PARTNER SELECTION IN POST-REFORM CHINA: POWER, PRIVILEGE, AND NORMS

BY

LIQUN ZENG

DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Sociology
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2020

Urbana, Illinois

Doctoral Committee:

Professor Tim Liao, Chair
Professor Kevin Leicht
Associate Professor Monica McDermott
Associate Professor Angela Lyons

ABSTRACT

The nature of marriage is both economic and social, making it an ideal object for one to study the individual behaviors impacted by social transformations that started from the economic realm but ultimately altered the social structure. Market transition theory depicted the transformation in China since 1978 as a shift from hierarchies to market in a socialist economy. In a state-regulated economy of central control and redistribution, the direct administrators in charge of redistribution of resources enjoyed most of the privileges in the regime. The re-introduction of market brought new incentives and opportunities that altered the distribution of resources and hence the sources of power and privilege.

Inspired by and extended from the investigations on the sources of power and privilege in the economic life of Chinese since 1978, this dissertation focused on the transformed order and sources of power and privilege in the realm of the social life, specifically the marriage and partner selection in the post-Reform China. How did individuals embedded in a society of strong state influence respond to new opportunities, incentives, and constraints that seemly emphasizes individualism? Who gained and who lost power in partner selection since the Reform? Did individuals make new choices in their partner selection? This dissertation aimed at answering these questions through the study on marriage and partner selection guided by a social exchange perspective.

The dissertation studied the partner selection in post-Reform China in two cases— (1) the household registration system (the *hukou* system) as a case of state regulation and (2) the housing market as a case of economic growth and market impact. Using panel survey data and social media data, I quantitatively and qualitatively studied (1) the impact of *hukou* policy on the partner selection of female rural-to-urban migrants; (2) the impact of decreased house affordability on the partner selection of urban Chinese; and (3) the tension between the social norm of marriage and the constraints of partner seekers to act accordingly and the consequences of this mismatch on the individual participants in the marriage market.

The findings suggest that the dynamics of power and privileges in the marriage market shifted along with the shift of access to the economic and social resources, which, after 1978, were mainly determined by the coupling of market and state. Individuals who detached from their local communities of origin utilized "personal assets" such as beauty or educational attainment to seek social mobility via marriage in response to new opportunities and constraints brought by the introduction of market. As economic and social resources are more abundant in urban China particularly after the Reform, those who could provide relatively better access to these resources concentrated in cities gained power in the marriage market, be it city locals relative to rural migrants, or property owners relative to property have-not.

When the house is still more or less a must for marriage but the young men and women in urban China can barely afford a house only by themselves, the influence from their more financially capable parents found an easy way to influencing their children's marital decision. Single women felt great pressure from their parents who pushed them entering marriage "on-time" and in the end, turned the family of origin from a place of support to a place of stress. When the barrier and cost of family formation increased, the emotional support one can receive from family was compromised: the trust between a groom and a bride, the understandings from the natal family, and the well-being in the extended family of a married couple are all impacted as the consequences of a more expensive family formation.

ACKNOWLEDGEMENTS

None of this would have been possible without the advice, support and guidance of my advisor, Dr. Tim Liao. I am extremely grateful for the many opportunities he provided me for academic participation, and his careful supervision and guidance was essential for the completion of this dissertation. The many valuable, critical discussions I have had with him over the years have taught me how to become a better researcher and sociologist.

I am also extremely grateful for the collaborations and advisory I have had these past few years. I especially want to thank Tianyu Qiao, who collaborated with me in the study on the housing price and partner selection in China, and the CFPS team at the Peking University, China, who provided me access to the restricted CFPS panel data. I also want to thank Dr. Monica McDermott for the discussions on the intersectionality of race, class, gender, and Dr. Cynthia Buckley for the discussions on migration, which inspired my interests in female rural migrants in China and guided the study on the state regulation and partner selection presented in this dissertation.

I am thankful to my dissertation committee: Dr. Kevin Leicht, Dr. Monica McDermott, and Dr. Angela Lyons for all their advice and guidance to my thesis research, their feedback has made this work stronger.

I am indebted to Dr. Maryalice Wu and my colleagues in the Data Analytics group at the Center for Innovation in Teaching & Learning, UIUC. The intellectual sparks generated during our daily work in statistics consulting nourished my skills in data analytics. I also learned how to better communicate the results of data analytics with different audiences during my time at CITL.

I am extremely grateful for all the financial support I have received, including the China Scholarship Council (CSC), UIUC Department of Sociology, UIUC CTIL Data Analytics.

Last but not least, I am indebted to my family and friends for their support and encouragement over the years.

Dedicated to Mom, Dad, and Jiashun

for their love and support.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

Motivations

Research Questions

Market transition theory depicted the transformation in China since 1978 as "a shift from hierarchies to market in a socialist economy" (Nee, 1989), which "changes the determinants of socioeconomic attainment and therefore the sources of power and privilege" (Nee, 1989). For example, Nee (1989) explained the mechanism of increased income per capita of peasants in post-reform rural China as an empowerment to direct producers in the economic production when market nourished an alternative niche of income opportunity that once was strictly administrated by local cadres under a so-called redistributive economy that defined by Polanyi as an economy that collects and distributes goods through centralized decision making (Polanyi, 1957).

While in a state-regulated economy of central control and redistribution, the cadre or the direct administrators in charge of redistribution of resources enjoyed most of the privileges in the regime, the re-introduction of market or a marketlike economy brought new incentives, and opportunities to direct producers, in rural China, namely, the peasants, and in urban China, the new entrepreneurs (Nee, 1989).

Inspired by and extended from the investigations on "the sources of power and privilege" (Nee, 1989) in the economic life of Chinese since 1978, this dissertation focused on the transformed order and sources of the power and privilege in the realm of social life of Chinese in the post-reform period when market has been re-introduced into a redistributive economy. On one hand, resources and privileges are no longer only controlled and shared by cadres in urban

villages and urban *danwei* (in English, work unit). A market provides an alternative package of means of living including new employment opportunities and sources of income that release individuals from their tight bond with their villages or work unit. While the exchange is one of the most fundamental social behaviors, a market also provides a new playground for exchange and a more general medium of exchange—money, in contrast to those specific and concrete modes of exchange which heavily rely on close relations within a village or *danwei*. On the other hand, increased differentiation and inequality emerged as an outcome of the market economy. Personal properties such as private apartments or vehicles could then be purchased in the market and became ubiquitous whereas they were seldom heard of in the pre-reform time. Cumulative private properties created new dynamics of the power relationship between community members.

With all these changes brought by the Reform, the marriage and partner selection of Chinese after the Reform became an ideal object for us to study the impact of these changes, as the nature of marriage is both economic and social so that it is an individual behavior on the intersection of the impacts brought by the Reform that started from the economic realm but ultimately altered the social structure. A looser bond tied to the local rural community for villagers and to the urban *danwei* for city residents makes it possible for these men and women to arrange their lives in a way that is different from their previous generations. But increased differentiation and inequality in economic and social status set novel constraints and barriers to these attempts. A larger and more diverse pool of potential suitors, a revised set of standards of marriage, and new meanings and tasks for marriage all accompanied with "the shift from hierarchies to market in a socialist economy" (Nee, 1989). How did individuals embedded in a society of strong state influence respond to new opportunities, incentives, and constraints that seemly emphasizes individualism? Who gained and who lost power in partner selection since the

Reform? Did individuals make new choices in their partner selection? This dissertation tried to answer these questions through the study on marriage.

