Legal Status, Gendered Preferences, and Intra-household Allocations: Evidence from a Restrictive Household Registration System

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Abstract

This paper uses China's household registration system, *hukou*, to study how legal statuses and gendered preferences shape intra-household allocations. The *hukou* system determines access to public services, including such aspects as which schools children can attend, and signals the strength of local social networks. Notably, this access often depends on the household head's status. So, couples may report the wife as the household head if she has better *hukou*. Moreover, an individual can often acquire their spouse's *hukou* status. Therefore, better *hukou* may increase an individual's bargaining power within a couple through either of these pathways. This unique context lets us explore how external policies and societal factors related to social status impact household decision-making. We begin by showing that *hukou* status affects an individual's contribution to household well-being. We then show reduced-form evidence that if the wife has better *hukou*, household consumption shifts towards goods that prior studies suggest are favored by wives. Armed with this suggestive evidence, we estimate a collective model of household consumption. We allow bargaining power to depend on the spouses' *hukou* statuses. We show that *hukou* status significantly influences bargaining power within families. Wives with more advantageous *hukou* display considerably more bargaining power than other wives, although still less than their husbands. We find notable differences in preferences between husbands and wives, particularly for goods linked to gender roles, such as alcohol, tobacco, and clothing.

Key words

Intra-household Allocations, Bargaining Power, *Hukou*, Gender Inequality

JEL Classification codes

J12, D13, J18, J16

1 Introduction

The *hukou* (household registration) policy in China creates an inherited status that affects access to social services and employment opportunities. By examining the differences in *hukou* status, primarily at marriage, between husbands and wives, we demonstrate that differential access to resources affects bargaining power within a couple. Holding income constant, households spend more on goods valued by the wife when her registration status is or was more advantageous at marriage than her husband's. Using a structural model, we estimate that the wife's bargaining weight increases by 0.07 if she provides the household's local-urban *hukou*, the most desirable status. Thus, we show that status under this migration policy, though not intended to affect the division of power within a household, serves as a marker for and, plausibly, a determinant of the division of consumption within the household.

The *hukou* system was designed to restrict migration within China. Thus, an individual can have *agricultural* or *non-agricultural hukou*, commonly called *rural* and *urban*. Furthermore, *hukou* is tied to a locality. Thus, a city's residents may have local urban, local rural, non-local urban, or non-local rural *hukou*. Residents with local *hukou* have access to benefits such as health care, education, government jobs, and unemployment insurance that are largely unavailable to those without local *hukou*. In addition, residents with local-urban *hukou* enjoy better resources than people with local rural *hukou* because the most favorable resources are located in urban areas (Song, 2014). Thus, individuals with local-urban *hukou* face a more favorable labor market, can enter better schools, and may be more attractive in the marriage market (Afridi et al., 2015). People with urban *hukou* benefit more from education reforms, fostering improved gender equality (Du et al., 2021). In addition, local-urban *hukou* signals that the individual has strong social ties in the local community. Such mutually beneficial connections, known as *guanxi*, play a crucial part in finding jobs and conducting business (Zhang, 2010). Evidence suggests that various social networks can improve women's involvement in household decision-making (Kandpal & Baylis, 2019).

Children born before 1998 received their mother's *hukou*. Since then, parents may choose to assign the father's *hukou* to their children (Hu, 2024). Individuals can change their *hukou* status under some conditions, most notably through marriage. The 2014 National New-Type Urbanization Plan, which expanded social benefits to rural *hukou* holders, made changing status easier. However, we use data from 2002-2006, predating the liberalization of *hukou* regulations. Additionally, most couples in our sample married before a child could inherit its father's *hukou* status. Thus, our sample falls within the restrictive era, offering more discernible effects of *hukou* status. We do not attempt to address the impact of evolving *hukou* policies, which remains an important topic for future research.

Hukou status can influence bargaining power in marriage through the initial 'contract' and its ongoing connection to social benefits. For example, if only one spouse—say, the wife—has local urban *hukou*

before marriage, she brings significant value in terms of access to social benefits. This initial contribution may continue to affect bargaining power, even if the husband later acquires local urban *hukou* through the marriage. If the husband cannot obtain local urban *hukou*, the wife retains greater access to resources. In both cases, her social connections or *guanxi* are also likely to be more valuable. To simplify the exposition, we generally refer to *hukou* as affecting bargaining power. The reader should recognize that *hukou* is a marker for a set of factors affecting bargaining power.

Thus, a wife with local-urban *hukou* is valuable because she passes on this valuable status to her children, allowing them to access better jobs and social services as adults. In addition, she provides them with access to better social services as children, most notably education and health care. Even among wives with local-urban *huskou*, some will be particularly valuable because their *hukou* affords access to the best schools. While our data do not provide this level of detail, it is likely that when both husband and wife have local-urban *hukou*, but she is registered as the household head, her *hukou* provides the children with access to better schools.

Meanwhile, existing evidence suggests that women in China traditionally possess limited bargaining power, a reality reflected in household spending patterns, child-rearing practices, and the profound influence of social norms on their status within the household (Li & Wu, 2011). Thus, we anticipate that pivotal factors such as *hukou* will be both a determinant of and an indicator of factors affecting bargaining power within the family.

Hukou policy offers a valuable test of the theory proposed by Chiappori (1988, 1992) that external policies affect each spouse's weight in the household's collective utility function. We first confirm that her *hukou* status affects the resources the wife brings to the household. Thus, we show that the wife's social insurance expenditure, a measure of the resources she brings to the household, is higher when she has the better *hukou*. We then show that if she has better *hukou*, the household spends more on clothing, education and entertainment (unfortunately not separated in the data), and, perhaps, home improvement, and less on alcohol and tobacco, consistent with her having more influence over the allocation of consumption.

We then develop a version of the collective model of the household (e.g., Chiappori (1992); Lise & Seitz (2011)). The collective model posits that households pool their incomes, but their members have different preferences over consumption. Households maximize a weighted sum of the spouses' utilities. These Pareto weights capture their relative bargaining power (Quisumbing et al., 2000).

We allow the weights to depend on the husband's and wife's *hukou* statuses and who brought the more desirable *hukou* type to the family. Because husbands and wives have different preferences over consumption, we can derive their relative bargaining power by observing which (categories of) goods the household consumes. We add to the literature by identifying bargaining power in a model with only household-level data on consumption and individual labor supply. We draw on the structures in Mazzocco (2007), Cherchye

et al. (2012), Yamaguchi et al. (2014), and Lise & Yamada (2019). Following Blundell et al. (2005) and Lise & Yamada (2019), we also introduce home production, which we assumed uses the wife's nonworking time.

One key advantage of using a collective model to discuss the impact of social policies on intra-household bargaining is that it can mitigate some significant endogeneity concerns. First, in egoistic settings and Nash bargaining models, there is often a process of matching and rematching between spouses. Early collective literature highlights the benefits of the collective model by relying on the Pareto efficiency assumption. This assumption posits that the matching between spouses results from Pareto efficiency, yielding outcomes similar to those in neoclassical models (Chiappori, 1988). As a result, the collective model does not emphasize the matching and rematching process. Instead, it argues that under the rationality assumption, the outcomes of intra-household bargaining remain consistent when based on Pareto optimal states.

The general-equilibrium approach recognizes that members' outside options and the efficient outcomes selected by the household also encompass the matching process through which the household is formed (Chiappori & Mazzocco, 2017).[1] Additionally, recent studies (Choo & Siow, 2006; Galichon & Salanié, 2017; Chiappori & Mazzocco, 2017) have sought to explore the intra-household impacts of matching, especially under frictionless conditions. However, the literature remains inconclusive on whether matching affects the Pareto optimality of post-combination bargaining. For the sake of brevity, we focus solely on intra-household bargaining after the couple has been formed. We assume imperfect matching exists and that spouses may adjust their post-matching behaviors (Mazzocco et al., 2014). However, this does not affect our analysis of factors influencing post-matching intra-household bargaining.

Consistent with, but somewhat lower than, findings in advanced economies, the wife's bargaining weight averages $.34 - .35$, depending on the specification. Providing the more desirable *hukou* increases this weight by $.07$. This pattern is confirmed when we use a more detailed classification of *hukou* statuses. We also confirm the importance of social connections; an extra year spent in the household's location adds $.2$ percentage points to her bargaining weight.

As required for the identification of bargaining weights, we find that husbands and wives have notably different preferences regarding consumption. The women strongly prefer spending on clothing, entertainment and education, and food, while men put more weight on alcohol and tobacco, home improvement, and transportation and utilities.

Prior research shows that before 1998, the *hukou* system increased the demand for wives with local-urban *hukou* (Han et al., 2015). We complement this literature by showing that it also increased their bargaining power within marriage, whether by allowing them to set advantageous ground rules before marriage

[1] For a more comprehensive discussion, interested readers should refer to Browning et al. (2014), chapter 7, and Chiappori & Mazzocco (2017).

or directly affecting bargaining after marriage.

We are not the first to recognize that external forces, commonly called "distribution factors,"[2] such as sex ratios (Bobonis, 2009; Chiappori et al., 2002), social programs like PROGRESA (Bobonis, 2009; Attanasio & Lechene, 2002, 2014), and cash transfers (Casco, 2023) can affect power within marriage. However, the pervasiveness of the *hukou* system in China, coupled with its imposition on individuals from birth, makes it particularly interesting.

The literature closest to this paper examines the effect of divorce laws on bargaining. Chiappori et al. (2002) treat divorce laws and prevailing sex ratios as distribution factors affecting bargaining power. They find large effects on labor supply through the relation between bargaining power and the laws and sex ratios. Mazzocco (2007) shows that divorce laws interact with imperfect commitment at marriage to alter bargaining power. Voena (2015) finds that unilateral divorce laws increased the bargaining power of wives with low power. Like them, we examine how policy affects bargaining power, but unlike them, we do so concerning a policy that was not designed to affect property rights within marriage.

Reynoso (2024) shows that the adoption of unilateral divorce laws can change who marries whom, even in the context of a collective model (see also Fernández & Wong (2014) and Lafortune & Low (2023)). Her analysis is consistent with the efficient allocation of consumption given who marries whom. Thus, we acknowledge that the *hukou* system probably affects marital matching, but our analysis takes the matching as given. This limits our ability to reach broader conclusions about how the abolition of the *hukou* system would affect marriage outcomes.

2 Empirical applications of the collective model

The collective model is highly versatile. It permits researchers to consider full commitment (bargaining power is set up on marriage) (Mazzocco, 2007; Theloudis et al., 2023), no commitment (bargaining power is determined each period) (Lise & Yamada, 2019), or limited commitment. We do not take a strong stand on this issue. As is common in this literature, we focus on post-marriage intra-household bargaining. We do not address whether the policy affects matching and marriage.

When a wife has better *hukou* than her husband, her increased bargaining power could reflect a favorable initial or ongoing negotiation. When they have similar *hukou*, but she is the household head, she is likely to have brought in the better *hukou* and to have made a better deal initially. She may also have better local *hukou* or social connections. Moreover, if the husband has not upgraded his *hukou* through marriage, his *hukou* may revert to its prior state following a divorce. If *hukou* status affects threat points, the collective

[2] We focus on a model in which the threat point does not directly affect the bargaining outcome. McElroy (1990) refers to the related concept of "extrahousehold-environmental parameters" that shift threat points in a model with Nash bargaining.

model will capture the effect through the bargaining power estimates.

One key advantage of the collective model is that it eliminates the need to fully specify the parties' outside options or threat points. It can capture some of the same elements as alternative non-cooperative bargaining models (e.g., Lundberg & Pollak (1993)) and many cooperative models (e.g., Manser & Brown (1980); Manser & Brown (1980); McElroy & Horney (1981)). For example, if having good *hukou* improves the wife's outside option, we will capture this by a higher weight on her bargaining power.

As is generally true in cooperative and some noncooperative bargaining models, the collective model ensures that household decisions consistently lead to Pareto-optimal outcomes. The model captures the result of the intra-household bargaining process where the household lands on the Pareto frontier. Their estimated relative bargaining power captures the extent to which this outcome favors a spouse.

This framework has been used widely. For instance, Chiappori et al. (2002) theoretically and empirically examines the impact of marriage markets and divorce legislation on household labor supply using a static collective model. Blundell et al. (2005) develops and estimates a static collective labor supply framework that accounts for censoring and nonparticipation in employment. Donni (2004) demonstrates the identifiability and estimability of different aspects of a static collective model. Vermeulen (2005) highlights the advantages of collective models in estimating preferences and the intra-household allocation process using Dutch microdata. Browning & Gørtz (2012) explores the interaction between time allocation and expenditure within households. Cherchye et al. (2012) extends the model to include the consumption of domestic goods, focusing on couples with children in the Dutch context.

Our work is most closely related to papers exploring the factors that affect bargaining power and, in turn, intra-household allocations. Duflo & Udry (2004) investigates resource allocation and insurance within households using data from Côte d'Ivoire. Blundell et al. (2007) estimates results for the collective model of labor supply, considering discrete choices, hour censoring, and non-participation in employment, particularly in response to significant wage changes in the U.K. Lise & Seitz (2011) employs a collective model of household behavior to explore how the increase in marital sorting by wages and working hours can explain consumption inequality in the U.K. Lise & Yamada (2019) utilizes panel data and a dynamic collective model to assess how limited commitment influences intra-household allocations.

