.4413 (0.065)***
Wife higher education (=1)		0.5864 (0.061)***	0.5740 (0.061)***
Wife better health (=1)		0.0000 (0.053)	-0.0015 (0.053)
Number of preschool child			0.0808 (0.053)
Family size			0.0773 (0.043)*
Family size <sup>2</sup>			-0.0124 (0.004)***
Province Fixed Effect	Yes	Yes	Yes
N	8735	7554	7554

Notes: The dependent variable is scaled from 0-5. Marry-up and marry-down are categorical; the reference group is the inter-hukou marriage. Robust standard errors in parenthesis. Significance levels:

\* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

female marries up on her chance to be the household head as well as the upper bound of the impact that a local female marries down on her intra-household bargaining power in general.

To sum up, we have employed a simple cross-sectional analysis and a counterfactual framework to examine whether the wife's social distance with respect to the husband's would impact her intra-household bargaining power. With two outcome variables, the probability for the wife to be the household head and the aggregation of the wife's "final say" over family



Table 3.9: Average Treatment Effect Estimation With AIPW

	(1) Female Head b/se	(2) Female Decision b/se
Rural hukou marry-up	-0.1243 (0.051)**	-0.0704 (0.093)
Urban hukou marry-down	-0.0341 (0.093)	0.2752 (0.210)
Migrant marry-up	-0.0346 (0.139)	-0.1217 (0.321)
Local marry-down	0.2209 (0.117)*	0.7059 (0.162)***
Ethnic Distance	Yes	Yes
Age Match	Yes	Yes
Age Match <sup>2</sup>	Yes	Yes
Job Match	Yes	Yes
Education Match	Yes	Yes
Health Match	Yes	Yes
Preschool Children	Yes	Yes
Family Size	Yes	Yes
Family Size <sup>2</sup>	Yes	Yes
<i>Potential Outcome Mean</i>		
Same hukou status	0.4581 (0.025)***	1.7793 (0.121)***
Same migration status	0.4541 (0.025)***	1.7747 (0.123)***
N	8312	7556

Notes: Female head is binary while female decisions is scaled from 0-5. Marry-up and marry-down are categorical variables; the reference group is the inter-hukou marriage. Standard errors are clustered at provincial level in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

events, we find that the hukou-related social distance does affect the spouse's intra-household bargaining power. In this case, marry-down local wives (i.e. local status wives marry to migrant status husbands) have a larger chance to be the household head and are able to determine more family issues than inter-hukou married and married-up ones. Even though we only obtain a robust lower bound of such impact for marry-up rural hukou wives and an upper bound of that for marry-down local wives, we can draw a causal linkage between the hukou-related social distance and the intra-household bargaining power. The following session will discuss different scenarios for robustness check.

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## 3.5 Robustness Check

### 3.5.1 Specialisation

Doubts may arise in using the family decision making question as an indicator for women's bargaining power because it is challenging that all the questions capture the key events of interest (Doss, 2013). Moreover, they are unlikely to be equally persuasive as an indicator since "not all have the same consequential significance for women's lives (Kabeer, 1999)". This reveals that house tasks may signify various importance and implies a potential specialisation in terms of tasks between spouses. In this regard, the husband may delegate the responsibility of decision-making to the wife and this can hardly reflect the wife's "final say" power. For example, in a "traditional" household with a stay-at-home wife and a work-focused husband, childcare and making meals are most likely to be "the wife's responsibility". In reality, transfers from development programs to wives may increase children's nutrition, health and education attainment compared to transfers to men (Duflo, 2012), which could reflect a potential gendered specialisation within the household. The five questions adopted in this paper include one question on child education and four regarding family expenses and financial decisions, where one question may be gendered. Therefore we will break down the aggregation and investigate each question solely to see whether our results hold.