To fully understand the constraints of marriage introduced by social transformation in contemporary China, I narrowed down the scope of structural factors studied in this dissertation to two cases – (1) the household registration system (the *hukou* system) as a case of state regulation and (2) the housing market as a case of economic growth and market impact– for the inquiry on individual's partner selection in China. I also studied the responses of the Chinese younger generations to the constraints in marriage by investigating their thoughts and attitudes to the changed and unchanged norms in partner selection in the 2010s China, which sheds light on the understanding of the meaning of marriage to the younger generations.

Demographic Trends of Marriage in Recent China

A global demographic trend is the backdrop of the general pattern of marriage in recent decades. As suggested by the Second Demographic Transition, the theory of which argues that marriage is gradually becoming merely an option instead of a norm for people to organize their personal life and intimate relationship (e.g. Cherlin, 2004; Coontz, 2004; Lesthaeghe, 2010), and the phenomenon of postponement in marriage has been observed not only in western countries such as the United States or European countries but also in other recently emerged economies such as countries in east and southeast Asian (Jones & Yeung, 2014; Lesthaeghe, 2010).

The trend of increasing age at first marriage in China aligned with this transition but also has its distinguishable features. China is a country heavily influenced by state regulations and interventions, whereas it is also one of the most prominent economies in the 20th and 21st centuries in terms of its growing speed and scale. The two underlying forces, state regulation,

and economic growth intertwined and together shaped the marital decisions of Chinese. Some of the state interventions, such as the one-child policy introduced in 1979 and ended in 2015 that exacerbated the birth preference on boy and resulted in an unbalanced sex ratio and the revision of legal marriage age in 1980 that created the greatest marriage ages for female and male in the world, certainly affected the pattern of marriage of Chinese. The economic differentiation and inequality brought by the market-oriented economic reform, a western culture of marriage that came with it, and an enhanced process of urbanization since the reform may also affect the marriage-related decisions including the timing of marriage of the Chinese younger generations.

The first salient increase of age at first marriage in China started from the 1970s, mainly due to the state policy on family and birth control to postpone the first birth. When times came to the 1990s, the age at first marriage showed another radical increase. Researchers suggested this change was mostly driven by individual choice as state policy on marriage and birth control remained largely unchanged during the time (Cai & Wang, 2014). A further increase of age at first marriage and the appearance of a noticeable female population that never married signaled a new trend of the marriage of Chinese since 2000. The proportion of never-married at age of 30 kept rising from 2000 to 2010, growing from 10.3% for men 200 and 2.2% for women to 18.1% for men and 8.8% for women in 2010 (Feng, 2018). Based on a calculation with nuptiality tables, Feng (2018) found that the age at first marriage increases rapidly over time from 1981 to 2010 from 22.43 to 26.7 for urban women and 19.75 to 24.73 for rural women.

One well-documented deferring force on marriage is education. Studies on the marriage of Chinese confirmed that higher educational attainment tends to postpone the timing of marriage, especially for the female population (Cai & Wang, 2014; Qian & Qian, 2014; Yu & Xie, 2015). This dissertation went beyond the individual-level characteristics such as education

to examine structural impacts on marital behaviors by investigating the structural or institutional constraints and barriers on marriage. When the population of never-married grew significantly, the majority of Chinese still ended into marriage despite the late entry. There is little research on the married population with a focus on the constraints of family formation brought by social transformations and there is little research on the question that how people in the end make their marriage happen. This dissertation aimed to fill this gap.

Along with the trend of late marriage, the Second Demographic Transition also indicates the appearance of alternative forms of intimate unions. Diversified arrangements other than marriage (e.g. cohabitation) for the intimate relationships and child-bearing did not attenuate the meaning of marriage, either economically or symbolically, but instead add weights to it (Cherlin, 2004). This dissertation also aimed to investigate the meaning and the nature of marriage in the context of radical social change as China has experienced and is experiencing, particularly the meaning of marriage to individual's social mobility.

While the increase of age at first marriage and alternative forms of intimate unions in China echo with the global demographic trend in marriage, a high sex ratio is a local demographic factor that potentially shaped a segregated marriage market in China. China is experiencing a high sex imbalance mostly due to a combination of preference of sons in East Asian tradition, the easy access to sex-selective technology, and a birth control policy that encourages a low fertility rate (Park & Cho, 1995). An estimated sex ratio at birth in 2005 is 120, meaning almost 120 boys were born for every 100 girls, with a peak of 126 in rural China. And this is a steadily worsening trend (Zhu, Lu, & Hesketh, 2009). In 2005, males under the age of 20 exceeded females by more than 32 million in China (Zhu et al., 2009).

Intuitively, the excess of men will change the landscape of the Chinese marriage market by increasing the relative bargaining power of women in the market because there are more men and fewer women. Yet many of these excess men were born in rural areas, and some of them then migrated to cities as cheap labor, where the hukou system denies their full residentship and severely reduces their competitiveness in the urban marriage market. A study found that the viable brides for these men are not in the cities they work but still in their place of birth, as the majority were married to the women from the same county as theirs (Wei & Zhang, 2011). They either return to their home town and marry a woman there or marry a local rural woman before migration, which suggests that the impact of this demographic trend on the rural and urban marriage market should be different as these two markets are segregated. Wei and Zhang (2011) found rural households with a son respond to a rise in local sex ratio by increasing their household savings as they are directly and indirectly related to the attractiveness of their children in the marriage market. The household savings of urban families with a son respond even more strongly to such a rise. On the other hand, rural households with a daughter do not show a significant response to a rise in the local sex ratio. While interestingly, the urban daughter-families also tend to increase household savings with a more skewed local sex ratio (Wei & Zhang, 2011). This finding suggests that the response of the rural marriage market to a high sex ratio may well follow the intuitive, but the urban marriage market is more complicated and needs further investigation than pure calculation.

Brief Backgroud of Chinese Hukou System and Housing Market

The *hukou* system, or household register system, literally means "households and mouths" in Chinese, has a long history that could at least date back to the Han dynasty (206 BC - 220 AD) (Wu, 2013). The modern *hukou* system in its current form was first established in Chinese cities

in 1951 and extended to rural areas in 1955 (Chan, 1994; Chan & Zhang, 1999). In the history of the *hukou* system, it has served two main purposes – to track population and control migration and to facilitate resource allocation within and across areas, especially in the context of the great rural-urban divide in China. These two purposes usually reinforce each other, resulting in an institution for redistributing social goods (Wu & Treiman, 2004).

Demand for cheap labor rises in Chinese cities in the post-reform era. New policies have been introduced into the system to relax the control over rural-urban migration so that rural-to-urban migrants could take the job vacancies that are no longer attractive to urban residents (Feng, Zuo, & Ruan, 2002; Yang & Guo, 1996). Figure 1.1 shows the increasing volumes of migration after the reform (Fan, 2007). However, when migration from rural to urban areas became easier, the migrants' access to social goods remains closely related to the *hukou* of the residents and the *hukou* conversion continues to be difficult to achieve, especially in certain major cities (Chan, 1994; Wu & Treiman, 2004, 2007; Zhang & Treiman, 2013). The *hukou* system no longer impedes individuals' migration but remains the determining factor in defining full residentship in Chinese cities (Zhang, 2012).

On the other hand, the housing of urban residents was under the umbrella of the welfare system after 1949. Since 1979, a housing market has been introduced into urban China and replaced the welfare system of housing. Housing gradually became a commodity that was exposed to the influence of the market and was no longer a piece of collective welfare (Zhu, 2000). When the time came to 2010s, compared to the income of many urban Chinese at marriageable age, the level of housing price is exceptionally high and almost unfordable (Li & Song, 2016), which is mostly driven by the enormous economic growth after the Reform (C. Zhang et al., 2012).