One major contribution of our paper is to examine the effect of a factor that is likely to affect bargaining power yet remains relatively exogenous in shaping post-marriage intra-household decision-making. However, when discussing the impact of external factors, the literature sometimes treats variables such as wages (e.g., Browning & Gørtz (2012); Lise & Yamada (2019)) and employment (e.g., Blundell et al. (2007)) that may be outcomes of bargaining as determinants of bargaining power. This connection raises endogeneity concerns. Therefore, in this paper, we exclude any factors directly tied to budget constraints from the bargaining power equation.

3 The *hukou* system, social networks, and their impacts

Hukou is a household registration system based primarily on characteristics determined at birth by the parents' registration status. It plays a significant role in China's social, political, and economic life. The city, county, and sub-county where the individual is registered determine access to certain benefits.

These terms are somewhat misleading if used in the sense of North America or Europe. China is comprised of 685 cities covering essentially the entire country (2022 data). The average city is 5,293 square miles, a little smaller than Connecticut. The average population is about two million, making it somewhat less dense than Connecticut. China has 2,851 county-level divisions (1,355 counties), roughly four counties per city, and, therefore, with an average population about equal to that of the average county in Connecticut. In sum, if we think of Connecticut as comprised of four counties instead of eight, each of which is somewhat less densely populated than Connecticut, we have an average Chinese city. Within each county, an individual's *hukou* may be associated with a rural or urban area.

Formally, Chinese citizens have either "agricultural" or "non-agricultural," more commonly called rural or urban, *hukou*. At the start of our study period, four provinces had partially canceled the use of the terms agricultural and non-agricultural. However, residents must register at their birthplace, whether urban or rural, consistent with their parents' *hukou* location. Fundamentally, the welfare system remains unchanged (Wang et al., 2021). Therefore, each locality has local residents with urban *hukou*, local residents with rural *hukou*, non-local residents with urban *hukou*, and non-local residents with rural *hukou*.

The local government determines the social welfare benefits and opportunities available to individuals with each type of *hukou*. Typically, non-local residents have limited, if any, access to local government resources. Only local-urban residents benefit from high-quality resources because the most desirable resources (e.g., low-price public housing, top public schools, and favored university admissions) are located in urban areas (Song, 2014; Wang et al., 2021). Similarly, local governments and state-owned enterprises favor residents with local *hukou* when hiring. These jobs are usually stable and provide comprehensive social insurance. In principle, although other employers must participate in the social insurance system and cover employed migrants, enforcement remains very weak (Song, 2014). The specific benefits associated with *hukou* vary by province, city, and over time. Despite differences in the implementation of social benefits, there are consistent general trends. Table A1 in the appendix lists the general benefits restricted by *hukou* types as a reference for readers unfamiliar with the system.

Some aspects of *hukou* are determined by the city. Consequently, the rights and benefits associated with it can differ significantly from one city to another. Workers are typically eligible for employment at a state-owned enterprise anywhere in the city where they have *hukou* (Wang et al., 2021). However, they may be able to purchase housing or access low-price public housing only in the county where their *hukou* is

located. The schools their children attend or the medical services they are entitled to may depend on where their *hukou* is within their county.

Hukou is assigned at birth. Before 1998, a child received its mother's *hukou.* Almost all couples in our data married during this period. Subsequently, parents may choose either parent's *hukou* (State Council of the People's Republic of China [1998] Order No.24). Since the 1990s, changing *hukou* has been possible. Still, until recently, local governments generally limited such switches to highly skilled and highly educated workers. Low-skilled migrant workers, unable to switch their *hukou*, face discrimination in formal jobs offering social protection (Gagnon et al., 2011).

Chinese households have a formal head registered with the local government. Traditionally, the husband is the head. However, if only the wife has local-urban *hukou,* registering the wife as the head is advantageous. Even if both have local-urban *hukou*, hers may be in a better school district. Wives who owned the house before marriage may also be designated as the head.[3] In contrast, if they have the same *hukou*, the choice of the head is unimportant, and typically they choose the husband.

After marriage, one spouse may acquire the other's *hukou* as a dependent (Regulations on Household Registration of the People's Republic of China, Chapter 19). Generally, they will choose the more lucrative, local-urban *hukou*, if possible. The waiting period varies across localities and can be ten years in large cities like Beijing and Shanghai. In addition, there may be an age restriction, such as requiring the spouse changing status to be at least 45 years old. Some localities allow migrant spouses to enjoy rights similar to their partners' rights during the waiting period. Despite the low divorce rate in China, which was recorded at 0.96 per 1,000 population in 2000 according to the China Statistical Yearbook, when divorce occurs, the departing spouse has the option to retain their *hukou* status, revert to their original place of registration, or relocate to their new spouse's registered location (Regulations on Household Registration of the People's Republic of China, Chapter 10 and 19).

Once a spouse fully acquires *hukou* through marriage, they are entitled to retain it even after divorce. According to the same regulations governing *hukou* transfer and acquisition after marriage (Chapters 10 and 19), spouses may choose to keep their *hukou* in their former family location, transfer it back to their natal family, or move it to a public organization in the current city, subject to the specific rules of each locality. However, if a spouse holds *hukou* as a dependent for benefits but has not acquired local *hukou* independently, they may face restrictions in retaining it after divorce. When the husband or wife relocates from the former family home, they are likely to transfer their *hukou* to their new location to access associated

[3]Typically, everyone at the same address and, thus, in the same household shares a common *hukou*, which is generally the registered head's *hukou*. However, this *hukou* is often not associated with the head's current address. For example, everyone in the household might have *hukou* associated with a different county in the city or rural rather than urban *hukou*. Thus, a marriage always involves a transfer of *hukou*, which can be intra-city, inter-city, intra-province, etc. Wu & Zhang (2018) provides evidence that a household tends to register the wife as the head if she is the homeowner, especially when they also have school-age children.

benefits.

In addition to the direct benefits, Chinese society places significant emphasis on personalized social networks known as *guanxi*. *Guanxi* can be seen as a specialized local network system of social and influential relationships that facilitate business and personal interactions through mutual trust, reciprocity, and loyalty. Local-urban *hukou* is a natural indicator of strong *guanxi* in the locality. A son or daughter-in-law with strong *guanxi* can help expand the family's network. Parents frequently involve themselves in marriage and post-wedding decisions, expect the new family member to provide benefits, and exert intense mental pressure on the newcomer to do so (Huang et al., 2012). Hence, people prefer a spouse with local-urban *hukou*. Even if both partners have local-urban *hukou*, the one who had local-urban *hukou* earlier should have more social connections.

4 Data and descriptive statistics

The data come from the Urban Household Survey in China (UHS, National Bureau of Statistics of China, 2002-2006), which includes data from 31 provinces collected annually from 2002 to 2009 by the National Bureau of Statistics of China. The UHS gathered basic information such as gender, education, occupation, income, and social insurance and tax expenditures for each household member. It also includes household-level information on income and living conditions. Additionally, a submodule was conducted to collect household consumption information. The UHS offers several advantages over other household or family surveys. First, the sample is large. Second, it provides comprehensive information for both spouses, including complete *hukou* data. Third, it includes a broader range of classifications for consumption and financial usage than other surveys.

The consumption module categorizes expenses into nine distinct groups: (1) alcohol and tobacco, (2) clothing, (3) household supplies, (4) medical expenses, (5) transportation and utilities, (6) entertainment and education, (7) rent or housing loans, (8) miscellaneous, and (9) food consumed at home. The survey originally organized these expenses into eight overarching categories, with food further divided into two components: recreational expenses (e.g., alcohol and tobacco) and general expenses (e.g., food consumed at home). Notably, dining-out expenditures are excluded from the food category and are instead included under miscellaneous.

Each category represents items grouped by similar spending patterns to ensure internal consistency within the groups. Compound categories such as (5) transportation and utilities and (6) entertainment and education are directly sourced from the survey. Within category (6), "entertainment" focuses on activities that support personal and family development, distinct from recreational activities, which are classified under miscellaneous.

The comprehensive consumption data offers rich insights, allowing further exploration into specific items, such as clothing for men, women, and children. However, delving into more detailed subcategories leads to a noticeable increase in missing data.

We focus on data from 2006 and earlier, as the labor force questions were discontinued after that year. On the positive side, this precedes any major *hukou* reforms, especially the point-based system introduced in 2011 and the National New-Type Urbanization Plan in 2014. We use the subsample that includes comprehensive demographic, labor market, and consumption information. One-third of the sample was replaced each year. Therefore, households are in our sample for up to three years but an average of two.

The survey was designed to uncover the dynamics of demographic, employment, income, education, consumption, cash holding, and residence of urban households in China. Households were determined based on the *hukou* structure, with a household head and dependents. Over 95% of households consist of only the head, their spouse, and any children. To the best of our knowledge, the UHS data provides the most comprehensive classification of consumption data for Chinese households, essential for estimating the connection between bargaining power and intra-household resource allocations.

We restrict the sample to married-couple households and drop those in which at least one spouse has reached retirement age (men > 60, or women > 55 or > 50, depending on occupation types) and those with less than 500 CNY annual income. Our final sample consists of 29,023 households, selected based on the availability of complete demographic and consumption information. Measures reported in yuan are adjusted based on the CPI in the province/year where the household is located. The year 2000 serves as the time baseline.

4.1 *Hukou* measures

We have the following *hukou*/household head combinations:

1. Wife **reported as** household head
    (a) both spouses have local-urban *hukou* (8,263 households)
    (b) wife, but not husband, has local-urban *hukou* (84 households)
    (c) husband, but not wife, has local-urban *hukou* (32 households)
    (d) neither spouse has local-urban *hukou* (69 households)
2. Husband **reported as** household head
    (a) both spouses have local-urban *hukou* (19,699 households)
    (b) wife, but not husband, has local-urban *hukou* (87 households)

(c) husband, but not wife, has local-urban *hukou* (349 households)

(d) neither spouse has local-urban *hukou* (440 households)

Unfortunately, we lack data on transitions of *hukou* status during the marriage. This means we cannot confirm whether individuals with the same *hukou* type, as seen in the two (a) cases above, had identical or distinct *hukou* types when they married. In other words, some sample members may have acquired their current *hukou* statuses through their marital partners. This acquisition might be reflected in who is registered as the household head. Due to the patriarchy in China, males tend to be the household head. However, females with social or economic advantages can also be registered as the head (Hu, 2024). This provides us with a strategy to combine these two aspects to proxy whether a *hukou* transition occurred in the family. When we observe them, both spouses hold local-urban *hukou* in 98% of households where the wife is the household head. We infer that in such cases, either only the wife had local-urban *hukou*, or she had a form of local-urban *hukou* that was more favorable in social welfare and benefits than her husbands'. When only the wife has local-urban *hukou*, she is listed as the household head roughly half the time. In contrast, when only the husband has this good *hukou*, he is the head over 90% of the time.

Undoubtedly, we miss some cases where the wife contributed the better *hukou*, but the husband was still recorded as the head.[4] The 32 cases where the husband has better *hukou* but the wife is listed as the head are surprising. We surmise that she may have owned the house before marriage.

Alternatively, we apply a more stringent set of criteria to assess initial *hukou* strength. This approach aims not only to more accurately differentiate the *hukou* types of the spouses, but also to capture the variations in social benefits they can access and the resulting impacts within the family. However, it is important to note that both classification methods aim to distinguish the effects of various *hukou* types and their combinations, rather than to replicate the original *hukou* categories precisely.

- Group A (*wife brought in hukou*): wife is the designated head and has local-urban *hukou* and either a) settled in the locality before her husband or was born locally *or* b) the husband does not have local-urban *hukou*. While we think of this variable as primarily identifying who brought the family good *hukou*, it also indicates that the wife is likely to have a stronger social network. (6,701 households)
- Group B: wife is not designated as head, but only she has local-urban *hukou*. (102 households)
- Group C: wife is not designated as head, and both have local-urban *hukou*. (21,130 households)
- Group D: neither has local-urban *hukou*. (509 households)

[4] We cannot observe and may, therefore, miss some cases where the head is switched later in marriage. However, anecdotal experience from *hukou* offices suggests that, while permitted, such changes are very rare.

- Group E: only husband has local-urban *hukou*. (381 households)

We expect that bringing in local-urban *hukou* or higher-status *hukou* is associated with wives having more power in families. Thus, we expect wives to have their greatest bargaining power when they are in type-A or B households. She should have more power in type-C households than D and the least power in type-E households. We expect the wife's power to be highest when either she brought local-urban *hukou* to the household or she has local-urban *hukou* and her husband does not and to be lowest when he, but not she, has the good *hukou*. It is not obvious how to rank the cases where we have no evidence that she brought in local-urban *hukou* but both have it and when neither has it.

To increase statistical power in our estimates, we collapse these five categories into three, treating all cases where the wife does not have local-urban *hukou* together, regardless of the husband's status. We still treat Group A as a single case (6,701 households). We combine Groups B and C (21,232 households) and Groups D and E (827 households). The rankings according to different classifications are visualized below.

Group:	Wife local-urban hukou	Wife household head	Wife local advantage	Husband local-urban hukou
Classification 1				
A	✓	✓	✓	
B	✓	×		×
C	✓	×		✓
D	×			×
E	×			✓
Classification 2				
1	✓	✓	✓	
2	✓	×		
3	×			

Additionally, our detailed classification of *hukou*-related variables allows us to examine various aspects of its influence on people's lives. In the first classification group, the household head indicator reflects an individual's overall *hukou* advantage, while variables such as locality and urban vs. non-urban types emphasize regional differences in benefits tied to *hukou* status. We can capture within-family differences by examining habituation-related variables for both spouses together. In the second classification group, by focusing on which spouse brings in a more advantageous *hukou*, we can determine if one partner has a greater, lesser, or equal advantage in terms of social benefits.