Table 3.10 shows the proportion of females and males to take responsibility in each event. As is mentioned above, chances are that in an extended family, other family member other than either party of the couple may take responsibility of certain family events. Between the two spouses, it is not surprising to see that females turn out a larger participation in child education decision making compared to other aspects which to some extent suggests the gender specialisation as discussed above, although only 45.2% females have a "final say" over child education, 9.6 percentage points less than males. Overall men still play a dominating role in decision making at home despite the subjects. In this case, women taking charge of family issues especially in events other than childcare may be a fair reflection of her power. Table 3.11 presents the results that regress each decision question on hukou-related social distance and controls. As a reminder, each question is a binary variable. It is ascribed as 1 if the wife

Table 3.10: Decision Making in Family Issues Statistics by Gender

Principle person charging	Female		Male		Female - Male Difference
	N	Percentage	N	Percentage	
Family expenses	7554	36.0%	7540	64.0%	-28.0%***
Family investment	7554	33.4%	7540	66.6%	-33.2%***
House purchase	7554	26.7%	7540	73.3%	-46.6%***
Child education	7554	45.2%	7540	54.8%	-9.60%***
Pricey products	7554	36.2%	7540	63.8%	-27.6%***

Table 3.11: Robustness Check Logistic Estimation

	Products b/se	Expenses b/se	Buy House b/se	Child Edu b/se	Investment b/se
Rural hukou marry-up	-0.0414 (0.023)*	-0.0376 (0.023)*	-0.0068 (0.021)	-0.0116 (0.024)	-0.0308 (0.022)
Urban hukou marry-down	-0.0071 (0.034)	0.0266 (0.034)	0.0572 (0.033)*	0.0355 (0.036)	0.0593 (0.034)*
Migrant marry-up	-0.0992 (0.039)**	-0.0555 (0.040)	-0.0215 (0.038)	-0.0409 (0.044)	-0.0345 (0.040)
Local marry-down	0.1145 (0.047)**	0.1541 (0.047)***	0.0898 (0.044)**	0.1399 (0.048)***	0.1467 (0.046)***
Ethnicity Distance	Yes	Yes	Yes	Yes	Yes
Age Match	Yes	Yes	Yes	Yes	Yes
Age Match <sup>2</sup>	Yes	Yes	Yes	Yes	Yes
Job Match	Yes	Yes	Yes	Yes	Yes
Education Match	Yes	Yes	Yes	Yes	Yes
Health Match	Yes	Yes	Yes	Yes	Yes
Preschool Children	Yes	Yes	Yes	Yes	Yes
Family Size	Yes	Yes	Yes	Yes	Yes
Family Size <sup>2</sup>	Yes	Yes	Yes	Yes	Yes
Province Fixed Effect	Yes	Yes	Yes	Yes	Yes
N	7550	7550	7552	7550	7550

Notes: The dependent variables are binary. Marry-up and marry-down are categorical; the reference group is the inter-hukou marriage. Robust standard errors in parenthesis. Significance levels:

\* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

is the principal person in charge of this event and 0 otherwise. Our results sustain: females that married down to migrant status husbands tend to have a higher chance to be decisive in family events about child education and family finance whilst their marrying-up counterparts are less likely to have a "final say" on these issues. This finding is consistent with our main results.

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### 3.5.2 Hukou Status Distance VS Migration Status Distance

Since we witness a rapid shift in significance in terms of hukou status distance in the main results, one may wonder whether it is because of the colinearity between the hukou status distance and migration status distance. In fact, hukou status and migration status stand for two different standards. Hukou status reflected one's occupation (agricultural or non-agricultural sector) and residence in a rural-urban division sense when it was initially introduced in 1950s. Individuals living in the rural areas at the time when the Hukou System was enforced were ascribed an agricultural hukou status, implying that they should work on agriculture; their urban counterparts were hence ascribed a non-agricultural status as they were expected to work in factories or other non-agricultural sectors. Such a system was reinforced via its inheritable nature and stringent rural-urban mobility restrictions. Later on, when the mobility restrictions eased overtime, hukou status can no longer accurately reflect the individual's occupation nor their current residence. It is more of an ascribed trait reflecting one's family origin. migration status on the contrary remains highly relevant to the individual's everyday life. It captures the correspondence between the individual's hukou registration locality (the prefecture where they register as the hukou origin) and the actual place of residence. One is considered a local person if they reside within the prefecture of their hukou origin but a migrant if they live outside the hukou origin. The migration status plays an increasingly essential role when hukou reforms decentralised hukou-related welfare and regulations to local governments in 1980s which means that one's social welfare is deeply bound to their hukou origin and a migration status can restrain one's benefits and rights in the recipient prefecture. With all said above, hukou status and migration status do not capture the same information. One may argue that a cross-hukou status marriage could be very likely a cross-migration status one, as the scale of internal migrants is large and account for 235 millions in 2014 (UNICEF, 2017). However, when we investigate the correlation between the hukou status match and migration status match in our sample, the correlation coefficient is only 0.18 indicating no evident correlation between the two matching types. Additionally, we regress the variables of interest on hukou status distance and migration status distance separately and altogether to have a straightforward comparison. Results are shown in Table 3.12. The first three columns