In this dissertation, I examined two tensions introduced by the social transformations happened in China since 1978 – (1) the tension between the increasing volume of migrants and the barrier of migration implemented by household registration system (the *hukou* system) and (2) the tension between the decreasing house affordability and the thus the increasing cost of marriage preparation – on individual's partner selection. Preparing a house to a new family is a long-standing and still popular notion, but homeownership becomes nearly impossible for many residents in today's Chinese big cities. Without a local *hukou*, migrants find them particularly inconvenient or even impossible to get access to public education, healthcare for their children in the place they live and work. For the Chinese rural migrants who plan to reside permanently in the cities, they have to circumvent the restrictions placed by the *hukou* system, marrying the locals and obtain the urban *hukou* is one of the options. Specifically, I tried to answer these questions regarding the constraints of marriage related to state regulations and market impact: Do the new tensions introduce new incentives and preferences to partner selection? How an individual's marriage is affected by them? What are the responses from the marriageable population to these tensions? And who gained or lost power in their partner selection?

Framework

The dissertation includes three substantial chapters that deal with different dimensions of the research questions above. Starting from the study on the incentive of state policy on the partner selection of female migrants to an incentive that affected a broader population, the housing prices, then ended with the investigation on the social norm of marriage itself.

Chapter 2 focused on the relation between state regulations and migrants' marriage choices. Scholars in the field of international migration research have paid extensive attention to

state migration policies and their social consequences. People moving internally face fewer challenges set by migration policies, but this is not always true. In China, the *hukou* system, or the household registration system (also known as the "residence permit system"), controls internal migrants, administrating the distribution of public goods, especially in urban areas, and reinforcing the rural-urban divide (Wu & Treiman, 2004). It is a barrier for rural-to-urban migrants wanting to gain full urban benefits. Gaining a local *hukou* in destination cities, namely, converting their original rural *hukou* to an urban one, plays a critical role in these migrants' access to public education, healthcare, and other social goods in the urban areas (Wu & Treiman, 2004).

People who use marriage to gain an urban *hukou* and hence a full residentship in the cities engage in a quid pro quo act consistent with the general literature on status exchange theory (Davis, 1941; Merton, 1941) and the specific literature on exchange in the marriage market (England & McClintock, 2009; Fu, 2001; Kalmijn, 1993; McClintock, 2014; Qian, 1997; Sassler & Joyner, 2011). A recent study suggested that Chinese rural women can compensate for their undesirable "rural roots" with their appreciated femininity (e.g. hard-working or physical attractiveness) by marrying urban men (Lui, 2016). The study in this chapter focused on the female migrants who converted *hukou* via marriage with men less educated or older than themselves. I tested the hypotheses that that (1) the educational difference between migrants and partners tends to be greater for the female migrants who obtained their urban *hukou* via marriage; and that (2) the age difference between the partners and the migrants tends to be greater for the female migrants who obtained their urban *hukou* via marriage. With the two hypotheses, I quantitatively examed the impact of state regulations on the preference of heterogamy in the theoretical framework of social exchange theory.

Continuing the interests on the migrant population but expanding the research horizon of incentives in partner selection, Chapter 3 investigated the impact of decreased house affordability on marriage in recent China where rocketing housing prices affect almost all city residents and particularly city migrants who attempt to form a family. Not everyone can afford a marriage. There is a hurdle for women and men to jump over so that they could enter a marriage. Triggered by the transformation in the institution of housing re-distribution (Zhu, 2000) and as a consequence of economic growth (Zhang et al., 2012), the decreased house affordability seems to be one of such a hurdle in front of many single urban Chinese today (e,g, (Xinhua News Agency, 2011)). Ample studies documented the phenomena that men are less likely to marry and more likely to postpone their decision to form a family because they do not have and cannot afford a house (e.g., Börsch-Supan, 1986; Clark, 2012; Haurin, Hendershott, & Kim, 1993; Hughes, 2003; Hui, Zheng, & Hu, 2012; Mulder & Billari, 2010; Yu & Xie, 2013).

The relative cost of marriage increases so much as the yearly income of a single young man is almost incomparable to the total price of a house in some major Chinese cities today (Li & Song, 2016). But an ideal marriage for the urban Chinese should include a house as a staple item in their list of marriage preparation, even in the context of decreased house affordability (e.g. Zhou, 2015). According to the identity theory in marriage (Akerlof & Kranton, 2000; Watson & McLanahan, 2011), not only the cost of marriage put barriers in front of single women and men in a serious relationship, the decreasing likelihood to fulfill an ideal marriage which is a crucial element of the identity of middle-class triggers further hesitation for people to wed.

Identity theory suggests that the closer an individual match her current status to the ideal, the better prepared she perceives herself to be to a marriage, and hence more likely to marry and form a family (Watson & McLanahan, 2011). In chapter 3, the study tried to answer this question

– what makes it possible for people to jump over the hurdle of marriage and form their families? Theories on family formation focus on the force of exchanging and matching between a man and a woman. Individuals could either exchange or trade what they have with their potential partner to generate extra gains so that they could reach the expectation of an ideal marriage, or find a matched partner and add what they have together to reach the standard. All these theories shed light on partner selection and the pattern of similarity or differences between husband and wife. In Chapter 3, I examined the relationship between the marital heterogamy and the changing and mostly increasing housing prices to see how people responded to the dilemma of a high standard of marriage and the improbability of fulfilling such standard via partner selection and tested whether there is an exchange or matching between husband and wife in their marriage

When the standard of marriage is fundamental to the previous study in Chapter 3, Chapter 4 is dedicated to further study the standard of marriage in recent China. In other words, when people think a couple is ready to wed? Or more generally, what is the norm of marriage preparation of urban Chinese? The study in the fourth chapter of the dissertation focused on the voice of China's younger generation that are at marriageable age and thus affected the most by the rocketing housing price. I investigated the attitudes, opinions, feelings, and experiences they shared in Chinese social media. Evidence suggests that the tension between the social norm of homeownership as an expectation and preparation for marriage and the more and more unfordable housing affects the actual marital behaviors of urban Chinese (Yu & Xie, 2013). Chapter further extend this study and explore how such tension may, in turn, reshape the norm of marriage preparation, and how the singles react and feel about the changing and/or unchanged norms in marital behaviors.

Data and Methods

Table 1.1 summarizes the datasets used in the dissertation. Chapter 2 and Chapter 3 are based on survey data, while Chapter 4 investigated the Chinese social media data collected by the author. The coverage of time of these datasets varies, but the major coverage is the 2000s and 2010s, which are the decades witnessed enhanced mobility of migrants from rural China and the drastic increase of housing prices.

For Chapter 2 and Chapter 3, the methods I used are mainly statistical modelings. Specifically, in Chapter 2, I used gamma regression and generalized ordinal logistic regression models to predict the age and educational difference of a couple, respectively. In the third chapter, the effect of housing prices is the focus, thus the period effects need to be treated carefully. I used a variation of the Hierarchical Age-Period-Cohort (HAPC) model (Liao & Özcan, 2013) proposed by Yang and Land (Yang, 2008; Yang & Land, 2006) to tease out the age, period, and cohort effects. The HAPC provides a solution to the "identification problem" of exact linear dependency (i.e. Period = Age + Cohort) that traditional models suffer when they include age, period, and cohort effects simultaneously in the model to analyze repeated cross-sectional surveys. The HAPC model estimates fixed effects of age and other individual-level characteristics on the first level and random cohort and period effects on the second level. These two levels are cross-classified and formed a "cell" of a cohort-period nexus. This "cell" is the unit of a higher level. Because individuals of one particular cohort can belong to multiple periods, and vice versa, when at least one of these two effects are regarded as random, the APC linear dependency is broken, which solves the "identification problem".