4.2 Summary statistics

Table 1 presents means and standard deviations of individual and household characteristics. Mean household income is $32,145$ CNY. Husbands earn 51% more, on average, than wives. Salary accounts for 80% of wives' incomes and 90% of husbands'. About one-fourth of non-salary income is not assigned to either

spouse. 70% of families have two earners, consistent with the high labor-force participation rate among women in China.

Measuring incomes from the expenditure side shows that consumption plus savings and investment is $31,031$ CNY, of which consumption accounts for 74%. The table shows the consumption divided into nine categories.

[Insert Table 1 here]

29% of households register the wife as the head, presumably most frequently because the wife had better *hukou* than her husband. Although almost the entire sample had local-urban *hukou* when interviewed, it is possible many obtained it through marriage or work. Only 63% of wives and 60% of husbands were born locally; not all of these would have received local-urban *hukou* at birth.[5] 24% of wives and 35% of husbands have a college degree or above, which would also facilitate acquiring a more desirable form of *hukou*.[6]

The average household size is 2.94 people. On average, wives are less than two years younger than their husbands and have reached an age at which fertility is likely to be complete. Of course, some are sufficiently young to have more children, and others sufficiently old that the children have left home. Our lack of information on some children and their plans to have children is unfortunate. As we have noted, local-urban *hukou's* benefits to children may be an important contributor to bargaining power. It would be useful to know whether *hukou* status affects couples differently depending on whether they expected to have children when they married.

5 *Hukou* affects bargaining power: Reduced-form evidence

Better *hukou* could enhance a spouse's power by providing access to better jobs. In the Chinese context, better jobs are better paid and provide access to better and more social benefits such as health insurance and subsidized housing.[7]

[5] See conclusions in Johnson (2003) and Han et al. (2015).

[6] "College degree" is defined broadly to include full-time college and vocational institute education. The proportions of students attending colleges and vocational institutes after graduating high school are roughly equal. A college or vocational institute degree is usually required to take a comparatively advanced civil servant job, generally regarded as the most stable occupation in China. Local governments reserve most of the positions for local residents.

[7] The social insurance program in China includes five different kinds of insurance and one housing provident fund program. The housing provident fund allows individuals to voluntarily deposit part of their salaries towards purchasing their first home. It doubles their total deposits as a part of the payment (akin to a 401K with a government match in the United States but not just for retirement).

We have no direct measure of these social benefits. Still, we can observe the proportion of the household's expenditure on social insurance contributed by the wife, a proxy for a combination of the income she brings to the household and the additional social benefit. The literature often treats relative income as a determinant of bargaining power (e.g., Mazzocco (2007) and Cherchye et al. (2012)), but the exogeneity of relative income is questionable. Here, we simply show that *hukou* status is associated with the direct material benefits each party brings to the household. We and others surmise that having more ability to bring material benefits to the household increases bargaining power. Finding that *hukou* affects this ability and bargaining power would support this view.

[Insert Table 2 here]

Table 2 shows the results of regressing her share of social insurance payments on measures of *hukou* status, number of children, age group dummies in ten-year intervals, time dummies, and province dummies. The first column measures *hukou* only by the dummy for group A, "Wife brought in *hukou*." It is associated with a sixteen percentage point increase in her share and is significant at all conventional levels.

The third column controls for whether the individuals hold a government job or position in a state-owned enterprise (nearly half the sample), which typically only hires people with local *hukou*. In a sense, this constitutes over-controlling since the spouses' ability to get these jobs is one of the ways that *hukou* status affects power. However, it is helpful to know whether this is the only mechanism. If so, we would probably prefer to use employment status rather than *hukou* status as a determinant of power. As expected, adding these controls somewhat lowers the coefficient. Importantly, it remains highly significant.

Columns (2) and (4) repeat the specifications in columns (1) and (3) but include more detailed measures of *hukou* status. As expected, "Wife brought in local-urban *hukou* " continues to be associated with a large increase in her share of payments relative to the case where both spouses have it, but she cannot be shown to have brought it in. There is also a large positive association between only her having the status and her contribution, although it loses significance when we control for the spouses' occupations. Also, as expected, she accounts for a substantially lower proportion of their social security contributions when only he has local-urban *hukou* compared with the case where neither has it.

The last two columns look at the relation between social security contributions and years lived in the locality. The latter is associated with *hukou* quality and who brought it to the household. It is also related to *guanxi*. Sociologists often use the duration of an individual's interactions with others as an admittedly imperfect proxy for the strength of social ties (Marsden & Campbell, 1984), a concept similar to *guanxi*.

The coefficients on the wife's and husband's years in the locality are roughly equal and of opposite

signs, indicating that each year difference in time since settling in the locality is associated with a three percentage point difference in her share. The coefficients are between one-sixth and one-eighth of the effect of the wife bringing in the better *hukou*.

Having established that our measures are related to the spouses' contributions to the household, in Table 3, we examine their relation to shares spent on alcohol and tobacco, clothing, home improvement, and entertainment and education. Anderson & Baland (2002), Attanasio & Lechene (2002), Bobonis (2009), Doepke & Tertilt (2011), and Attanasio & Lechene (2014) all show that empowering wives increases spending on items such as clothing (women's clothing), education and savings and decreases spending on items such as alcohol and tobacco, which are often men's private goods. We confirm these findings when we estimate a structural model.

As expected, if the wife brings the household local-urban *hukou*, the share of household spending on alcohol and tobacco falls by a statistically significant $0.5pp$ on a base of 2.3%. We find less clear evidence when we use narrow *hukou* categories. Spending on alcohol and tobacco is lowest when the wife brings in *hukou* or she has local-urban *hukou*, and he does not. However, the household does not spend more on these products when only he has local-urban *hukou* than when neither has it.

[Insert Table 3 here]

Similarly, as expected, the share of household expenditure on clothing is highest when she brought local-urban *hukou* to the household. Still, the gap between the cases where only she has good *hukou* and both do is small, and there is no significant difference between the cases where only he and neither has local-urban *hukou*.

We do not find strong evidence of a *hukou* effect on home improvement, possibly because spouses' preferences differ little. However, we do see an effect on education and entertainment. Although we find an effect when using only a binary *hukou* measure, this effect is driven by the difference between households in which at least one spouse has local-urban *hukou* and those in which neither spouse does and may, therefore, merely reflect access to education.

Attanasio & Lechene (2002) and Doepke & Tertilt (2011) use spending on different clothing categories to test whether the PROGRESA program increased wives' bargaining power. Similarly, Browning et al. (1994) identifies a structural unitary model by assuming that husbands and wives consume only their own clothes and not their spouse's. While we do not believe that spouses do not derive utility from each other's clothes, it seems intuitive that each spouse cares more about their own clothes. Therefore, in Table A2, we drill down further.

The pattern in the table fits our expectations regarding expenditure on husband's and wife's clothing. *Hukou* combinations that should give her greater power result in more spending on the wife's clothing and less on her husband's. The evidence on children's clothing is less consistent with our expectations, showing little relation to expected bargaining power.

The critical identifying assumption underlying these estimates is whether the wife is the head or, more generally, her relative *hukou* status is unrelated to her or her husband's tastes for specific categories of goods. If, for example, men who marry women who become the household head have an unusual desire to have well-dressed wives (or similar differences in tastes for other categories), we will be mistaken in treating the results in Table 3 and Table A2 as causal.

Another important point to consider is the role of children in influencing intra-household bargaining. The existing literature generally assumes children do not directly affect the Pareto weights, which are typically linked to earning abilities (Blundell et al., 2005; Cherchye et al., 2012). We depart from this tradition and include the presence of children in our regression analysis. As noted in the institutional background, children benefit from their parents' advantageous *hukou*.

Given this context, we ask whether the presence of children interacts with *hukou* type to influence consumption. We do not find important interaction effects (see the second part of Appendix A.2). This suggests that conditions at marriage largely influence bargaining weights and that currently having a child in the house is a poor proxy for planning to have children at marriage. Of course, it is also possible that the impact on children is less important for bargaining power than anticipated. Still, absent evidence of an interaction effect in the reduced form, we do not pursue an interaction effect in the structural estimation that follows.

Since individuals do not choose their *hukou* type, it is largely exogenous to intra-household behaviors. The more serious concern is that there may be common factors outside our model related to status and consumption. Consumption preferences are undoubtedly related to birth location, although not necessarily at the level of aggregation in our data. Location may also be related to norms governing marital relations. We do not use actual location. Instead, we implicitly use whether one spouse is more likely to have migrated. Therefore, we do not expect this to be a problem, but we cannot rule it out completely.

6 The collective model with *hukou*

6.1 Static collective model

In this section, we show how to derive husbands' and wives' bargaining power when we have data only on aggregate household consumption within categories. Intuitively, we can think of the household as determining, for example, how much it should spend on clothes for each member and how much on alcohol.

Alternatively, it could proceed in two steps. It could decide how much to spend on clothing and how much on alcohol. Then noting how much it had allocated for each category, it would allocate the expenditure on clothing among its members and, similarly, for alcohol. If the household maximizes a social welfare function, the two processes will lead to exactly the same allocation. Suppose that wives' marginal propensity to consume clothing is higher and their marginal propensity to consume alcohol is lower than their husbands'. Transferring bargaining power from husbands to wives will increase the household's consumption of clothing and reduce its consumption of alcohol. Thus, we can infer bargaining power from household consumption even if all goods are private. We further facilitate identification by assuming the wife does not consume her husband's leisure.[8]

We draw heavily on the collective household model of Chiappori (1988, 1992) and Lise & Seitz (2011). We treat all goods as private and abstract from any pleasure that husbands and wives receive from the other's consumption. It should be apparent that doing so simplifies the presentation without altering the conclusions. The extension of the fully private good model to public goods is addressed in Blundell et al. (2005).

A family (F) consists of a husband (H), wife (W), and, possibly, children (K). The couple determines consumption and labor supply. All family members consume, but children cannot work or bring in income. The wife and husband have egoistic utility functions $u^W(\cdot)$ and $u^H(\cdot)$ that depend on their final goods consumption, c^Wor c^H, their leisure time (nonworking time), ℓ^Wor ℓ^H, and their consumption of home goods, q^W or q^H, produced from purchased intermediate products, g. In addition, both spouses derive utility from the children's consumption of goods, c^K and q^K. We use superscript F to denote household totals so that $c^F \equiv c^W + c^H + c^K$.

The household utility maximizes a weighted average of the wife's and husband's utilities. Thus, in a single period, household utility V^F is

$$V_t^F(c_t^W, c_t^H, c_t^K, \ell_t^W, \ell_t^H, q_t^W, q_t^H, q_t^K) = \upsilon u_t^W(c_t^W, \ell_t^W, q_t^W, c_t^K, q_t^K) + (1-\upsilon)u_t^H(c_t^H, \ell_t^H, q_t^H, c_t^K, q_t^K) \quad (1)$$

where υ is the wife's weight in the utility function or her bargaining power. Equivalently, $1-\upsilon$ equals the husband's weight. Note that children's consumption, not their utility, directly enters the husband and wife's utility. Also, note that the collective model allows us to avoid specifying the spouses' outside options.

We assume that q_t is produced from intermediate goods and the wife's nonworking time according to a constant-returns-to-scale production function.

$$q_t = q(g_t, \ell_t^W). \quad (2)$$

[8]Without this assumption, we could, in essence, arbitrarily assign tastes to either party and flip the sign on the distribution factors depending on our choice.

Consistent with the low participation of Chinese men in household chores, the husband does not engage in home production. Note that this specification does not imply that the wife spends all her nonmarket time on home production. Following the convention in empirical time-use research, we allocate a reasonable amount of time (8 hours) for sleep and rest (Lise & Yamada, 2019). This means her nonmarket time is a sufficient statistic for her direct contribution to home production, given the strong correlation between the two. While this assumption is strong, it is necessary due to the survey's lack of direct data on how much time individuals spend on home production.

We assume that pre-marital bargaining can affect bargaining weights but that the parties cannot commit to a particular consumption bundle in advance. This allows us to reduce the dynamic lifetime maximization problem to a static one.[9] Thus, we treat each period as an independent utility maximization problem. This maximization is subject to a per-period time constraint for each spouse:

$$h_t^j + \ell_t^j = 1, \quad j \in \{W, H\} \tag{3}$$

where h_t^j is the time on market work.

The household maximizes (1) subject to a one-period budget constraint where consumption equals income minus net savings

$$c_t^F + g_t^F + s_{t+1}^{*F} = w_t^W h_t^W + w_t^H h_t^H + (1 + r_t) s_t^{*F} \tag{4}$$

where s_{t+1}^{*F} is the optimal savings carried over to the next period in the intertemporal model, and s_t^{*F} is the savings level carried over from the prior period in that model. w^W and w^H represent the wages of the wife and husband.

In this static model, we conventionally treat wages (i.e., earning capacities) as exogenous, following (Blundell et al., 2005, 2007) and (Lise & Yamada, 2019). However, given the spouses' wages, the household chooses labor supply optimally. *Hukou* might affect wages directly. This would be one mechanism through which it affects bargaining power. However, it might also affect labor supply directly if, for example, one of the spouses would work only if employed in a state-owned enterprise. We recognize this as a possible limitation of the model.