Table 3.12: Hukou Status Distance VS Migration Status Distance

	(1)	(2)	(3)	(4)	(5)	(6)
	b/se	Head b/se	b/se	b/se	Decision b/se	b/se
Rural hukou marry-up	-0.0494 (0.022)**		-0.0540 (0.022)**	-0.1883 (0.277)		-0.2839 (0.279)
Urban hukou marry-down	-0.0316 (0.032)		-0.0382 (0.033)	0.5135 (0.413)		0.3577 (0.417)
Migrant marry-up		-0.0684 (0.039)*	-0.0586 (0.039)		-0.5987 (0.505)	-0.5506 (0.507)
Local marry-down		0.0939 (0.044)**	0.1141 (0.044)***		1.6866 (0.523)***	1.7181 (0.529)***
Ethnicity Distance	Yes	Yes	Yes	Yes	Yes	Yes
Age Match	Yes	Yes	Yes	Yes	Yes	Yes
Age Match <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes
Job Match	Yes	Yes	Yes	Yes	Yes	Yes
Education Match	Yes	Yes	Yes	Yes	Yes	Yes
Health Match	Yes	Yes	Yes	Yes	Yes	Yes
Preschool Children	Yes	Yes	Yes	Yes	Yes	Yes
Family Size	Yes	Yes	Yes	Yes	Yes	Yes
Family Size <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes
Province Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
N	8312	8310	8308	7558	7556	7554

Notes: The head is a binary variable whereas the decision is scaled from 0-5. Marry-up and marry-down are categorical; the reference group is the inter-hukou marriage. Robust standard errors in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\* $p \leq 0.05$ , \*\*\* $p \leq 0.01$ .

are the results to regress the binary indicator of the female household head while Column 4-6 are for the censored variable of the decision making.

As is consistent to our main results, the significance of hukou status distance shrinks rapidly while that of migration status distance remains robust. Moreover, one can observe changes in the significance as well as the magnitude of the coefficients of the migration status distance before and after including hukou status distance, meaning the hukou status distance indicator is not omissible. Hence we include both hukou status distance and migration status distance in our main results and acknowledge that the hukou status distance loses significance in some cases.

### 3.5.3 Cohabitation with Parents

Another concern is that, couples especially migrant-local combination couples may cohabit with the local spouse's parent(s). In this case, parents could undertake the role of house-

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hold head or make decisions for the family. For instance, between a migrant-wife-and-local-husband couple who cohabit with the husband's parents, the fact that the wife does not undertake the role of a household head may not reflect the bargaining power dynamics between the husband and the wife with respect to the migration status related social distance. Rather, it could just be that a cohabiting parent is the household head. Hence we include the parental cohabitation indicators in our estimation and examine the changes. Table 3.13 presents the results where Column 1 and Column 3 show the regression for female household head whereas Column 2 and Column 4 present the results for female "final say" power. Column 1 and Column 2 show the baseline regression without parental cohabitation information while Column 3 and Column 4 are with this information. Although there is a drop in the significance of the *Local marry-down* indicator in Column 3 which could be from the drop in observations as is shown in Column 1, our main results hold: overall local status females are more likely to be the household head and exert more "final say" power over family issues no matter whether or not they cohabit with parents. Even though cohabiting with maternal parent does not empower the female to exhibit a higher intra-household bargaining power, cohabiting with either of the paternal parent does impede the female intra-household bargaining power. In particular, cohabiting with paternal fathers is more likely to decrease the likelihood for wives to be a household head or have more "final say" power over family issues, compared to that when cohabiting with paternal mothers. This is not surprising considering the patriarchy remains deeply entrenched in Chinese society.