Chapter 4 is more of a data-driven study. I used both quantitative and qualitative methods to analyze the text data I collected via Python codes and *Weibo* API. The development in

computational social sciences offers new techniques to extract themes and meanings from a great number of texts beyond the capability of human readers to consume. These new techniques provide new opportunities to fully realize the great potentials of online interactions in the studies of attitudes, opinions, and sentiments. In the study of Chapter 4, I applied the techniques in machine learning to discover topics in the *Weibo* posts and identify meanings of the keywords of interests given by the *Weibo* users in their daily online interactions. But the capability of machine learning and natural language processing techniques is still limited in the current stage. I also conducted a qualitative content analysis on a sample of the posts collected to provide an in-depth interpretation of the topics and meanings.

Figure and Table

Figure 1.1. Volumes of interprovincial migration within and among regions, 1990 and 2000 censuses. (From Fan, 2007)

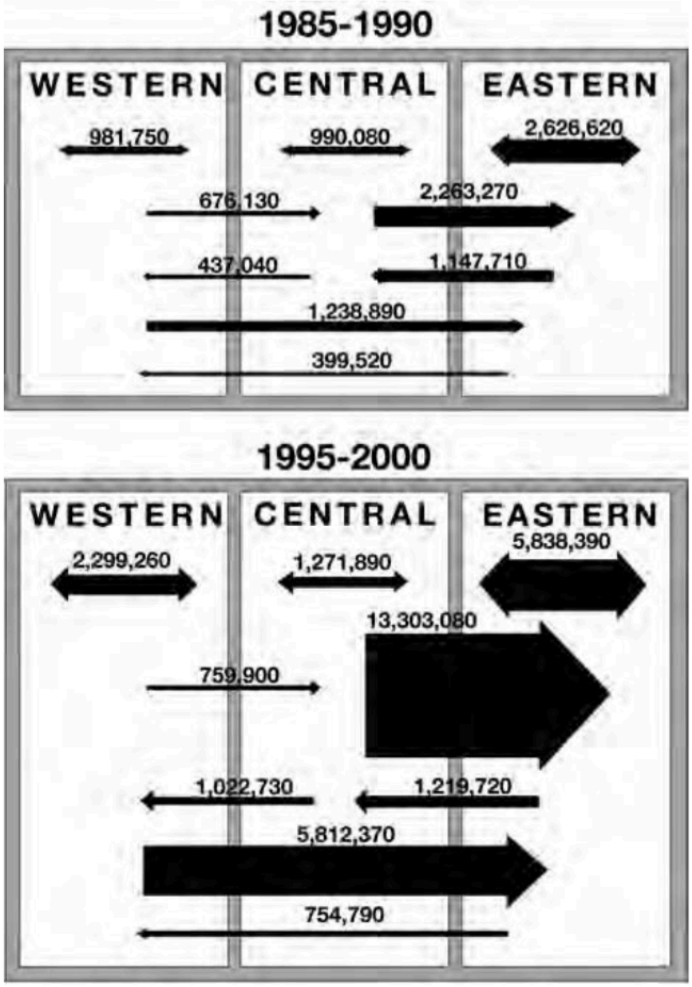


Table 1.1. Summary of datasets used in the dissertation

Dataset	Type	Source	Unit	*N*	Coverage of Time	Chapter
Chinese General Social Survey (CGSS) (2010)	cross sectional survey	Renmin University, China	individual respondent	1,333[a]	1978-2010[b]	2
China Family Panel Studies (CFPS) (2010, 2012, 2014)	panel survey	Peking University, China	individual respondent	1,482	2000-2014[b]	3
Housing prices data	yearly statistics	from China Statistical Yearbook Database, cleaned and computed by the author	municipal level of city	413	2000-2014	3
Sina *Weibo* posts	text document	collected by the author	document	88,892	2009-2017	4

a Only keep the migrant subset of the original dataset.
b Year of marriage of the respondents.

References

Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *The Quarterly Journal of Economics*, *115*, 715–753.

Börsch-Supan, A. (1986). Household formation, housing prices, and public policy impacts. *Journal of Public Economics*, *30*, 145–164.

Cai, Y., & Wang, F. (2014). (Re) emergence of late marriage in Shanghai. In *Wives, husbands, and lovers: Marriage and sexuality in hong kong, taiwan, and urban china* (p. 97). Stanford University Press.

Chan, K. W. (1994). *Cities with invisible walls: reinterpreting urbanization in post-1949 China*. Oxford University Press.

Chan, K. W., & Zhang, L. (1999). The Hukou System and Rural-Urban Migration in China: Processes and Changes. *The China Quarterly*, *160*, 818.

Cherlin, A. J. (2004). The deinstitutionalization of American marriage. *Journal of Marriage and Family*, *66*, 848–861.

Clark, W. A. V. (2012). Do women delay family formation in expensive housing markets? *Demographic Research*, *27*, 1–24.

Coontz, S. (2004). The World Historical Transformation of Marriage. *Journal of Marriage and Family*, *66*, 974–979.

Davis, K. (1941). Intermarriage in Caste Societies. *American Anthropologist*, *43*, 376–395.

England, P., & McClintock, E. A. (2009). The Gendered Double Standard of Aging in US Marriage Markets. *Population and Development Review*, *35*, 797–816.

Fan, C. C. (2007). *China on the Move: Migration, the State, and the Household*.

Feng, K. (2018). Changing Marital Behavior and Late Marriage in Post-reform China. *PAA: Marriage, families, households, and unions*.

Feng, W., Zuo, X., & Ruan, D. (2002). Rural Migrants in Shanghai: Living Under the Shadow of Socialism1. *International Migration Review*, *36*, 520–545.

Fu, V. K. (2001). Racial Intermarriage Pairings. *Demography*, *38*, 147–159.

Haurin, D. R., Hendershott, P. H., & Kim, D. (1993). The Impact of Real Rents and Wages on Household Formation. *The Review of Economics and Statistics*, *75*, 284–293.

Hughes, M. E. (2003). Home Economics: Metropolitan Labor and Housing Markets and Domestic Arrangements in Young Adulthood. *Social Forces*, *81*, 1399–1429.

Hui, E. C., Zheng, X., & Hu, J. (2012). Housing price, elderly dependency and fertility behaviour. *Habitat International*, *36*, 304–311.

Jones, G. W., & Yeung, W. J. J. (2014). Marriage in Asia. *Journal of Family Issues*, *35*, 1567–1583.

Kalmijn, M. (1993). Trends in black/white intermarriage. *Social Forces*, *72*, 119–146.

Lesthaeghe, R. (2010). The Unfolding Story of the Second Demographic Transition. *Population and Development Review*, *36*, 211–251.

Li, P., & Song, S. (2016). What pushes up Chinas Urban housing price so high? *Chinese Economy*, *49*, 128–141.

Liao, T., & Özcan, B. (2013). Family Forms Among First- and Second-Generation Immigrants in Metropolitan America, 1960–2009. In et al. Fong (Ed.), *Immigrant adaptation in multi-ethnic societies: Canada, taiwan, and the united states*. New York, NY: Routledge.

Lui, L. (2016). Gender, rural-urban inequality, and intermarriage in China. *Social Forces*, *95*, 639–662.

McClintock, E. A. (2014). Beauty and status: The illusion of exchange in partner selection? *American Sociological Review*, *79*, 575–604.

Merton, R. K. (1941). Intermarriage and the social structure: Fact and theory. *Psychiatry*, *4*, 361–374.

Mulder, C. H., & Billari, F. C. (2010). Homeownership regimes and low fertility. *Housing Studies*, *25*, 527–541.