6.2 Resource allocations to different types of goods

As with most surveys, we possess data solely on aggregate household consumption. Hence, it is convenient to consider the household's problem as a two-stage resource allocation process. The first stage involves allocating consumption across (sets of) goods, while the second stage pertains to distributing these goods among family members.

[9] See Zhuge & Lang (2023) for more details.

Our approach is without loss of generality. The household will choose the first-stage allocations as $c^{F*} = c^{W*} + c^{H*} + c^{K*}$ and $q^{F*} = q^{W*} + q^{H*} + q^{K*}$, where the utility for each spouse is derived from the choice. The household's overall utility follows a similar structure, combining the weighted utilities of the individual members. In the second stage, the household allocates consumption in the same manner as in the one-shot solution, maximizing utility based on the selected set of goods.

Thus, the household maximizes

$$V(c^F, \ell^i, q^F) = \mu U^W(c^F, \ell^W, q^F) + (1-\mu)U^H(c^H, \ell^H, q^H) \tag{5}$$

subject to the budget constraint (4) and non-negativity constraints.

$$c_t,\ \ell_t,\ h_t,\ q_t,\ g_t \geq 0. \tag{6}$$

In the second stage, the household allocates each good among its members to maximize the full utility function (1), subject to the constraints that total household consumption of each good equals the amount determined in the first step and that no party has negative consumption of any good.

Note that U and u are different functions with different arguments. While not our primary motivation, this framework also allows us to avoid claiming that certain goods are public and others private. In other words, μ serves as a proxy for υ. Note further that modeling household decisions as a two-step process is common in this literature, as in Chiappori (1992) and Blundell et al. (2005). However, we do not intend the two-step model to describe the household's decision process. We argue only that if the household's choices are Pareto efficient, they can be represented in this fashion.

As with the reduced-form estimates, the critical identifying assumption is that consumption preferences are unrelated to *hukou* status. Suppose men whose wives become head of the household after marriage are less inclined than other men to smoke and consume alcohol even before marriage. In that case, we will misattribute the household's low alcohol and tobacco consumption to her greater bargaining power.

6.3 Parameterization

We assume each spouse has a constant-elasticity of substitution utility function:

$$U^j(\boldsymbol{c}^F, q^F, \ell^j) = \frac{1}{1-\sigma^j}\left(\boldsymbol{\tau}_1^j(\boldsymbol{c}^F)^{\psi^j} + {\tau_2}^j(q^F)^{\psi^j} + \tau_3^j(\ell^j)^{\psi^j}\right)^{\frac{1-\sigma^j}{\psi^j}} \tag{7}$$

where $j \in \{W, H\}$, $\boldsymbol{c}^F = (c_1^F, c_2^F, \cdots, c_n^F)'$ is the vector of goods the family consumes and $\boldsymbol{\tau}_1^j = ({\tau_{1,1}}^j, {\tau_{1,2}}^j, \cdots, {\tau_{1,n}}^j)$ is the vector of the corresponding coefficients in the utility function at time t. The spouses may weigh goods differently; we allow the weights to vary with age. Similarly, ${\tau_2}^j$ shows the

husband's and wife's preferences for the home-produced good. We abuse notation by using $(\boldsymbol{c}^F)^{\psi^j}$ to refer to each element of the vector raised to the power ψ^j.

We impose that $\boldsymbol{\tau}_1^j \cdot \mathbf{1} + \tau_2^j + \tau_3^j = 1$ by modeling the preference parameters as

$$\tau_i^j = \frac{exp(\boldsymbol{\nu}_i^j \cdot \boldsymbol{x}_j^j)}{1 + \Sigma_{k=1}^n \exp(\boldsymbol{\nu}_{1,k}^j \cdot \boldsymbol{x}_j^j) + exp(\boldsymbol{\nu}_2^j \cdot \boldsymbol{x}_j^j)} \text{ for } j = \text{ H,W} \tag{8}$$

where $\boldsymbol{x}_j^j$ consists of individual characteristics at time t, and $\boldsymbol{\nu}_i^j$ is a corresponding vector of parameters showing how these characteristics shift preferences. Due to computational limitations, x consists of a constant and the wife's or husband's age. We primarily focus on how gender and age affect preferences for different types of consumption, as consumption preferences mainly change with individuals' age (Becker & Mulligan, 1997). This approach aligns with the strategy used by Cherchye et al. (2012) to avoid over-specifying the model.

Additionally, the preference parameters reflect the relative preferences for one type of good over another, meaning that external factors play a less significant role in altering these comparative preferences. Based on the reduced-form evidence, we further incorporate the number of children as a factor influencing the preference for clothing and education and entertainment expenditures for the wife's utility. With a slight violation of notation, (8) holds for each of the n categories of final good consumption and the intermediate good.

To ensure that bargaining power (or the Pareto weights) is between 0 and 1, we impose

$$\mu = \frac{exp(\boldsymbol{\mu_0} \cdot \boldsymbol{Z}_0 + \boldsymbol{\mu_1} \cdot \boldsymbol{Z_t})}{1 + exp(\boldsymbol{\mu_0} \cdot \boldsymbol{Z}_0 + \boldsymbol{\mu_1} \cdot \boldsymbol{Z_t})} \tag{9}$$

where $\boldsymbol{Z}_0$ and $\boldsymbol{Z_t}$ incorporate the *hukou*-related factors on which we focus. We use the same classifications of *hukou* as in the reduced-form (Tables 2 and 3). The subscripts 0 and t are utilized to differentiate between the *hukou* status at the time of marriage and the present status only for notation purposes. We pool all the samples without emphasizing their time-series characteristics. We use the time subscript here to remind readers that the bargaining weights may depend on conditions at marriage and current conditions.

Finally, we impose that home production is Cobb-Douglas in the wife's non-working hours and intermediate goods, which we measure as food consumed in the home:

$$q^F = q(g, \ell^W) = (\ell^W)^\rho (g^F)^{1-\rho}. \tag{10}$$

Unfortunately, we do not have a measure of time spent on childcare, undoubtedly an important element of the wife's home production. As an imperfect solution, we let the home production depend on the number of children (x^c):

$$\rho = \frac{exp(\iota_0 + \iota_1 \cdot x^c)}{1 + exp(\iota_0 + \iota_1 \cdot x^c)}. \tag{11}$$

It is common in this literature to assume that households are indifferent between the wife's time spent on home and market production. However, in the Chinese context, strong social norms may favor wive's home over market production. Therefore, we do not impose this condition.

6.4 Estimation

We estimate the model using the nonlinear generalized method of moments (GMM), addressing potential endogeneity in the linear regression where *hukou* status may correlate with unobserved variables that influence family expenditure and consumption behaviors.

We derive the first-order conditions with respect to consumption $\{\boldsymbol{c}^F, g^F\}$ and leisure $\{\ell^W, \ell^H\}$ in the first part of Appendix A.2. From these, we derive the marginal rate of substitution equations that allow us to construct moment constraints.

The equations governing substitution between pairs of goods allow us to construct 28 moment constraints. We get 8 moment constraints from the relation between the intermediate good and eight final goods. We get additional constraints from substitution between final goods and wife's leisure (8), between final goods and husband's leisure (8), between the intermediate good and wife's or husband's leisure (2), and between wife's and husband's leisure (1), for a total of 55 moment constraints.

There are 36 taste parameters $\{\nu_i^j\}$: a constant and a coefficient on age for home production and each of eight categories of final goods, for each spouse separately $(2 * 9 * 2 = 36)$. The constraint that the weights on the goods sum to 1 determines the preference for leisure. Additional parameters determine the home production function. Two parameters, ψ^W and ψ^H, are related to the elasticities of substitution, and two parameters, σ^W and σ^H, are related to the degrees of homogeneity of the spouses' utility functions. Lastly, the Pareto weights (bargaining power) are determined by the coefficient vector $\{\boldsymbol{\mu_0}, \boldsymbol{\mu_1}\}$.

The model is identified primarily by the assumption that the wife does not value her husband's leisure and that the husband values his wife's leisure only through its effect on home production. If each spouse received utility from the other's leisure, we could not, for example, distinguish a world in which the wife has a lot of power and values her leisure highly from one in which she has little power, but her husband values her leisure highly. The closest equivalent is Browning et al. (1994), who assume that husbands and wives do not derive utility from their spouse's clothes.

In a broader sense, differences in husbands' and wives' consumption preferences identify the model. If men tend to value alcohol and tobacco more highly, the household will consume more alcohol and tobacco when the husband has more bargaining power. If the wife has more bargaining power, she may work less. Given these taste differences, we would infer that in households where her leisure is high, she has high

power, whereas he has more power when spending on alcohol and tobacco is high. Thus, we implicitly assume that the couple's *hukou* status can only affect the expenditure distribution through its effect on bargaining power. This assumption will be violated if a wife and a husband want to spend more on clothing when she brought local *hukou* into the family (for example, if men who like women with local-urban *hukou* tend to care more about clothes).

7 Results

We summarize preferences for final goods: $\boldsymbol{\tau}_1^j$, the intermediate good: τ_2^j, and leisure at the sample means. Our focus is on bargaining power, for which we provide estimates both at sample means and of the effect of *hukou*. We use the delta method to calculate the standard errors at these means.

We show that husbands and wives have different preferences over classes of goods and use these differences to estimate the effect of *hukou* and social networks on bargaining power. We present the results in the opposite order, focusing first on the determinants of bargaining power, our main contribution, before showing the taste preferences that identify bargaining power.

As shown in the earlier reduced-form evidence section, our two classification groups capture different aspects of *hukou* status. The first group emphasizes the impact of *hukou*-related benefits and social factors. The second group reflects how *hukou* status may be ranked according to its type, which could influence the associated benefits and social standing.

7.1 Better *Hukou* Raises Bargaining Power

The first column in Table 4 uses the binary distinction, whether the wife is the recorded household head. The first row shows the wife's mean bargaining weight is about $.35$, which is somewhat low relative to estimates in developed countries (e.g., 0.5 to 0.52 in the US (Del Boca & Flinn, 2012) and 0.43 to 0.44 in Japan (Lise & Yamada, 2019)).[10] As expected, an advantageous *hukou* gives wives more power. The $.33$ coefficient on "wife is household head" translates into about a $.07$ higher bargaining weight at the mean, representing an approximate 20% increase from the sample average.

[Insert Table 4 around here]

Column (2) adds the spouses' current *hukou* status. Once we control for who the household head is, neither her nor his current *hukou* status enters statistically significantly. However, both are imprecisely

[10]The weight is calculated at average age, average number of children, and proportion wife household head.

measured, and the coefficient on her status is large and positive. Importantly, adding these variables has no notable effect on the relation between her power and whether she is the household head.

The last column focuses on the *guanxi* aspect of *hukou*. We cannot observe *guanxi* directly. However, social network research often uses the time people interact with others locally to proxy social network strength (Granovetter, 1973). We use the total time a person has lived in the community as a correlate of their social network's strength. Nevertheless, we recognize that time in the community is also related to *hukou* status. Moreover, *hukou* status affects access to desirable jobs, which may also affect contact with well-connected people.

As expected, time lived in the community is positively related to bargaining power. However, the effect falls well short of significance for husbands. A one-year increase in the wife's years in her current town raises her bargaining weight by a somewhat imprecisely estimated .2 percentage points at the mean. The point estimate for husbands is only about one-fourth of that for wives. While the effect of a single additional year is small, a 30-year-old wife who has lived locally all her life and who marries a newcomer has roughly the same bargaining power benefit as one who is the household head. We find it plausible that "years living locally" captures elements of *guanxi* and is not just an alternate indicator of *hukou* status.

Column (2) suggests that current *hukou* status may be unimportant, while columns (1) and (3) indicate that *hukou* status at the time of marriage and *guanxi* may both be important. Table 5 directly addresses the combined role of these two factors and explores the role of current *hukou* status more fully.

[Insert Table 5 here]

Column (1) of Table 5 uses the variable "wife brought in *hukou,*" which equals one if either the wife is the head or she has lived in the town longer than her husband has to capture the likelihood that she has the greater *guanxi*. Compared with "wife is head" in Table 4, the coefficient falls by roughly 7 percent, and its standard error increases by about a fifth.

Column (2) adds whether the wife has local *hukou* but did not provide the family with local-urban *hukou.* This specification provides a clearer picture. Recall that these two groups comprise 97% of our sample. Therefore, it is unsurprising that the difference in wives' bargaining power in households where she brought in *hukou* relative to where she has local-urban *hukou* is similar to the difference between the first group and all other households combined. More striking is the large difference in bargaining power between wives with and without local-urban *hukou* in families where she did not bring this *hukou* status to the family. Wives with local-urban *hukou* who were not responsible for their family's *hukou* status still have 24% more bargaining power than those without local-urban *hukou*. Families who rely on the wife for

better *hukou* see the wives enjoy a Pareto weight of 0.394 on average, which is 19% and 48% higher than the weight of the wives who are in the groups that do not rely on the wives for *hukou*, and who have and do not have local-urban *hukou*.