### **3.6 Conclusion**

This paper uses data from the 2014 CFPS survey to examine whether hukou-related social distance affects household decision making. Two proxies are employed as outcomes of female intra-household bargaining - a latent variable indicating the female head of household and a censored variable accounting for the female bargaining power. Our results show that marrying-down wives are more likely to be the household head compared to intra-hukou married wives, while marrying-up wives have a correspondingly lower chance of being the household head. The same trends are observed for "final say" power, suggesting that a wife

Table 3.13: Cohabiting with Parents

	(1)	(2)	(3)	(4)
	Head	Decision	Head	Decision
	b/se	b/se	b/se	b/se
Rural hukou marry-up	-0.0404 (0.025)	-0.0662 (0.100)	-0.0442 (0.025)*	-0.0846 (0.100)
Urban hukou marry-down	-0.0177 (0.035)	0.2508 (0.151)*	-0.0163 (0.035)	0.2620 (0.151)*
Migrant marry-up	-0.0323 (0.050)	-0.1384 (0.216)	-0.0094 (0.052)	-0.0521 (0.216)
Local marry-down	0.0946 (0.052)*	0.6813 (0.216)***	0.0870 (0.053)*	0.6580 (0.216)***
Cohabiting with wife's father			-0.0443 (0.069)	-0.3675 (0.238)
Cohabiting with wife's mother			0.0738 (0.059)	0.3117 (0.221)
Cohabiting with wife's father-in-law			-0.0797 (0.024)***	-0.2864 (0.083)***
Cohabiting with wife's mother-in-law			-0.0479 (0.021)**	-0.2105 (0.077)***
Ethnicity Distance	Yes	Yes	Yes	Yes
Age Match	Yes	Yes	Yes	Yes
Age Match <sup>2</sup>	Yes	Yes	Yes	Yes
Job Match	Yes	Yes	Yes	Yes
Education Match	Yes	Yes	Yes	Yes
Health Match	Yes	Yes	Yes	Yes
Preschool Children	Yes	Yes	Yes	Yes
Family Size	Yes	Yes	Yes	Yes
Family Size <sup>2</sup>	Yes	Yes	Yes	Yes
Province Fixed Effect	Yes	Yes	Yes	Yes
N	6982	6880	6982	6880

*Notes:* The head is a binary variable whereas the decision is scaled from 0-5. Marry-up and marry-down are categorical; the reference group is the inter-hukou marriage. Cohabitation indicators are dummy variables. Robust standard errors in parenthesis. Significance levels: \* $p \leq 0.10$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ .

who holds a higher social status relative to her husband may strengthen her bargaining power in the household. The results stay robust after controlling socio-economic attributes of both spouses, household characteristics and the regional fixed effect.

Moreover, we notice that hukou status distance loses significance rapidly when individual attributes are introduced, whereas the migration status distance remains significant. This could reflect the lesser weight of hukou status in real life than that of migration status as a result of hukou reforms where the division between two hukou status is eliminated in 2014

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(the survey year) and the accentuated bonds between one's social welfare and their migration status (which restricts the locality where they may enjoy the welfare).

Here are some limitations about this paper: first, even though this paper use AIPW to draw a causality between hukou-related social distance and intra-household bargaining power, we do not account for all the endogeneity issues. Omitted variable issue may induce us to overestimate the effect. Therefore, we only obtain the lower bound of the impact for marry-up rural hukou females and the upper bound of the impact for marry-down local females. It would be interesting to test the findings with richer datasets. Second, only one source of information regarding the outcomes of household bargaining is available in the survey, which may only reflect the perception and bias of the respondent to the family questionnaire. Since the family questionnaire could be answered by multiple members, it is challenging to figure out who is the respondent to a particular part and hence the potential bias. Further research may be interesting to investigate the answers to the same set of questions from both spouses or all family members which may allow cross check and to identify the bias. Third, the possibility that one may converse their hukou status, migration status or both after the marriage is not taken into account due to limited information. We assume the individual keep the hukou and migration status constant throughout the marriage, which may lead to an underestimation of the proportion of hukou heterogamy, resulting in a downward bias in the absolute value of the impact. Moreover, we do not have the chance to inspect whether the change in hukou-related social distance within marriage would affect one's intra-household bargaining power. A more ideal setting would be to have hukou information before and after the marriage. Future research can look for datasets with such features and examine the dynamics.





# GENERAL CONCLUSION

## Summary

This dissertation presents the persistent relevance of the Hukou System in today's China from the perspective of social identity, remind policy makers how omnipresent and profound consequences a socially constructed identity can have on people which reproduces inequality, and call on constant attention and coherent government interventions to curb these effects.