Nee, V. (1989). A theory of market transition: From redistribution to markets in state socialism. *American Sociological Review*, *54*, 663–681.

Park, C. B., & Cho, N.-H. (1995). Consequences of Son Preference in a Low-Fertility Society : Imbalance of the Sex Ratio at Birth in Korea. *Population and Development Review*, *21*, 59–84.

Polanyi, K. (1957). *The great transformation: The political and economic origins of our time*.

Qian, Y., & Qian, Z. (2014). The gender divide in urban China: Singlehood and assortative mating by age and education. *Demographic Research*, *31*, 1337–1364.

Qian, Z. (1997). Breaking the racial barriers: Variations in interracial marriage between 1980 and 1990. *Demography*, *34*, 263–276.

Sassler, S., & Joyner, K. (2011). Social exchange and the progression of sexual relationships in emerging adulthood. *Social Forces*, *90*, 223–245.

Watson, T., & McLanahan, S. (2011). Marriage meets the joneses relative income, identity, and marital status. *The Journal of Human Resources*, *46*, 482——517.

Wei, S. J., & Zhang, X. (2011). The competitive saving motive: Evidence from rising sex ratios and savings rates in China. *Journal of Political Economy*, *119*, 511–564.

Wu, G. (2013). Hukou ce shang de zhong guo. Guojia renwen lishi. *Wanqing*, 16–11.

Wu, X., & Treiman, D. J. (2004). The household registration system and social stratification in China: 1955–1996. *Demography*, *41*, 363–384.

Wu, X., & Treiman, D. J. (2007). Inequality and equality under Chinese socialism: The hukou system and intergenerational occupational mobility. *American Journal of Sociology*, *113*, 415–445.

Xinhua News Agency. (2011). *Survey shows young Chinese postpone marriage due to housing pressure*.

Yang, X., & Guo, F. (1996). Gender differences in determinants of temporary labor migration in China: A multilevel analysis. *International Migration Review*, *33*, 929–953.

Yang, Y. (2008). Social Inequalities in Happiness in the United States, 1972 to 2004: An Age-Period-Cohort Analysis. *American Sociological Review*, *73*, 204–226.

Yang, Y., & Land, K. C. (2006). A Mixed Models Approach to Age-Period-Cohort Analysis of Repeated Cross-Section Surveys: Trends in Verbal Test Scores. In Ross M. Stolzenberg (Ed.), *Sociological methodology*. Boston: Blackwell Publishing.

Yu, J., & Xie, Y. (2013). Social change and trends in determinants of entry to first marriage (She hui bian qian yu chu hun ying xiang yin su de bian hua). *Sociological Research (She Hui Xue Yan Jiu)*, *1406*.

Yu, J., & Xie, Y. (2015). Changes in the Determinants of Marriage Entry in Post-Reform Urban China. *Demography*, *52*, 1869–1892.

Zhang, C., An, G., & Yu, X. (2012). What Drives China's House Prices: Marriage or Money? *China and World Economy*, *20*, 19–36.

Zhang, L. (2012). Economic Migration and Urban Citizenship in China : The Role of Points Systems. *Population and Development Review*, *38*, 503–533.

Zhang, Z., & Treiman, D. J. (2013). Social origins, hukou conversion, and the wellbeing of urban residents in contemporary China. *Social Science Research*, *41*, 71–89.

Zhou, F. (2015). *A huge burden for men seeking marriage*. Beijing.

Zhu, J. (2000). The Changing Mode of Housing Provision in Transitional China. *Urban Affairs Review*, *35*.

Zhu, X. W., Lu, L., & Hesketh, T. (2009). China's excess males, sex selective abortion, and one child policy: Analysis of data from 2005 national intercensus survey. *BMJ (Online)*, *338*, 920–923.

CHAPTER 2: SOCIAL EXCHANGE OF PARTNER SELECTION OF FEMALE MIGRANTS IN CHINA[1]

Introduction

This paper deals with the relation between state regulations and migrants' marriage choices. Scholars in the field of international migration research have paid extensive attention to state migration policies and their social consequences. People moving internally face fewer challenges set by migration policies, but this is not always true. In China, the *hukou* system, or the household registration system (also known as the "residence permit system"), controls internal migrants, administrating the distribution of public goods, especially in urban areas, and reinforcing the rural–urban divide (Wu & Treiman, 2004). It is a barrier for rural-to-urban migrants wanting to gain full urban benefits. Gaining a local *hukou* in destination cities, namely, converting their original rural *hukou* to an urban one, plays a critical role in these migrants' access to public education, healthcare, and other social goods in the urban areas (Wu & Treiman, 2004).

For the Chinese rural migrants who plan to reside permanently in the cities, they have to circumvent the restrictions placed by the *hukou* system. There are a few de jure channels for realizing rural-urban *hukou* conversion. A recent study by Xiang (2015) found that male and female migrants tended to use different channels to *hukou* conversion. Rural men usually obtain their *hukou* via military service or job recruitment, while rural women, who are disadvantaged in education attainment (Li, 1994; Song, Appleton, & Knight, 2006) and the labour market (Fan,

[1] This chapter has been accepted as: Zeng, L., & Liao, T. Social exchange of mate selection of female migrants in China. *Marriage & Family Review*, *forthcoming.*

2003; Fan & Huang, 1998; Fan & Li, 2002; Huang, 2001), use the pathway of *hukou* conversion via marriage more often than men (Xiang, 2015).

People who use marriage to gain an urban *hukou* engage in a quid pro quo act consistent with the general literature on status exchange theory (Davis, 1941; Merton, 1941) and the specific literature on exchange in the marriage market (England & McClintock, 2009; Fu, 2001; Kalmijn, 1993; McClintock, 2014; Qian, 1997; Sassler & Joyner, 2011). A recent study suggested that Chinese rural women can compensate their undesirable "rural roots" with their appreciated femininity (e.g. hard working or physical attractiveness) by marrying urban men (Lui, 2016). This paper goes beyond the related literature by studying female migrants converting *hukou* via marriage with men less educated or older.

We begin below with a review of the *hukou* system as a migration-related policy, the basic characteristics of Chinese rural-to-urban migrants, and the relationship between migration and marriage. Using the Chinese General Social Survey (CGSS) 2010 data, a nationally survey that records migration history, we then investigate two marriage patterns among these migrants. We hypothesize (1) that the educational difference between migrants and partners tends to be greater for the female migrants who obtained their urban *hukou* via marriage; (2) and that the age difference between the partners and the migrants tends to be greater for the female migrants who obtained their urban *hukou* via marriage.

Background

The Hukou System

The modern *hukou* system in its current form was first established in Chinese cities in 1951 and extended to rural areas in 1955 (Chan, 1994; Chan & Zhang, 1999). In the history of the *hukou*

system, it has served two main purposes— to track population and control migration and to facilitate resources allocation within and across areas, especially in the context of the great rural-urban divide in China. These two purposes usually reinforce each other, resulting in an institution for redistributing social goods (Wu & Treiman, 2004).

Obtaining local *hukou* is appealing to rural migrants who plan to stay in the cities, because without a local *hukou*, their access to social goods that local governments provide and administer, like healthcare, housing, and so on, is restricted, especially when they have little resource to compensate these basic needs through other channels. Impact of having no urban *hukou* goes beyond the migrants themselves to their children, who have limited access to public schools, the main education provider in China. Instead, they have to turn to private or charity schools that usually charge a higher tuition and have fewer resources to deliver quality education.