Column (3) further divides the group where she has local-urban *hukou* but did not bring this status to the household where the husband has and does not have local-urban *hukou*. The latter case is unusual. It means that the wife is not the listed head of household, and the husband has lived in the town for at least as long as the wife has, but he does not yet have local-urban *hukou*. We also divide the households where the wife does not have local-urban *hukou* into those in which the husband does and does not. We expect the wife to have more bargaining power when she, but not her husband, has local urban *hukou*. The point estimates do not support this expectation but are sufficiently imprecise that we can conclude very little from this comparison. As expected, when the wife does not have local-urban *hukou*, she has more power when her husband also does not have it (the excluded category) than when he does. However, the estimates are again too imprecise to permit any strong conclusions.

We have not focused on the role of children in affecting bargaining power. However, we consistently find that an additional child reduces the wife's bargaining power, consistent with the reduced-form evidence (see the results on the number of children variable in Tables 2, 3, and A2). We are cautious about interpreting this effect as causal. Lower-income and less-educated families tend to have more children in China, and, in developed countries, at least, these characteristics are associated with lower bargaining power of the wife. Moreover, the labor-supply reducing effect of children may reduce the wife's market income and, thus, her power in decision-making. Similar outcomes have been confirmed elsewhere, such as in Mazzocco (2007) and Lise & Yamada (2019).

7.2 Husbands and Wives Have Different Preferences over Consumption

The preference parameters in the utility function represent the relative importance a person places on various consumption goods. A larger weight indicates that the good provides more utility to the individual. Although the unitization of preference parameters prevents direct comparison of a good's weight between genders, we can still compare preference parameters across different goods to understand their relative importance to an individual.

The lower panels of Table 4 and Table 5 present our estimates of the weights assigned by wives and husbands to different categories of goods and home production at the average age of the sample. These results reveal the preference levels for various types of goods for an average man or woman in the sample. However, personal and family characteristics can influence these preferences. For estimates of how individual characteristics affect preferences, refer to the third part of Appendix A.2.

On average, the wife places less weight on each consumption category than her husband does. Since

the weights on goods and nonmarket time must sum to 1, she must put more weight on her nonmarket time than he does on his. Similarly, Anderson & Baland (2002) find that wives value savings more than spending on consumption. There are also large differences in the relative weights placed on different categories. In terms of the percentage of the preference parameter for each consumption category, his weight on alcohol and tobacco is almost twenty times hers. In contrast, his weight on clothing is only about three times hers. This implies that she values clothing relative to alcohol and tobacco much more than he does. Doepke & Tertilt (2011) reach a similar conclusion. Among consumption goods, wives also put more weight on entertainment and education than on other spending.

Recall that we do not impose that home production is 'efficient' in the sense that the wife's value of the marginal product in home production equals her market wage. This is because the household may value time spent on home production more or less than time spent working in the market. Such a gap may reflect social norms about childcare or female work and expectations about home production.

Nevertheless, we can test whether this constraint holds in our data. We write the constraint as $\rho = \frac{w^W \ell^W}{g^F + w^W \ell^W}$ for each period. The right-hand side $\frac{w^W \ell^W}{g^F + w^W \ell^W}$ has a sample mean of 0.8274, and the 95% confidence interval is $[0.8261, 0.8288]$, far higher than our estimates of ρ in Table 4 and Table 5. This suggests that "wives spend too much time on home production," relative to our estimate of their value of marginal production in home production. Given our limited information about home production, we view this result with caution.

8 Conclusions

We examine how policies determining a person's legal status impact intrahousehold bargaining. We analyze the gendered effects of *hukou*, a Chinese policy restricting residential mobility. The policy allows the spouse with the better *hukou* to provide the household with better access to jobs and social services, to allow any children to attend better schools, and to pass their *hukou* status to their spouses and, for wives, to their children. We investigate how the *hukou* a person brings into a marriage alters intrahousehold bargaining power. We use gendered preferences for different types of consumption to identify bargaining power. Despite lacking data on individual consumption within households, we can infer bargaining weights because husbands and wives have distinct preferences for goods, particularly in the relative importance they place on alcohol and tobacco versus clothing. This allows us to explore how the *hukou* status of individuals in a couple affects their bargaining power.

We find that Chinese wives generally have less bargaining power than their husbands. They are, therefore, disadvantaged in the distribution of household resources. The average wife's Pareto weight is between 0.34 and 0.35, somewhat smaller than found in developed countries. However, if the wife brought local

urban *hukou*, her bargaining power is about 19.4% (about $7pp$) higher than that of a wife whose family does not rely on her for *hukou*. *Guanxi* or social networks are also important in deciding individuals' bargaining power. Wives who have been living in their current town for longer, an admittedly imperfect measure of *guanxi*, have higher bargaining power by roughly 0.2 percentage points per year lived in the town.

The barriers to obtaining *hukou* have gradually lessened thanks to a series of reforms following China's moves towards a market economy. We anticipate that these changes will reduce the power of wives who bring the better *hukou* to the household and, possibly, increase that of other wives. However, the broader effects of *hukou* reform on the economy make any such prediction speculative.

As discussed earlier, prior research has shown that higher earnings are associated with greater bargaining weight. This research suggests that bargaining power increases when a spouse contributes more to the household. However, earnings and, possibly, wages are endogenous to bargaining. Pre-marital *hukou* status is exogenous. Our estimates are likely to remain consistent even if *hukou* affects who marries whom.

References

Afridi, F., Li, S. X., & Ren, Y. (2015). Social identity and inequality: The impact of china's hukou system. *Journal of Public Economics*, *123*, 17–29.

Anderson, S., & Baland, J.-M. (2002). The economics of roscas and intrahousehold resource allocation. *The Quarterly Journal of Economics*, *117*(3), 963–995.

Attanasio, O., & Lechene, V. (2002). Tests of income pooling in household decisions. *Review of economic dynamics*, *5*(4), 720–748.

Attanasio, O., & Lechene, V. (2014). Efficient responses to targeted cash transfers. *Journal of Political Economy*, *122*(1), 178–222.

Becker, G. S., & Mulligan, C. B. (1997). The endogenous determination of time preference. *Quarterly Journal of Economics*, *112*(3), 729–758.

Blundell, R., Chiappori, P.-A., Magnac, T., & Meghir, C. (2007). Collective labour supply: Heterogeneity and non-participation. *Review of Economic Studies*, *74*(2), 417–445.

Blundell, R., Chiappori, P.-A., & Meghir, C. (2005). Collective labor supply with children. *Journal of Political Economy*, *113*(6), 1277–1306.

Bobonis, G. J. (2009). Is the allocation of resources within the household efficient? new evidence from a randomized experiment. *Journal of Political Economy*, *117*(3), 453–503.

Browning, M., Bourguignon, F., Chiappori, P.-A., & Lechene, V. (1994). Income and outcomes: A structural model of intrahousehold allocation. *Journal of Political Economy*, *102*(6), 1067–1096.

Browning, M., Chiappori, P.-A., & Weiss, Y. (2014). *Economics of the family*. Cambridge University Press.

Browning, M., & Gørtz, M. (2012). Spending time and money within the household. *Scandinavian Journal of Economics*, *114*(3), 681–704.

Casco, J. L. (2023). Intra-household resource shares under poverty transfers: evidence from ecuador. *Review of Economics of the Household*, 1–32.

Cherchye, L., De Rock, B., & Vermeulen, F. (2012). Married with children: A collective labor supply model with detailed time use and intrahousehold expenditure information. *American Economic Review*, *102*(7), 3377–3405.

Chiappori, P.-A. (1988). Rational household labor supply. *Econometrica*, 63–90.

Chiappori, P.-A. (1992). Collective labor supply and welfare. *Journal of Political Economy*, *100*(3), 437–467.

Chiappori, P.-A., Fortin, B., & Lacroix, G. (2002). Marriage market, divorce legislation, and household labor supply. *Journal of Political Economy*, *110*(1), 37–72.

Chiappori, P.-A., & Mazzocco, M. (2017). Static and intertemporal household decisions. *Journal of Economic Literature*, *55*(3), 985–1045.

Choo, E., & Siow, A. (2006). Who marries whom and why. *Journal of Political Economy*, *114*(1), 175–201.

Del Boca, D., & Flinn, C. (2012). Endogenous household interaction. *Journal of Econometrics*, *166*(1), 49–65.

Doepke, M., & Tertilt, M. (2011). *Does female empowerment promote economic development?* The World Bank.

Donni, O. (2004). A collective model of household behavior with private and public goods: theory and some evidence from us data.

Du, H., Xiao, Y., & Zhao, L. (2021). Education and gender role attitudes. *Journal of Population Economics*, *34*, 475–513.

Duflo, E., & Udry, C. R. (2004). *Intrahousehold resource allocation in cote d'ivoire: Social norms, separate accounts and consumption choices.* National Bureau of Economic Research Cambridge, Mass., USA.

Fernández, R., & Wong, J. C. (2014). Divorce risk, wages and working wives: A quantitative life-cycle analysis of female labour force participation. *The Economic Journal*, *124*(576), 319–358.

Gagnon, J. J., Xenogiani, T., & Xing, C. (2011). Are all migrants really worse off in urban labour markets? new empirical evidence from china.

Galichon, A., & Salanié, B. (2017). The econometrics and some properties of separable matching models. *American Economic Review*, *107*(5), 251–255.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360–1380.

Han, L., Li, T., & Zhao, Y. (2015). How status inheritance rules affect marital sorting: Theory and evidence from urban china. *Economic Journal*, *125*(589), 1850–1887.

Hu, Q. (2024). Social status and marriage markets: Evaluating a hukou policy in china. *Review of Economics of the Household*, *22*(2), 477–509.

Huang, F., Jin, G. Z., & Xu, L. C. (2012). Love and money by parental matchmaking: evidence from urban couples in china. *American Economic Review*, *102*(3), 555–60.

Johnson, D. G. (2003). Provincial migration in china in the 1990s. *China Economic Review*, *14*(1), 22–31.

Kandpal, E., & Baylis, K. (2019). The social lives of married women: Peer effects in female autonomy and investments in children. *Journal of Development Economics*, *140*, 26–43.

Lafortune, J., & Low, C. (2023). Collateralized marriage. *American Economic Journal: Applied Economics*, *15*(4), 252–291.

Li, L., & Wu, X. (2011). Gender of children, bargaining power, and intrahousehold resource allocation in china. *Journal of Human Resources*, *46*(2), 295–316.

Lise, J., & Seitz, S. (2011). Consumption inequality and intra-household allocations. *Review of Economic Studies*, *78*(1), 328–355.

Lise, J., & Yamada, K. (2019). Household sharing and commitment: Evidence from panel data on individual expenditures and time use. *Review of Economic Studies*, *86*(5), 2184–2219.

Lundberg, S., & Pollak, R. A. (1993). Separate spheres bargaining and the marriage market. *Journal of Political Economy*, *101*(6), 988–1010.

Manser, M., & Brown, M. (1980). Marriage and household decision-making: A bargaining analysis. *International Economic Review*, 31–44.

Marsden, P. V., & Campbell, K. E. (1984). Measuring tie strength. *Social Forces*, *63*(2), 482–501.

Mazzocco, M. (2007). Household intertemporal behaviour: A collective characterization and a test of commitment. *Review of Economic Studies*, *74*(3), 857–895.

Mazzocco, M., Ruiz, C., & Yamaguchi, S. (2014). Labor supply and household dynamics. *American Economic Review*, *104*(5), 354–359.

McElroy, M. B. (1990). The empirical content of nash-bargained household behavior. *Journal of Human Resources*, *25*(4), 559–583.

McElroy, M. B., & Horney, M. J. (1981). Nash-bargained household decisions: Toward a generalization of the theory of demand. *International Economic Review*, *22*(2), 333–349.

Quisumbing, A. R., Maluccio, J. A., et al. (2000). *Intrahousehold allocation and gender relations* (Tech. Rep.). International Food Policy Research Institute (IFPRI).

Reynoso, A. (2024). The impact of divorce laws on the equilibrium in the marriage market. *Journal of Political Economy*, *132*(12), 4155–4204.

Song, Y. (2014). What should economists know about the current chinese hukou system? *China Economic Review*, *29*, 200–212.

Theloudis, A., Velilla, J., Chiappori, P.-A., Gimenez-Nadal, J. I., & Molina, J. A. (2023). Commitment and the dynamics of household labor supply. *arXiv preprint arXiv:2307.10983*.

Vermeulen, F. (2005). And the winner is... an empirical evaluation of unitary and collective labour supply models. *Empirical Economics*, *30*, 711–734.

Voena, A. (2015). Yours, mine, and ours: Do divorce laws affect the intertemporal behavior of married couples? *American Economic Review*, *105*(8), 2295–2332.

Wang, C., Liu, X., & Yan, Z. (2021). Temporary versus permanent migration: The impact on expenditure patterns of households left behind. *Review of Economics of the Household*, *19*(3), 873–911.

Wu, L., & Zhang, W. (2018). Rural migrants' homeownership in chinese urban destinations: Do institutional arrangements still matter after hukou reform? *Cities*, *79*, 151–158.

Yamaguchi, S., Ruiz, C., Mazzocco, M., et al. (2014). Labor supply, wealth dynamics and marriage decisions. In *2014 meeting papers.*

Zhang, H. (2010). The hukou system's constraints on migrant workers' job mobility in chinese cities. *China Economic Review*, *21*(1), 51–64.

Zhuge, L., & Lang, K. (2023). *Hukou and guanxi: How social discrimination and networks impact intrahousehold allocations in china* (Tech. Rep.). National Bureau of Economic Research.