The majority of economics literature about hukou focus on restrictions with labour mobility, discrimination as to resources allocation and labour market outcomes, and more recently the value of hukou and social assimilation (Zhigang and Shunfeng, 2006; Chen et al., 2019; He and Luo, 2020; Cai and Zimmermann, 2020; Sun and Wang, 2020; Alam and He, 2022), based on the fact that the welfare system in China has been bifurcated since the establishment of the Hukou System. Yet few discuss the subtle but profound influences of the Hukou System as imposing a socially defined identity on individuals and its economic consequences. This dissertation contributes to the debate by emphasising on the socio-psychological aspect of the hukou identity and link it to various economic outcomes: the first chapter tests whether the individuals have internalised the hukou and migration status and concludes that the related stigmas attached to the hukou identity do not disappear when the division itself has been eased, revealing the persistence of the social identity. The second chapter takes a step further to seek whether there exists a channel to overturn the gap in generalised social trust among different hukou holders. The third chapter innovatively combines the hukou literature with the intra-household bargaining, arguing that hukou-related social distance between spouses has an impact on women's intra-household bargaining outcomes even after considering the probability of different hukou matching.

Looking back, the history of the hukou system reveals how it is imposed on people and eventually internalised by people. Urban residents who are initially assigned with non-agricultural hukou status are entitled to comprehensive resources, while rural residents who are ascribed with agricultural hukou status are advocated to "rely on the collective... through production"

(Cheng and Selden, 1994; Wong, 2005; Gao et al., 2013; Song, 2014; Jensen, 2018; Zhang et al., 2019). An implicit hierarchy between the agricultural and non-agricultural status backed by a bifurcate welfare system was established - in general non-agricultural status is considered more valuable than agricultural status (Chen and Fan, 2016; Chen et al., 2019). Moreover, during the time when internal mobility especially rural-to-urban migration was strictly controlled, rural-to-urban migrants were addressed by the central government as "blind influx", not only associating them with a negative image but also implicitly condemning them to burden urban areas. Later regulators and measures involved detailed police scrutiny at transportation hubs or even road junctions to send ineligible migrants back to their hometowns (please refer to Table 6 in the General Introduction). As a consequence, internal migrants especially rural-to-urban migrants are highly stigmatised. As an institution assisting the labour allocation for the planned economy, hukou identity is inevitably attached to every registered citizen to claim their rights and benefits. Individuals are therefore stratified and grouped by ascribed and inherited hukou identities. Eventually, stereotypes attached to the hukou identity further shape an individual's self-perception and belief, which affects their behaviour in social interaction and economic activities. Among socially excluded agricultural hukou holders and internal migrants, a depleted self-image may be established and a sense of "undeservingness" may be nurtured (Steele and Aronson, 1995; Smith et al., 2008; Kongshøj, 2017; Jensen, 2018). Such social exclusion induces the underprivileged people to avoid remunerative activities (Akerlof and Kranton, 2000). Afridi et al. (2015) show that agricultural hukou pupils significantly underperformed with the salience of their hukou status whilst non-agricultural hukou pupils outperformed, suggesting the internalised hukou identity could widen the income gap between the two groups. Moreover, Long and Li (2016) provide evidence that rural residents in two villages in the coastal province Shandong reported to feel "unworthy of state (medical) care" as they see themselves as "peasants" that should be "self-resilient", and tend not to seek medical help from the state health system. On the contrary, the urban residents from two nearby cities see themselves as "citizens" and perceive the state medical system as their entitled "rights". This stereotype-performance conformity behaviour is also documented in the US and India (Steele and Aronson, 1995; Shih et al., 1999; Spencer et al., 1999; Hoff and Pandey, 2006, 2014).

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In this regard, Hukou System is more than a carrier of the stratified welfare system that to simply "abolish" or "abandon" the institution cannot eliminate let alone reversing its impacts. Chapter 1 investigates how hukou identity affects hukou-based perceived discrimination and finds that a hukou reform to cancel the hukou status division is unable to reverse such perceived discrimination. Instead, the reform may function as a priming technique to remind individuals with underprivileged hukou identities of their disadvantages and the related stigmas, especially for those who are not targeted by the reform.