In the context of rising demand for cheap labour in Chinese cities in the post-reform era, new policies introduced into the system relaxed the control over rural-urban migration so that rural-to-urban migrants could take the job vacancies that are no longer attractive to urban residents (Feng, Zuo, & Ruan, 2002; Yang & Guo, 1996). But access to social goods remains closely related to the *hukou* of the residents and the *hukou* conversion continues to be difficult to achieve, especially in certain major cities (Chan, 1994; Wu & Treiman, 2004, 2007; Zhang & Treiman, 2013). The *hukou* system no longer impedes individuals' migration but remains the determining factor in defining full residentship in Chinese cities (Zhang, 2012).

Chinese Rural-to-Urban Migrants and Their Family Formation

Local *hukou* is important to rural migrants in the cities, but the channels to convert their *hukou* registration are limited. The 11 *de jure* channels of *hukou* conversion are listed in Table 2.1. Except for the channel of marriage, parent-child tie, and land expropriation, the channels to *hukou* conversion tend to benefit certain groups of migrants, such as the highly educated (conversion via education, state-owned sector employment, and professional skills), the wealthy (conversion via investment, or real estate purchase), and young men (conversion via military enlistment). The system has become a filter suppressing extended stay of those migrants with characteristics the government deems undesirable. In fact, numerous studies suggested that, the process of *hukou* conversion selection in general is highly positive in terms of education attainment, occupation, and income, favoring those with higher education, in more desirable occupations, and with higher incomes (Chan, 1994; Fan, 2002; Li & Gu, 2011; Wu & Treiman, 2004, 2007; Zhang & Treiman, 2013).

The Chinese *hukou* system does not stop migration, but it affects migrant selectivity. There is extensive research on the so-called "two circuits of migration" in China given rise by the Chinese *hukou* system and the deep economic and social transformation in the post-reform era. One circuit consists of more privileged migrants of both urban and rural origin, sponsored by state-owned incorporations and institutes in the state sector, while the other consists of rural migrants mostly self-supported and allured to the cities by the rising demand for cheap labour (e.g. Chan et al., 1999; Chan & Zhang, 1999; Cheng & Selden, 1994; Fan, 2002; Fan & Li, 2002; Goldstein & Goldstein, n.d.; Smart & Smart, 2001; Wu & Treiman, 2004). These rural-to-urban migrants have very different destinies, including where they choose to live and whether they are welcome to settle down.

Relatedly, the potential effect of the *hukou* system on the family formation of migrants is twofold. For the more privileged (i.e. the first circuit) migrants that the local governments aim to recruit, they find relatively little difficulty in obtaining local *hukou*. Neoclassical theory of migration explains the phenomenon of positive selection (e.g. more likely highly educated individuals) by pointing to the disparity of the value of certain human capital (e.g. education) in the host and source communities (Borjas, 1989). But their success in the urban labour market is not the only reason for these migrants' settling down in the cities. In the 11 *de jure* channels to *hukou* conversion, at least five of them (i.e. the channels of education, military, SOE jobs, cadre, and professional skills) directly target migrants. Even after the reform of the *hukou* system and after the introduction of the so-called points system in some wealthiest cities in China to relax the original *hukou* conversion policy, the evaluation rationale of the points system still prioritizes human resources and capital that the local government consider to be key to economic prosperity (Zhang, 2012).

The migrants in the second circuit are those who intend to benefit their families of origin and are brought to urban China by the demand generated by segregated labour markets. On one hand, prior research suggests that the migrants' desire to settle down in cities is not as strong as expected and that most of them wish to return (Cai, 2000; Fan, 2007; Hare, 1999; Solinger, 1995). On the other hand, there is very few formal opportunities left for them to obtain the full residentship in the cities. The remaining six channels to *hukou* conversion are almost irrelevant for them, except conversion via marriage and conversion via parent-child ties. With limited resources, they are also unlikely to achieve *hukou* conversion via non-de jure channels. Most single rural migrants have to return to their hometown and form families (Shen, 1996). Marriage usually signals a termination of young women's migrant work (Fan, 2007). Fan (2007) argued

that the life of peasant migrants in urban China is of "marginal existence." By their temporary migration into cities, they achieve their economic goals for their households back in the countryside, to which they will finally return. Rural-to-urban migration in China is composed of these two streams of migrants.

Mate Selection in Urban China

While the restriction on migration may affect where migrants choose to form their families, the complicated relationship between migration and marriage is about whom they choose to marry. In this study, we focus on one particular dimension of the mate selection of migrants–the similarity or dissimilarity between husband and wife.

There are extensive studies on the general trend of mate selection in the context of urban China (e.g. Han, 2010; Mu & Xie, 2014; Qian & Qian, 2014). Han (2010) found that at least since the 1970s, educational homogamy had been on a steady rise in urban China. As for age homogamy, research suggests that instead of constantly increasing, the rate of age homogamy has an inverted U-shape trend, indicating the growth of the rate has slowed down since mid-1990s (Mu & Xie, 2014). Qian and Qian (2014) found that husbands tended to have higher educational attainment and be older than their wives in urban China today.

Certain structural factors may constrain individuals' decisions on mate selection. During the post reform era with a deteriorated women's position in the labour market (Attané, 2012) and an increased economic pressure (Yu & Xie, 2013), women are faced with a growing financial insecurity. As a result, they may have stronger incentives to marry men who could provide better economic support, usually men who are more highly educated and older, to achieve high living

standards (Mu & Xie, 2014). This trend corresponds to and reinforces the traditional marital culture that prefers hypergamy in China.

Marriage: Exchange for Full Residentship

Migration further complicates individuals' decisions on mate selection and family formation. In the short term, the chance of marriage decreases after migration. Over the long run, a migrant's chance for marriage increases, so does the number of options that the migrant may have (Parrado, 2004). As the accumulative financial resources via migration increase (Massey & Espinosa, 1997), their competitiveness increases in the marriage markets in both sending and receiving communities, and further increases their chances to marry desirable partners.

A complicating factor for mate selection is that marriage is not an event independent from migration. Marriage could be a reason for migration, through which husband and wife seek reunion. Furthermore, marriage can be a pathway to the initiation of migration, or a strategy to extend a short-term migration to a long duration. Exchange theory (Davis, 1941; Merton, 1941) is one of oldest and most influential theories guiding the research on inter-marriage. A social exchange perspective on marital and familial relationships between men and women argues that such relationships are made possible when a bond based on the balance of perceived rewards and perceived costs between the spouses could be formed and maintained (Nakonezny & Denton, 2008; Thibaut & Kelley, 2017). In this perspective, a marriage between a migrant and a local may be based on an exchange for local residentship, a prized asset in the destination community as well as social status. Many researchers applied this social exchange perspective in their studies on interracial/ethnic marriage in the modern contexts of immigration countries (Furtado, 2006; Furtado & Theodoropoulos, 2008; Kalmijn & Van Tubergen, 2006; Maffioli, Paterno, &

Gabrielli, 2014; Qian & Lichter, 2007). The research of Maffioli et al (2014) on the mate selection of Italian immigrants shows that immigrant's appreciated qualities such as youth and higher level of educational attainment may be offered in exchange for economic security, upward socio-economic mobility and access to the social network of the native partners.

From Marriage to Urban Hukou: A Gendered Pathway

Marriage as a strategy to gain residency is mainly used by women (Xiang, 2015). Qualitative research suggests that for single rural women who ever migrated, there are three possible marriage markets for them: they could return to their home villages and become the brides of the locals, or favorably marry men from an economically more advanced rural community (Zhang, 2009). If they do not return for marriage, they are likely to find their partners who are their co-workers, hometown friends, or their schoolmates in the cities, and form the so-called *dagong* ("being employed") marriages, which are neo-local marriages (Fan, 2007; Zhang, 2009).