Tables

Table 1: Summary statistics

	Mean (std. dev.)	
Panel A	Household	
Total income	32144.61 (22609.62)	
Salary income	26832.78 (20511.53)	
Dual-earner (full-time) ratio	0.7 (0.46)	
Number of children	0.94 (0.47)	
Total expenditure	31031.01 (36423.65)	
Consumption	22830.71 (18247.9)	
Alcohol and tobacco	730.58|2.27% (1028.75)	
Clothing	2454.56|7.64% (2241.68)	
Home improvement	1308.08|4.07% (2696.55)	
Medical	1351.07|4.20% (2846.6)	
Transportation and utility	2900.75|9.02% (8533.58)	
Entertainment and education	3720.85|11.58% (5044.86)	
Rent	2109.3|6.56% (4868.32)	
Misc.	796.5|2.39% (1332.56)	
Food	8189.61|25.48% (4456.36)	
Observations	29,023	
Panel B	Wife	Husband
Age	42.95 (7.31)	44.6 (7.36)
Working hours/m	132.97 (78.13)	171.07 (42.88)
Income	11543.63 (10305.13)	17441.82 (13748.89)
Salary income	9231.49 (10169.72)	15719.14 (13147.36)
College Degree	0.24 (0.42)	0.35 (0.48)
Urban *hukou*	0.976	0.983
Local urban *hukou*	0.969	0.977
Years in town	18.88 (12.94)	20.56 (12.23)
Household head	0.291	0.709

Notes: The summary statistics presents the mean values of variables with standard deviations in parentheses. The income categories include zero-income individuals. In the consumption subgroup part, the percentages behind | stand for the amount of the total income. The sample comprises 29,023 households in total from year 2002 to 2006. The currency values are adjusted according to the CPI in each province. The sum of the nine category expenditures is not exactly the same as the total because of the missing reports of some households in subcategories. The residual category (the difference between the total income and the total consumption) is the net savings. Dual-earner family is a family with two full-time earners. A full-time earner is defined as a worker who spends more than 100 hours per month in the labor market. College degree proportion is the proportion of those who have attended vocational institutes or colleges or higher.

Table 2: Reduced-form evidence I: *hukou* and wife's contribution on social insurance

Variable:	Dependent variable: Wife's social insurance expenditure / Total social insurance expenditure					
Wife brought in *hukou*	0.161		0.125			
	(0.006)		(0.006)			
Group A		0.202		0.130		
(wife brought in *hukou*)		(0.041)		(0.037)		
Group B		0.197		0.090		
(wife didn't bring in *hukou* & she has local urban *hukou* and he doesn't)		(0.076)		(0.071)		
Group C		0.043		0.006		
(wife didn't bring in *hukou* & she and he both have local urban *hukou*)		(0.041)		(0.036)		
Group E		-0.126		-0.098		
(wife didn't bring in *hukou* & he has local urban *hukou* and she doesn't)		(0.045)		(0.040)		
Wife years since settling					0.030	0.020
					(0.007)	(0.006)
Husband years since settling					-0.027	-0.022
					(0.008)	(0.006)
Number of children	-0.029	-0.029	-0.020	-0.020	-0.033	-0.023
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)
Wife occupation			×	×		×
Husband occupation			×	×		×
Wife and husband age groups	×	×	×	×	×	×
Time fixed effects	×	×	×	×	×	×
Province fixed effects	×	×	×	×	×	×
Observations	23,615	23,615	23,615	23,615	23,615	23,615
R^2	0.145	0.149	0.314	0.316	0.098	0.287

Note: Standard errors in brackets and errors are clustered at the household level. The spending is monthly based on the currency of *yuan*, and the values are log linearized. Groups are arranged according to the assumed bargaining power ranks of wives within families (A is the highest). The baseline group is Group D, where neither spouse has local urban *hukou*.

Table 3: Reduced-form evidence II: *hukou* and consumption on different items

	Consumption to the total income							
Variable:	Alcohol and tobacco		Clothes		Home improvement		Education and entertainment	
Wife brought in *hukou*	-0.005		0.007		0.001		0.006	
	(0.001)		(0.001)		(0.001)		(0.002)	
Group A		-0.009		0.017		0.012		0.039
(wife brought in *hukou*)		(0.002)		(0.003)		(0.002)		(0.006)
Group B		-0.011		0.014		0.013		0.027
(wife didn't bring in *hukou* & she has local urban *hukou* and he doesn't)		(0.004)		(0.007)		(0.007)		(0.018)
Group C		-0.005		0.010		0.012		0.034
(wife didn't bring in *hukou* & she and he both have local urban *hukou*)		(0.002)		(0.003)		(0.002)		(0.006)
Group E		-0.003		0.002		0.010		0.031
(wife didn't bring in *hukou* & he has local urban *hukou* and she doesn't)		(0.003)		(0.004)		(0.004)		(0.010)
Number of children	0.001	0.001	0.005	0.005	-0.001	-0.001	0.028	0.029
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Wife and husband age groups	×	×	×	×	×	×	×	×
Time fixed effects	×	×	×	×	×	×	×	×
Province fixed effects	×	×	×	×	×	×	×	×
Observations	29,023	29,023	29,023	29,023	29,023	29,023	29,023	29,023
R^2	0.074	0.075	0.084	0.084	0.011	0.012	0.012	0.013

Note: Standard errors in brackets and errors are clustered at the household level. The spending is monthly based on the currency of *yuan*, and the values are log linearized. Groups are arranged according to the assumed bargaining power ranks of wives within families (A is the highest). The baseline group is Group D, where neither spouse has local urban *hukou.*

Table 4: Structural estimation I: *hukou* types, preferences and bargaining power

	Hukou types and *guanxi* (years since settling)		
	(1)	(2)	(3)
Pareto weight (bargaining power)			
μ (sample average)	0.354	0.348	0.353
	(0.129)	(0.184)	(0.117)
Pareto weight parameters			
Wife household head	0.329	0.303	
	(0.022)	(0.083)	
Wife local urban *hukou*		0.346	
		(0.533)	
Husband local urban *hukou*		-0.050	
		(0.504)	
Wife years since settling			0.211
			(0.088)
Husband years since settling			-0.055
			(0.130)
F-test Chi-square		0.921	
F-test P-value		0.631	
Home production			
ρ	0.087	0.143	0.116
	(0.040)	(0.061)	(0.070)
Preference			

	Wife	Husband	Wife	Husband	Wife	Husband
Alcohol and tobacco	0.0029	0.0569	0.0001	0.0582	0.0001	0.0576
	(0.0009)	(0.0007)	(0.0011)	(0.0008)	(0.0014)	(0.0014)
Clothing expenditures	0.0134	0.0475	0.0127	0.0475	0.0071	0.0512
	(0.0013)	(0.0007)	(0.0021)	(0.0010)	(0.0013)	(0.0005)
Home improvement	0.0067	0.0519	0.0068	0.0513	0.0040	0.0533
	(0.0010)	(0.0006)	(0.0015)	(0.0008)	(0.0011)	(0.0005)
Medical expenditures	0.0071	0.0517	0.0063	0.0517	0.0096	0.0498
	(0.0010)	(0.0006)	(0.0014)	(0.0008)	(0.0015)	(0.0007)
Transportation and utility	0.0074	0.0505	0.0062	0.0508	0.0007	0.0541
	(0.0011)	(0.0006)	(0.0014)	(0.0006)	(0.0009)	(0.0006)
Entertainment and education	0.0085	0.0499	0.0067	0.0505	0.0123	0.0482
	(0.0011)	(0.0006)	(0.0014)	(0.0008)	(0.0019)	(0.0008)
Rent	0.0123	0.0483	0.0119	0.0481	0.0125	0.0488

	(0.0015)	(0.0008)	(0.0025)	(0.0013)	(0.0019)	(0.0010)
Misc.	0.0081	0.0513	0.0079	0.0508	0.0045	0.0531
	(0.0009)	(0.0005)	(0.0015)	(0.0008)	(0.0011)	(0.0006)
Intermediate goods (food)	0.0504	0.0397	0.0524	0.0440	0.0560	0.0399
	(0.0054)	(0.0024)	(0.0084)	(0.0064)	(0.0078)	(0.0042)
ψ	0.227	1.192	0.231	1.176	0.321	1.119
	(0.035)	(0.010)	(0.090)	(0.014)	(0.051)	(0.013)
Observations	29,023		29,023		29,023	

Notes: Standard errors in parentheses. The Pareto weight (bargaining), home production elasticity, and preference coefficients of 8 final goods and 1 intermediate good are computed through the Delta method with the sample means. The coefficient of leisure is one minus the sum of the coefficients of home production and consumption. F-test is the joint significance test based on the joint zero coefficient assumption of husband's and wife's *hukou* types. The preference coefficients maintain four-digit precision, as they are derived from functions calculated using Table A5 and possess relatively small magnitudes.

Table 5: Structural estimation II: *hukou* obtention, preferences and bargaining power

	Hukou obtention and household *hukou* types					
	(1)		(2)		(3)	
Pareto weight (bargaining power)						
μ (sample average)	0.350		0.342		0.348	
	(0.158)		(0.172)		(0.156)	
Pareto weight parameters						
Wife brought in *hukou*	0.305					
	(0.027)					
Group 1			0.580			
(wife brought in *hukou*)			(0.264)			
Group 2			0.302			
(wife didn't bring in *hukou* & she has local urban *hukou*)			(0.352)			
Group A					0.583	
(wife brought in *hukou*)					(0.290)	
Group B					0.273	
(wife didn't bring in *hukou* & she has local urban *hukou* and he doesn't)					(0.340)	
Group C					0.223	
(wife didn't bring in *hukou* & she and he both have local urban *hukou*)					(0.270)	
Group E					-0.099	
(wife didn't bring in *hukou* & he has local urban *hukou* and she doesn't)					(0.653)	
F-test Chi-square					250.570	
F-test P-value					2.2e-16	
Home production						
ρ	0.151		0.075		0.122	
	(0.059)		(0.041)		(0.059)	
Preference						
	Wife	Husband	Wife	Husband	Wife	Husband
Alcohol and tobacco	0.0001	0.0577	0.0001	0.0574	0.0032	0.0556
	(0.0016)	(0.0009)	(0.0013)	(0.0012)	(0.0011)	(0.0008)
Clothing expenditures	0.0127	0.0475	0.0105	0.0485	0.0119	0.0478
	(0.0016)	(0.0009)	(0.0011)	(0.0008))	(0.0016)	(0.0008)
Home improvement	0.0066	0.0516	0.0047	0.0524	0.0054	0.0521

	(0.0016)	(0.0008)	(0.0009)	(0.0007)	(0.0011)	(0.0006)
Medical expenditures	0.0066	0.0516	0.0053	0.0521	0.0062	0.0516
	(0.0015)	(0.0008)	(0.0009)	(0.0008)	(0.0012)	(0.0006)
Transportation and utility	0.0054	0.0513	0.0035	0.0521	0.0049	0.0513
	(0.0016)	(0.0007)	(0.0007)	(0.0006)	(0.0016)	(0.0007)
Entertainment and education	0.0072	0.0504	0.0062	0.0507	0.0067	0.0504
	(0.0018)	(0.0009)	(0.0011)	(0.0008)	(0.0014)	(0.0007)
Rent	0.0132	0.0476	0.0118	0.0482	0.0106	0.0488
	(0.0017)	(0.0021)	(0.0044)	(0.0012)	(0.0023)	(0.0011)
Misc.	0.0086	0.0505	0.0061	0.0517	0.0068	0.0514
	(0.0015)	(0.0007)	(0.0009)	(0.0007)	(0.0013)	(0.0007)
Intermediate goods (food)	0.0484	0.0459	0.0392	0.0435	0.0518	0.0425
	(0.0061)	(0.0039)	(0.0064)	(0.0024)	(0.0071)	(0.0047)
ψ	0.335	1.151	0.229	1.146	0.188	1.179
	(0.048)	(0.018)	(0.055)	(0.011)	(0.073)	(0.009)
Observations	29,023		29,023		29,023	

Notes: Standard errors in parentheses. The Pareto weight (bargaining), home production elasticity, and preference coefficients of 8 final goods and 1 intermediate good are computed through the Delta method with the sample means. Groups are arranged according to the assumed bargaining power ranks of wives within families (A is the highest). The baseline group is Group D, where neither spouse has local urban *hukou*. The F-test is the joint significance test based on the joint zero coefficient assumption of Group A to D. The coefficient of leisure is one minus the sum of the coefficients of home production and consumption. The preference coefficients maintain four-digit precision, as they are derived from functions calculated using Table A6 and possess relatively small magnitudes.