As a sequel, Chapter 2 investigates whether the long-discriminated groups, i.e. rural hukou holders and rural residents, do exert less trust behaviour towards others according to [Alesina and La Ferrara \(2002\)](#)'s theory and whether education can be the channel to close the trust gap. Main results show that rural hukou holders and rural residents are less likely to trust yet such effect fades when the education attainment is included, indicating that education would be a mediator through which hukou identity makes a difference on the generalised social trust. When correcting the bias from education with a Cohort Difference-in-Difference and an Instrumental Variable approach, we find that rural hukou holders and rural residents do exhibit less trust while the effect of migration status is not significant. Meanwhile, education does not appear to be significant. The results again show how profound and subtle the impact of hukou identity has on individual behaviours and cannot be overturned easily.

Chapter 3 stands from the household perspective to investigate the role of hukou identity within a household decision making process. In this chapter, hukou identity is translated into social distance between two spouses. Chapter 3 focuses on two bargaining outcome variables from the female's aspect: household head and decision power. Main results reveal that females holding a relatively high status relative to their partners' are more likely to be the household head and exert decisive power over more family events. Here the relative high status is mainly driven by migration status rather than hukou status. This could be interpreted in the way that the disparities associated with hukou identity are shifting from the hukou status to migration status, especially with the latest hukou reform. Main results remain robust accounting for the potential family labour specialisation and cohabitation with parents, which further supports the correlation between hukou-related social distance and outcomes of intra-household

bargaining.

## **Limitations and Prospects**

This dissertation shows that a social identity cannot simply be "abolished" by a reform. Even policies to equalise the respective benefits and rights pertaining to hukou identities would not erase its implicit influences on the socio-psychological aspect, continuing to shape their self-images, perceptions and behaviour patterns.

There are limitations that can be amended once more data and new strategies are developed. Firstly, there are strong assumptions regarding the individuals' migration experience, previous and current place of residences and personal characteristics. For example, Chapter 1 assumes that individuals who were interviewed in the same province and within the same rural-urban divisional area live in the same prefecture across all the survey waves. This assumption is made because there was no information on which prefecture that one currently lives in from the second phase of the survey. In Chapter 2, it is assumed that individuals receive education in the interviewed provinces as there was no information regarding where the individual received education. Even the answers to the question "the place of residence at the age of 12" yield great missing values. This could also be a reason why the potential effect of the migration status cannot be captured in the estimation. In Chapter 3, even though the analysis has included the relative hukou status and migration status within couples, it does not distinguish whether the individual has the same hukou identity at the marriage time or they have conversed the status after the marriage due to lack of information. The estimation was still carried out on condition that: i. the data is retrieved from the year of 2014 when the major hukou reform to facilitate the hukou conversion procedure was launched not long before the survey was conducted; ii. the actual hukou conversion rate after the hukou reform remains low according to statistics in Chapter 1, which is probably a result of ongoing stringency of conversion criteria and municipalities that are targeted by this reform are of low attraction; iii. the mean age of the individuals in the dataset are around 48 years old, indicating the majority of the sample must have been married during the time when hukou conversion was strictly controlled; iv. with above three reasons, Chapter 3 assumes no hukou conversion after the

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marriage.

In terms of scope, it would be interesting to inspect how social assimilation (between internal migrants and locals, and between former rural hukou holders and former urban hukou holders) would influence the perceived discrimination and the level of generalised trust among the underprivileged groups. All three chapters implicitly stress that the impact of hukou identity has been shifting from the contrast between the agricultural and non-agricultural (rural and urban) hukou as largely documented by literature to the tension between the migrants and locals. The current and future hukou reforms shall focus on equalising the rights between migrants and locals. Hukou locality and the embodied regional disparities shall become the mainstream in hukou related studies.

To a different note, future research may extend to model whether affirmative action policies like the Indian caste case could help reverse the related stigmas. But at this moment, how China is actualising the clauses in the current reform, the responsibility between the central government and the local government and estimating and building the accommodating capacity of local governments are requiring attention. Hukou is absolutely not a past institution. Its discriminatory nature and shadowy consequences should ring the alarm for all the authorities to prevent it from happening in the first place. Economic development is important but even more so for the development of human, environment, biodiversity and other aspects. After all, humanity is an end itself, not a means to an end.



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