Alternatively, with tremendous difficulties, they enter urban marriage market, meeting urban locals through introductions of friends or through work (Zhang, 2009). Although the rural background of female migrants renders them less desirable in the urban marriage market (Chen, 1999; Chiang, 1999; Lui, 2016), the marriage migration for women is still possible because ample studies found that men with difficulties finding mates locally were more likely to marry migrant women (Humbeck, 2002; Jolivet, 2005; Piper, 1999). Young rural women were more welcomed in the urban marriage market compared to young rural men because the femininity of these women is appreciated (Lui, 2016). The other reason why female migrants from rural areas use this pathway to convert *hukou* more often is about the agency of women (Fan, 2007). Challenging the notion that women in marriage migration are tied-movers (i.e. trailing spouses),

studies suggest that the decision-making process of marriage migration involves women's pragmatic considerations and active choices (Fan, 2007; Zhang, 2009). Migration has even become a new means for rural women to take an active role in their mate selection (Zhang, 2009). Marriage migration is one of the strategies that unprivileged women utilize to realize certain goals such as geographical and social mobility and the independence from their natal families (Lievens, 2006; Ortiz, 2006).

Summary. Compared to international migration, internal migrants may face fewer difficulties due to migration policy and hence the incentive to use marriage as a strategy exchanging for the important resources that a migrant need may be lower. However, this is not always true, especially when a state uses "internal visa" to manage the internal migration in and above municipal level. This study expects to observe similar exchange between migrants and locals as in the cases of international migration. If the aim to achieve *hukou* conversion through marriage becomes a salient consideration in the mate selection of rural-to-urban migrants, these migrants may be more willing to enter a marriage, though less desirable in terms of matched personal characteristics like educational level or age between the partners, could offer them the chance of *hukou* conversion. In fact, qualitative studies have found that men in the cities who marry migrant women are typically older or poorer than other city men, and some of them are mentally or physically disabled (Ma, Chen, & Du, 1995; Xu & Ye, 1992) and live on the social margin in the cities (Lui, 2016). Based on social exchange theory and other aforementioned research, we propose the following hypotheses:

Hypothesis 1: Other things being equal, compared to other rural-to-urban migrants, those who realized rural-urban *hukou* conversion via marriage are more likely to have married down educationally.

Hypothesis 2: Other things being equal, compared to other rural-to-urban migrants, those who realized rural-urban *hukou* conversion via marriage are more likely to have married someone older than themselves.

Note that even though we speak of the effect of *hukou* conversion, we have no intention to imply causality (i.e. such conversion caused age-based heterogamy). Rather, we merely suggest that *hukou* conversion and age or educational attainment based heterogamy may be associated.

Data and Methods

This study uses the urban sample of the 2010 Chinese General Social Survey (CGSS). The CGSS, annually conducted by Renmin University of China, is a nationally representative survey with unique information on migration history and *hukou* conversion of the respondent. There are several reasons to choose this survey for the study. First, despite the other comprehensive national surveys in China, the CGSS is a survey that asked the current and original status of *hukou* of the respondent. It also asked the question of the year in which respondents converted their rural *hukou* to urban *hukou* and the question about the channels of such conversion. Such questions made the current study possible. Second, the CGSS also collected information on the spouse of the respondent, includes his or her age, educational attainment, *hukou* status and the year of marriage. Based on these questions, we constructed the indicators of educational and age homogamy, the timing of marriage, and the types of *hukou* conversion.

Sample

In this study, the sample for the analysis includes only those female respondents with recorded marriages and born with a rural *hukou*. Note that the spouse of the respondents in this sample

could be either urban *hukou* possessors or rural *hukou* possessors. The sample excludes (1) respondents who reported that they obtained or converted *hukou* before 1955, the year *hukou* system established nationally (Chan, 1994; Chan & Zhang, 1999), and (2) respondents who indicated their reported marriage is not their first marriage because the data only includes information on the last spouse of a respondent. The sample is further selected to include only respondents aged 50 or below by 2010, because the focus of this study is to investigate the relationship between the timing of marriage and the timing of *hukou* conversion after the economic reform had begun in 1978. The final sample consists of 1,333 married adults (735 female, 598 male) of rural origin aged 20-50 residing in cities at the time of the survey. Excluding cases who converted *hukou* before the Reform, the final sample enables the analyses to concentrate on marriage via *hukou* conversion in the post-reform period.

Measures

Dependent variable 1: *Educational Heterogamy*. The first dependent variable educational disparity is an ordinal variable, measuring the educational difference in ordinal levels between a respondent and her spouse. When the spouse has a higher level of education than the respondent (i.e. when the respondent, who may have obtained urban *hukou* through marriage, is less educated), *educational disparity* = 1; when they are equally educated, *educational disparity* = 2; when the spouse is less educated than the respondent (i.e. when the respondent is more educated), *educational disparity* = 3.

Dependent variable 2: *Age Heterogamy*. The second dependent variable age difference is a variable recording the years of age difference between the spouse and the respondent.

Dependent Variable 3: *Age gap > 5 years*. A third, alternative dependent variable of age heterogamy, *Age gap > 5* years, is also used. *Age gap > 5* years is whether the respondent married someone who is more than 5 years older than him/herself (yes = 1, no = 0). The cutoff of 5 years is chosen because an interval of 5 years is viewed by many Chinese as a relatively suitable age difference between spouses as social norms and popular culture suggest (for example, see (CLM and ALM Blogs and Forum, n.d.)) and in the sample, more respondents reported an age difference within 5 years than an age difference greater or equal to 5 years.

Independent Variables. The primary interest of the analysis is to investigate the relationship between the pathway of *hukou* conversion and the marital educational and age homogamy. In this study, there are three key dimensions in respect to the marriage—the *hukou* status complex that may affect mate selection as well as the competiveness of rural-to-urban migrants in the urban marriage market: First, whether one's *hukou* has been converted from a rural one to an urban one. The variable representing it is *hukou ever converted* (HEC) (when the *hukou* of the respondent has been converted from a rural one to a non-rural one =1, otherwise = 0); Second, the timing of marriage, that is, whether the marriage of the married migrants happened before or after *hukou* conversion, represented by the variable *married before hukou conversion* (MBHC) (when the first marriage of the respondent happened before or at the same of year of the *hukou* conversion = 1, 0 otherwise); Third, the channels of the *hukou* conversion, represented by the variable *hukou conversion via marriage* (HCVA) (yes = 1, no = 0) (See Table 3.1 for the summary of the total 11 channels). Based on these three dimensions, this study constructs a predictor *hukou conversion type* (HKCT):

1. *hukou* conversion type = 1 or "married after conversion" when HEC = 1 and MBHC = 0. This category includes those respondents who have converted rural *hukou* to a non-rural

one, and got married after such conversion; (b) *hukou* conversion type = 2 or "not yet converted" when HEC = 0 and MBHC = 1. This type includes the respondents who were married but have not converted rural *hukou* to a non-rural one so far; (c) *hukou* conversion type = 3 or "married before conversion via other channels" when HEC = 1, MBHC = 1, and HCVA = 0, representing the respondents who have converted rural *hukou* to a non-rural one, and got married before such conversion but the conversion is via another means other than marriage; (d) *hukou* conversion type = 4 or "conversion via marriage" when HEC = 1, MBHC = 1, and HCVA = 1, including the respondents who have converted rural *hukou* to a non-rural one, and got married before such conversion, and the conversion is via marriage.