Table A1: *Hukou*-related benefits

Hukou benefits	Details and examples of benefits
Work	While it is illegal for employers in China to discriminate against job applicants based on their race, ethnicity, sex, and religion, the national law does not provide protection for employees based on their *hukou* status (as stated in Chapter 2, Article 12 of the Labour Law of the People's Republic of China, 1994). However, government entities and state-owned companies often impose *hukou* requirements during their hiring processes, with the specific requirements varying depending on the level of government. In many cases, a large percentage of job positions are exclusively reserved for individuals who possess a local *hukou* and who have met certain residency requirements. In some cases, exceptions to these requirements can be made under talent programs, which may require applicants to hold certain degrees or qualifications.
Housing	In many major cities, the ability to purchase a house is restricted to individuals who hold a local *hukou*. Two housing projects designed to assist low-income residents—the Economically Affordable Housing Project (for purchase) and the Low-Rent Housing Project (for rent)—also require applicants to have held a local *hukou* for a specified period of time.
Education	Enrollment in most public preschools, primary schools, and high schools is typically restricted to students who hold a *hukou* located within the school's district. As a result, even if a child has a *hukou* within the same city, they may not be permitted to attend a school located in a different district. The college admission process in China is based on a provincial level, with each college reserving a higher quota for local students. Consequently, *hukou* status in cities and provinces with more prestigious colleges, which are typically located in more developed regions such as Beijing and Shanghai, is more highly valued.
Social welfare	The five different types of employment-based insurance, which include Endowment Insurance, Maternity Insurance, Medical Insurance, Employment Injury Insurance, and Unemployment Insurance, are not directly linked to an individual's *hukou* status. However, individuals do have the option to make insurance payments to the city where they work or to their original hometown. It is important to note that the Endowment Insurance program has a special requirement for individuals without local *hukou*. Specifically, these individuals must have made consecutive payments for at least ten years in order to be eligible to receive pension benefits.
Vehicle	Major large cities (i.e. Beijing, Shanghai, Shenzhen, Guangzhou, etc.) utilize lottery systems for vehicle registration plates, with participation restricted to residents who hold local *hukou* or other qualified individuals with a sufficient history of residency and social insurance payments.

The summary originates from the "Household Registration Reform and Immigration Research Project," conducted by the China Public and Behavioral Studies in collaboration with the Research Institute of Economics and Management at Southwestern University of Finance and Economics. This platform systematically compiles and condenses a comprehensive array of *hukou*-related policies enacted in various Chinese provinces since the inception of the People's Republic. Researchers interested in accessing these valuable documents can make applications through the Survey and Research Center for China Household Finance.

On-line Appendix (not for publication)

A.1. The estimating equations

This part gives the full details of the estimation of the structural model.

Final goods and intermediate good:

The first-order conditions with respect to the optimal choices of household consumption of final goods and intermediate good purchase $\{\boldsymbol{c}_t^F, g_t^F\}$ for Equation (7) are:

$$\mu_t \frac{\partial U_t^W}{\partial \boldsymbol{c}_t^F} + (1-\mu_t)\frac{\partial U_t^H}{\partial \boldsymbol{c}_t^F} + \mathbf{1}'\lambda_t = \mathbf{0} \tag{A1}$$

$$\mu_t \left(\frac{\partial U_t^W}{\partial q_t^F} \frac{\partial\, q_t^F}{\partial g_t^F} \right) + (1-\mu_t)\left(\frac{\partial U_t^H}{\partial q_t^F} \frac{\partial q_t^F}{\partial g_t^F} \right) + \lambda_t = 0 \tag{A2}$$

In the next step, the explicit forms of utility functions of individuals from Equation (9) and the home production function from Equation (12) are taken to substitute into the expressions[11]:

After the operation, we can obtain the explicit forms for the consumption vector of final goods $\boldsymbol{c}_t^F$:

$$\mu_t \big(A_t^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}} \cdot \boldsymbol{\tau}_{1,t}^W \cdot (diag(\boldsymbol{c}_t^F))^{\psi^W-1} + (1-\mu_t)\big(A_t^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}} \cdot \boldsymbol{\tau}_{1,t}^H \cdot (diag(\boldsymbol{c}_t^F))^{\psi^H-1} + \mathbf{1}'\lambda_t = \mathbf{0} \tag{A3}$$

where $A_t^j = \boldsymbol{\tau}_{1,t}^j (\boldsymbol{c}_t^F)^{\psi^j} + \tau_2^j (q_t^F)^{\psi^j} + \tau_3^j (\ell_t^j)^{\psi^j}$.

and the consumption vector of the intermediate good g_t^F:

$$(\ell_t^W)^{\rho}(1-\rho)(g_t^F)^{-\rho}\big[\mu_t \big(A_t^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}} \tau_2^W (q_t^F)^{(\psi^W-1)} + (1-\mu_t)\big(A_t^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}} \tau_2^H (q_t^F)^{(\psi^H-1)}\big] + \lambda_t = 0 \tag{A4}$$

Leisure:

Similarly, the first-order conditions with respect to the optimal choices of the leisure time of wife and husband $\{\ell_t^W, \ell_t^H\}$ for Equation (11) are:

$$\mu_t \left(\frac{\partial U_t^W}{\partial \ell_t^W} + \frac{\partial U_t^W}{\partial q_t^F}\frac{\partial q_t^F}{\partial \ell_t^W} \right) + \lambda_t w_t^W = 0 \tag{A5}$$

$$(1-\mu_t)\frac{\partial U_t^H}{\partial \ell_t^H} + \lambda_t w_t^H = 0 \tag{A6}$$

Taking the explicit forms of the utility function and home production function to the equations above, we can determine that the leisure time of wife ℓ_t^W is:

$$\mu_t \big(A_t^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}} \big[\tau_2^W (q_t^F)^{\psi^W-1} \rho (\ell_t^W)^{\rho-1} (g_t^F)^{1-\rho} + \tau_3^W (\ell_t^W)^{\psi^W-1}\big] + \lambda_t w_t^W = 0 \tag{A7}$$

and the leisure time of husband ℓ_t^H is:

[11] diag() is the operation to convert a vector into a square matrix with the vector as the value of the diagonal. The detailed operation is $diag(x) = \sum_1^m e_i' x e_i e_i'$, where e_i is the i-th basis vector of $\mathbb{R}^m$.

$$(1-\mu_t)\big(A_t^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_3^H(\ell_t^H)^{\psi^H-1}+\lambda_t w_t^H=0 \tag{A8}$$

Equations (A3), (A4), (A7), and (A8) are all in the form where the right-hand side equals 0, which allows us to easily construct orthogonality conditions by replacing the right-hand sides with error terms. Thus, we have 8 errors e_1-e_8 for Equation (A3), one error for every Equation (A4), (A7), and (A8): e_9-e_{11}.

Using these constructions, we can derive the F.O.C. by combining the respective derivatives, enabling us to determine the substitution relationships between every pair of variables.

The substitution between two consumption items i and k is

$$\frac{\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_{1,i}^W(c_i^F)^{\psi^W-1}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_{1,i}^H(c_i^F)^{\psi^H-1}}{\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_{1,k}^W(c_k^F)^{\psi^W-1}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_{1,k}^H(c_k^F)^{\psi^H-1}}=1 \tag{A9}$$

where $A^j=\boldsymbol{\tau}_1^j(\boldsymbol{c}^F)^{\psi^j}+{\tau_2}^j(q^F)^{\psi^j}+\tau_3^j(\ell^j)^{\psi^j}$.

The marginal rate of substitution between a final good i and the intermediate good g^F is:

$$\begin{aligned}&\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_{1,i}^W(c_i^F)^{\psi^W-1}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_{1,i}^H(c_i^F)^{\psi^H-1}\\ =&(\ell^W)^\rho(1-\rho)(g^F)^{-\rho}\big[\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_2^W(q^F)^{(\psi^W-1)}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_2^H(q^F)^{(\psi^H-1)}\big]\end{aligned} \tag{A10}$$

The first-order conditions for the optimal leisure time for the wife ℓ^W and husband ℓ^H imply the marginal rates of substitution between leisure time and final good i or intermediate goods g^F is:

$$\begin{aligned}&\frac{\mu}{w^W}\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\big[\tau_2^W(q^F)^{\psi^W-1}\rho(\ell^W)^{\rho-1}(g^F)^{1-\rho}+\tau_3^W(\ell^W)^{\psi^W-1}\big]\\ =&\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_{1,i}^W(c_i^F)^{\psi^W-1}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_{1,i}^H(c_i^F)^{\psi^H-1}\end{aligned} \tag{A11}$$

and

$$\begin{aligned}&\frac{\mu}{w^W}\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\big[\tau_2^W(q^F)^{\psi^W-1}\rho(\ell^W)^{\rho-1}(g^F)^{1-\rho}+\tau_3^W(\ell^W)^{\psi^W-1}\big]\\ =&\ (\ell^W)^\rho(1-\rho)(g^F)^{-\rho}\big[\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_2^W(q^F)^{(\psi^W-1)}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_2^H(q^F)^{(\psi^H-1)}\big]\end{aligned} \tag{A12}$$

for wives, and

$$\begin{aligned}&\frac{1-\mu}{w^H}\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_3^H(\ell^H)^{\psi^H-1}\\ =&\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_{1,i}^W(c_i^F)^{\psi^W-1}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_{1,i}^H(c_i^F)^{\psi^H-1}\end{aligned} \tag{A13}$$

$$\begin{aligned}&\frac{1-\mu}{w^H}\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_3^H(\ell^H)^{\psi^H-1}\\ =&(\ell^W)^\rho(1-\rho)(g^F)^{-\rho}\big[\mu\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}}\tau_2^W(q^F)^{(\psi^W-1)}+(1-\mu)\big(A^H\big)^{\frac{1-\sigma^H-\psi^H}{\psi^H}}\tau_2^H(q^F)^{(\psi^H-1)}\big]\end{aligned} \tag{A14}$$

for husbands. Additionally, the marginal rate of substitution between wife's and husband's leisure time is

$$\frac{\mu}{1-\mu}\frac{w^H}{w^W}\big(A^W\big)^{\frac{1-\sigma^W-\psi^W}{\psi^W}-\frac{1-\sigma^H-\psi^H}{\psi^H}}=\frac{\tau_3^H(\ell^H)^{\psi^H-1}}{\tau_2^W(q^F)^{\psi^W-1}\rho(\ell^W)^{\rho-1}(g^F)^{1-\rho}+\tau_3^W(\ell^W)^{\psi^W-1}}. \tag{A15}$$

A.2. Empirical appendix

A.2.1. Reduced-form evidence on clothing expenditure

We supplement the reduced-form evidence with evidence on clothing spending, with subcategories such as men's, women's, and children's clothing.[12] Table A2 shows the proportions of clothing expenditure allocated to men's, women's, and children's clothing (if the family has children).

Attanasio & Lechene (2002) and Doepke & Tertilt (2011) who find that an aid program giving women more power increases spending on men's, women's and children's clothing, we find that shifts between men's and women's clothing. A wife bringing in better *hukou* significantly increases spending on women's clothing, reduces spending on men's clothing, and has statistically significant but trivial negative effects on spending on children's clothing. Using the more detailed *hukou* categories, reinforces the results using the binary category.

A.2.2. Reduced-Form evidence on the interaction effects of children

We expand the reduced-form analysis by considering the interaction effects associated with the presence of children. If *hukou* status influences intra-household bargaining, we would not expect strong interaction effects between *hukou* status and the expectation of having children in the family. However, while the presence of children affects intra-household bargaining, our focus is on whether it interacts specifically with *hukou* status.

Due to limitations in available information on children's *hukou* acquisition and the associated benefits, it is challenging to directly test how children's *hukou*-related benefits influence parents' intra-household bargaining. Nonetheless, we can examine whether the presence of children interacts with different types of *hukou*. If *hukou* status influences childbearing decisions, the number of children in a household would likely depend on the household's *hukou* structure, particularly the wife's *hukou* status. To explore this, we include an interaction term between *hukou* type and the number of children in our analysis.

If the results reveal that the presence of children interacts differently with various *hukou* statuses, it would suggest that a wife's hukou *hukou* impacts the family's childbearing decisions, which in turn could affect intra-household bargaining. Conversely, if no significant interaction is found, this would imply that the wife's *hukou* type has minimal influence on childbearing decisions and that children's *hukou*-related benefits do not necessarily impact intra-household bargaining. Tables A3 and A4 present the results of these interaction terms, based on the findings from Tables 2 and 3.

[Insert Table A3 here]

[Insert Table A4 here]

The estimation results for the *hukou* indicators and the presence of children are largely consistent with the previous findings in terms of both magnitude and direction. However, the interaction terms show limited significance, with the exception of the clothing expense category, which was analyzed in greater detail in the previous section by breaking down

[12] Other subcategories include textiles and accessories, which we do not consider here.

its subcategories. Consequently, we find no substantial evidence that the presence of children interacts significantly with different *hukou* types to influence intra-household bargaining.

As a result, it is unlikely that the presence of children has a meaningful interaction effect with *hukou* status in determining the Pareto weight within the structural estimation. Furthermore, as highlighted in Cherchye et al. (2012), which builds on Blundell et al. (2005), children influence household preferences rather than bargaining power since they neither contribute to household income nor have earning potential. In this framework, earning ability remains the primary determinant of bargaining power. Therefore, we adhere to the original estimation in both the reduced-form analysis and structural estimation to avoid redundancy, given the minimal interaction effects observed.

A.2.3. Additional detail from structural estimation

Table A5 shows the constant terms (ν_0), coefficients on age (ν_1), and number of children (ν_2) from the GMM estimation results reported in Table 4 while Table A6 does the same for Table 5.

Table A2: Reduced-form evidence II: *hukou* and spending on clothing

	Member's to the total spending on clothing					
Variable:	Wives' clothing		Husbands' clothing		Children' clothing	
Wife brought in*hukou*	0.027		-0.016		-0.004	
	(0.003)		(0.003)		(0.001)	
Group A		0.057		-0.040		-0.009
(wife brought in*hukou*)		(0.011)		(0.010)		(0.006)
Group B		0.046		-0.032		0.010
(wife didn't bring in*hukou* & she has local urban*hukou* and he doesn't)		(0.026)		(0.024)		(0.016)
Group C		0.031		-0.025		-0.005
(wife didn't bring in*hukou* & she and he both have local urban*hukou*)		(0.011)		(0.010)		(0.006)
Group D		0.002		-0.008		-0.002
(wife didn't bring in*hukou* & he has local urban*hukou* and she doesn't)		(0.016)		(0.015)		(0.008)
Number of children	-0.019	-0.019	-0.007	-0.007	0.022	0.022
	(0.003)	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)
Wife and husband age groups	×	×	×	×	×	×
Time fixed effects	×	×	×	×	×	×
Province fixed effects	×	×	×	×	×	×
Observations	28,799	28,799	28,799	28,799	24,834	24,834
R2	0.016	0.017	0.031	0.031	0.224	0.225

Note: Standard errors in brackets and errors are clustered at the household level. The spending is monthly based on the currency of yuan, and the values are log linearized. Group A, B, C, and D are arranged according to the assumed bargaining power ranks of wives within families. The baseline group is Group E.

Table A3: Reduced-form evidence IV: *hukou* and wife's contribution on social insurance

Variable:	Dependent variable: Wife's social insurance share					
Wife brought in *hukou*	0.140		0.117			
	(0.014)		(0.012)			
Group A		0.113		0.081		
		(0.087)		(0.083)		
Group B		-0.027		-0.036		
		(0.087)		(0.082)		
Group C		-0.020		-0.065		
		(0.131)		(0.123)		
Group E		-0.134		-0.113		
		(0.091)		(0.086)		
Wife years since settling					-0.019	-0.010
					(0.016)	(0.014)
Husband years since settling					0.010	-0.004
					(0.017)	(0.014)
Number of children	-0.034	-0.093	-0.022	-0.058	-0.077	-0.063
	(0.006)	(0.055)	(0.005)	(0.052)	(0.033)	(0.028)
Wife brought in *hukou**Children	0.082		0.044			
	(0.014)		(0.012)			
Group A*Children		0.082		0.044		
		(0.056)		(0.053)		
Group B*Children		0.062		0.037		
		(0.055)		(0.052)		
Group C*Children		0.220		0.159		
		(0.106)		(0.101)		
Group E*Children		-0.005		0.008		
		(0.061)		(0.058)		
Wife years settling*Children					0.052	0.031
					(0.014)	(0.012)
Husband years settling*Children					-0.039	-0.019
					(0.015)	(0.013)
Wife occupation			×	×		×
Husband occupation			×	×		×
Wife and husband age groups	×	×	×	×	×	×
Time fixed effects	×	×	×	×	×	×
Province fixed effects	×	×	×	×	×	×
Observations	23,615	23,615	23,615	23,615	23,615	23,615

R^2	0.145	0.149	0.313	0.315	0.098	0.286

Note: Standard errors in brackets and errors are clustered at the household level. The spending is monthly based on the currency of *yuan*, and the values are log linearized. Groups are arranged according to the assumed bargaining power ranks of wives within families (A is the highest). The baseline group is Group D, where neither spouse has local urban *hukou.*

Table A4: Reduced-form evidence V: *hukou* and wife's contribution on social insurance

	Consumption to the total income							
Variable:	Alcohol and tobacco		Clothes		Home improvement		Education and entertainment	
Wife brought in *hukou*	-0.004		0.007		0.004		-0.0001	
	(0.001)		(0.002)		(0.002)		(0.005)	
Group A		-0.009		0.034		0.017		0.039
		(0.003)		(0.005)		(0.005)		(0.011)
Group B		-0.005		0.028		0.013		0.040
		(0.003)		(0.005)		(0.005)		(0.010)
Group C		-0.021		0.024		0.013		0.012
		(0.009)		(0.011)		(0.012)		(0.023)
Group E		-0.011		0.023		0.009		0.024
		(0.006)		(0.007)		(0.012)		(0.016)
Number of children	0.001	0.0004	0.005	0.022	-0.0002	-0.001	0.027	0.033
	(0.001)	(0.003)	(0.001)	(0.005)	(0.001)	(0.003)	(0.002)	(0.008)
Wife brought in *hukou**Children	-0.0004		-0.0004		-0.003		0.007	
	(0.001)		(0.002)		(0.002)		(0.005)	
Group A*Children		0.0003		-0.017		-0.004		0.001
		(0.003)		(0.005)		(0.004)		(0.009)
Group B*Children		0.0004		-0.018		-0.002		-0.006
		(0.003)		(0.005)		(0.003)		(0.008)
Group C*Children		0.011		-0.009		-0.0001		0.017
		(0.010)		(0.012)		(0.009)		(0.022)
Group E*Children		0.008		-0.021		0.002		0.008
		(0.005)		(0.007)		(0.011)		(0.016)
Wife and husband age groups	×	×	×	×	×	×	×	×
Time fixed effects	×	×	×	×	×	×	×	×
Province fixed effects	×	×	×	×	×	×	×	×
Observations	29,023	29,023	29,023	29,023	29,023	29,023	29,023	29,023
R^2	0.075	0.076	0.120	0.121	0.012	0.013	0.050	0.051

Note: Standard errors in brackets and errors are clustered at the household level. The spending is monthly based on the currency of *yuan*, and the values are log linearized. Groups are arranged according to the assumed bargaining power ranks of wives within families (A is the highest). The baseline group is Group D, where neither spouse has local urban *hukou.*

Table A5: Details of parameter estimates to the structural estimation I

		Hukou types and *guanxi* (years since settling)					
		I		II		III	
Home production							
Number of children		-0.587		-0.400		-0.441	
		(0.229)		(0.142)		(0.226)	
Preference							
		Wife	Husband	Wife	Husband	Wife	Husband
Alcohol and tobacco	ν_0	-0.098	2.069	-0.089	2.357	0.439	2.024
		(3.949)	(1.074)	(66.945)	(1.583)	(80.890)	(1.717)
	ν_1	-1.497	-1.149	-2.374	-1.215	-2.509	-1.128
		(1.034)	(0.288)	(18.666)	(0.425)	(23.870)	(0.459)
Clothing expenditures	ν_0	-1.351	1.630	-1.276	1.861	-1.053	1.760
		(2.524)	(1.203)	(3.938)	(1.512)	(2.959)	(1.702)
	ν_1	-1.106	-1.079	-1.126	-1.138	-1.239	-1.090
		(0.659)	(0.322)	(1.037)	(0.408)	(0.785)	(0.452)
	ν_2	2.080	-	1.980	-	1.372	-
		(0.175)	-	(0.300)	-	(0.252)	-
Home improvement	ν_0	0.432	1.901	-0.282	2.142	-0.590	1.931
		(2.400)	(1.060)	(3.136)	(1.526)	(3.433)	(1.682)
	ν_1	-1.419	-1.128	-1.225	-1.192	-1.286	-1.124
		(0.616)	(0.285)	(0.820)	(0.410)	(0.902)	(0.447)
Medical expenditures	ν_0	-1.103	1.995	-0.712	2.150	-0.725	1.889
		(2.432)	(1.087)	(3.441)	(1.570)	(2.531)	(1.777)
	ν_1	-0.992	-1.154	-1.131	-1.192	-1.017	-1.131
		(0.624)	(0.292)	(0.901)	(0.422)	(0.665)	(0.472)
Transportation and utility	ν_0	-1.086	2.003	-2.295	2.262	-1.788	1.978
		(3.876)	(1.026)	(7.761)	(1.421)	(23.305)	(1.681)
	ν_1	-0.988	-1.162	-0.713	-1.226	-1.423	-1.133
		(1.026)	(0.276)	(2.058)	(0.382)	(6.152)	(0.447)
Entertainment and education	ν_0	-1.654	1.843	-1.769	2.035	-2.115	1.881
		(3.197)	(1.101)	(4.895)	(1.600)	(2.262)	(1.714)
	ν_1	-0.930	-1.123	-0.943	-1.168	-0.721	-1.138
		(0.819)	(0.295)	(1.275)	(0.430)	(0.613)	(0.455)
	ν_2	0.774	-	0.662	-	0.845	-
		(0.088)	-	(0.156)	-	(0.121)	-
Rent	ν_0	1.774	1.620	1.782	1.811	1.815	1.463
		(0.995)	(1.157)	(2.309)	(1.540)	(1.619)	(1.775)
	ν_1	-1.616	-1.072	-1.629	-1.121	-1.625	-1.024
		(0.277)	(0.311)	(0.598)	(0.416)	(0.454)	(0.473)
Misc.	ν_0	1.129	1.783	2.292	1.834	2.360	1.758
		(1.340)	(1.165)	(2.353)	(1.519)	(4.719)	(1.565)
	ν_1	-1.556	-1.100	-1.872	-1.113	-2.041	-1.080
		(0.358)	(0.312)	(0.603)	(0.409)	(1.300)	(0.417)
Intermediate goods (food)	ν_0	0.743	1.075	0.798	1.475	0.166	1.633
		(0.713)	(1.619)	(1.012)	(2.189)	(1.545)	(1.972)

ν_1	-0.963	-0.980	-0.969	-1.056	-0.784	-1.122
	(0.206)	(0.435)	(0.293)	(0.601)	(0.416)	(0.508)
Observations	29,023		29,023		29,023	

Note: This table provides the detailed parameters used to estimate the average weights of home production and different consumption categories in the utility functions for Table 4. ν_1 is the parameter for age. ν_2 in the categories of clothing expenditures and entertainment and education is the parameter for the number of children.

Table A6: Details of parameter estimates to the structural estimation II

		Hukou obtention and household *hukou* types					
		I		II		III	
Home production							
Number of children		-0.298		-0.504		-0.518	
		(0.097)		(0.243)		(0.212)	
Preference							
		Wife	Husband	Wife	Husband	Wife	Husband
Alcohol and tobacco	ν_0	-0.085	2.550	0.283	2.550	0.488	2.512
		(116.683)	(1.344)	(79.146)	(1.746)	(3.902)	(1.421)
	ν_1	-2.468	-1.268	-2.532	-1.268	-1.633	-1.269
		(33.865)	(0.360)	(22.565)	(0.467)	(1.062)	(0.381)
Clothing expenditures	ν_0	-1.044	1.947	-1.276	2.065	-2.437	2.369
		(2.535)	(1.430)	(3.180)	(1.806)	(5.243)	(1.535)
	ν_1	-1.246	-1.160	-1.279	-1.185	-0.889	-1.271
		(0.644)	(0.383)	(0.826)	(0.483)	(1.403)	(0.410)
	ν_2	2.321	-	2.550	-	2.303	-
		(0.251)	-	(0.190)	-	(0.283)	-
Home improvement	ν_0	-0.188	2.302	0.395	2.353	-0.012	2.487
		(3.668)	(1.285)	(4.714)	(1.646)	(2.941)	(1.393)
	ν_1	-1.260	-1.232	-1.512	-1.240	-1.359	-1.280
		(0.980)	(0.344)	(1.249)	(0.441)	(0.788)	(0.374)
Medical expenditures	ν_0	-0.603	2.307	-0.542	2.373	-1.237	2.548
		(3.927)	(1.287)	(4.830)	(1.639)	(2.670)	(1.413)
	ν_1	-1.151	-1.233	-1.232	-1.247	-0.996	-1.298
		(1.037)	(0.345)	(1.270)	(0.440)	(0.707)	(0.379)
Transportation and utility	ν_0	-1.619	2.392	-1.681	2.447	-1.446	2.550
		(7.747)	(1.260)	(14.713)	(1.625)	(11.849)	(1.453)
	ν_1	-0.932	-1.257	-1.039	-1.267	-1.003	-1.300
		(2.076)	(0.337)	(3.929)	(0.435)	(3.225)	(0.390)
Entertainment and education	ν_0	-1.481	2.160	-2.480	2.287	-0.582	2.276
		(6.159)	(1.419)	(10.097)	(1.786)	(4.810)	(1.443)
	ν_1	-1.111	-1.201	-0.921	-1.231	-1.291	-1.232
		(1.582)	(0.378)	(2.690)	(0.477)	(1.216)	(0.386)
	ν_2	1.303	-	1.498	-	0.825	-
		(0.294)	-	(0.248)	-	(0.143)	-
Rent	ν_0	2.225	1.840	1.762	2.024	2.131	2.170
		(1.338)	(1.425)	(1.201)	(1.793)	(1.704)	(1.413)
	ν_1	-1.720	-1.131	-1.631	-1.175	-1.753	-1.213
		(0.362)	(0.381)	(0.329)	(0.481)	(0.462)	(0.380)
Misc.	ν_0	1.701	2.051	1.872	2.198	1.041	2.356
		(1.966)	(1.416)	(1.914)	(1.747)	(1.937)	(1.413)
	ν_1	-1.692	-1.171	-1.836	-1.203	-1.579	-1.249
		(0.541)	(0.379)	(0.508)	(0.468)	(0.483)	(0.379)
Intermediate goods (food)	ν_0	0.645	1.877	0.067	2.062	0.401	2.046
		(1.156)	(1.662)	(1.203)	(1.994)	(1.029)	(1.880)

ν_1	-0.950	-1.150	-0.858	-1.212	-0.867	-1.217
	(0.322)	(0.441)	(0.342)	(0.535)	(0.289)	(0.504)
Observations	29,023		29,023		29,023	

Note: This table provides the detailed parameters used to estimate the average weights of home production and different consumption categories in the utility functions for Table 5. ν_1 is the parameter for age. ν_2 in the categories of clothing expenditures and entertainment and education is the parameter for the number of children.