Control variables. Two personal characteristics are controlled in the analysis: *education* and *age at first marriage*. The place of current residence of the respondents is controlled by a regional dummy: *tier 1 cities* (at the time of the interview, namely, Beijing, Shanghai, Tianjin, Chongqing, Guangzhou, or Shenzhen = 1, 0 otherwise) (See (Nexus Pacific, 2013)). Family background is also controlled, which is measured by the socioeconomic status of the respondent's father including *father's education, political status, occupational status* when the respondent was aged 14. We also control the cohort effect of homogamy. A detailed description of these control variables is given in Table 2.2.

Statistical Models

Ordinal logit model/generalized ordered logit model. An Ordinal logit model was first applied to analyze the educational difference between spouses, because the dependent variable educational disparity has a clear ranking among the categories, but the differences among the adjacent

categories cannot be treated as the same (Liao, 1994) (note that the value of educational disparity is not equal to the actual level difference between spouses). The ordinal logit model is:

$$Log[\frac{P(y_1 \leq j)}{1 - P(y_1 \leq j)}] = \mu_j - (\delta_1 D_1 + \delta_2 D_2 + \delta_3 D_3 + \mathbf{\beta X}), j = 1,2. \ (2.1)$$

where y_1 is *educational disparity*, D_1, D_2, and D_3 represent *hukou conversion types* 1, 2, and 3, respectively, and the **X** term here represents all the control variables. Ordinal logit model is similar to binary logit model except that the ordinal-outcome models allows a sequence of logits specified with the same coefficients (i.e. βs) and predictors (i.e. xs) but different unknown threshold parameters separating the adjacent categories to be estimated with βs (i.e. μs). The logit on the left-hand side is hence a cumulative logit (Agresti, 2018). One key assumption for ordinal logit model is the parallel lines/proportional odds assumption, that is, the effects of an x should be constant regardless of the choice of response category j. But such an assumption is often violated, as in the current analysis. When the assumption is not satisfied, an option is to use a generalized ordered logit model. The generalized ordered model relaxes the restriction on parallel lines and produces separate sets of estimates of the coefficients for different response categories. Particularly, the proportional odds model, as a special case of the generalized ordered model, produces separate sets of estimates of the coefficients across levels of response for the variables on which the parallel assumption is violated but keeps the estimates of the other coefficients the same across the response levels (Williams, 2006). That means the δs and the **β** in (2.1) must take on a subscript j to allow the coefficients to vary across response category contrasts.

Gamma regression. For analyzing the age difference variable, a first model for consideration would be OLS regression. However, judged by either the Shapiro-Wilk test or the

Kolmogorov-Smirnov test, the distribution of the variable is far from being normal. When the normality assumption is violated, the application of OLS regression can be problematic. In contrast, gamma regression, which is based on gamma distribution that can take on a wide range of shapes, offers the flexibility for modelling data with the normality assumption violated. Gamma regression with the logit link takes the form of

$$Log[E(y_2)] = \alpha + \delta_1 D_1 + \delta_2 D_2 + \delta_3 D_3 + \mathbf{\beta X}. \quad (2.2)$$

Similarly, y_2 is *age difference*, D_1, D_2, and D_3 represent *hukou conversion types* 1, 2, and 3, respectively, and the **X** term represents all the control variables. Because the gamma distribution takes only nonnegative values, we rescaled the age difference variable by adding a constant equaling the absolute minimum value of the observed age difference. Such rescaling does not change the estimation of a gamma model other than estimated value of the constant term, which is of no use for our analysis.

Binary Logit Model. To further investigate the effect of conventionally believed age gap limit, a binary logit model has also been used to analyze age heterogamy using the dependent variable *age difference > 5 years older*:

$$Log[\frac{P(y_1 \leq j)}{1 - P(y_1 \leq j)}] = \alpha + \delta_1 D_1 + \delta_2 D_2 + \delta_3 D_3 + \mathbf{\beta X}. \quad (2.3)$$

where $y_3 = 1$ is the respondent's spouse is at least 5 years older, 0 otherwise; and other terms are defined as above.

Results

Descriptive Statistics

Table 2.2 shows a summary of descriptive statistics for the female migrants. We also present here some descriptive statistics of the male counterpart of the migrants as a contrast. First, represented by the variable *Hukou ever converted* (HEC), 70.3% of the female and 76.4% percent of migrants converted their original rural *hukou* to urban *hukou*, the proportions of *hukou* conversion of rural men and women in the sample are similar. This is consistent with the findings of Wu and Treiman (2004) and Xiang (2015). But a gender difference is observable in the distribution of the timings of marriage (indicated by the variable *Married before hukou conversion* (MBHC)). Less than half of the male migrants had been married before *hukou* conversion though for women, this number is 65.0%. Only a very small portion on male migrants achieved rural-urban *hukou* conversion through marriage whereas 10.75% of the women obtained their urban *hukou* through marriage.

Consistent with the previous studies discussed above, we found that marriage as a pathway to *hukou* conversion is gendered. Because of the low number of men using marriage as a pathway, we focus our analysis below on educational heterogamy and age heterogamy among women.

Educational Heterogamy

Table 2.3 shows the results of generalized ordered logit models predicting educational heterogamy. The higher the educational attainment of migrants from rural areas, the more likely that they have husbands less educated than themselves. It is not surprising that more educated

individuals, compared to the reference group (junior high school or lower educated), are less likely to marry up educationally.

The key predictors of interest – the *hukou conversion types* – test *Hypothesis 1*. The evidence suggests that *hukou* conversion type matters. The probabilities of not marrying up in terms of education for those women with *hukou* conversion types 2 (i.e. migrants who have not converted their rural *hukou*) and type 3 (i.e. *hukou* conversion through other pathways) are not statistically significantly different from the reference group, type 4 migrants, namely, those who converted their *hukou* through marriage. However, compared with these type 4 female migrants, the female migrants who married after their *hukou* conversion are less likely to have married a man with a lower level of education. In other words, the women who converted *hukou* through marriage were over 1.721 times more likely to have married a man with a lower level of education than them, compared to those who married after their *hukou* conversions.

Age Heterogamy

Table 2.4 Model (1) shows the results from the gamma regression models of age difference between the respondents and their spouses. Education is a significant predictor for the female migrants. Rural women with college degree or above are less likely to marry someone older than themselves. For women, the multiplicative effect of having a four-year college degree is 0.899, suggesting such a woman is a bit over 10% less likely to have married an older man than a woman without a high school diploma.

The age at marriage is a significant predictor. The multiplicative effect of age at marriage is 0.986, which suggests that respondents got married at older age are less likely to marry

someone much older than themselves. A one-year increase in age at first marriage is associated with 0.986 times decrease in age difference between the respondent and their husbands.

The regional dummy is statistically significant at the 0.001 level for women with a positive estimate, indicating that a rural woman residing in a Chinese tier 1 city is more likely to have married an older husband than a rural woman residing in a non-tier 1 city. The multiplicative effect is 1.089; being a rural woman currently residing in a major city like Beijing or Shanghai increases the expected husband's age by 1.089 times.

The effect of cohort is also significant. The multiplicative effect of birth cohort 1975-1992 relative to the reference group (born between 1960 - 1974) is 1.050, which suggests that being rural migrants born between 1975 and 1992 tend to have greater expected age gap within couples, compared to those who were born between 1960 and 1974. These results confirm the findings from the previous study (Mu & Xie, 2014).

The key predictor of interest, *hukou* conversion type is significant. The female rural-to-urban migrants who realized *hukou* conversions through marriage have statistically significant predicted age differences. All the other 3 types of migrants, namely those who married after *hukou* conversion, those who have not yet converted their *hukou*, and those who converted their *hukou* but through other channels, have smaller age differences between the husbands and the wives. The multiplicative effect of type 1 migrants who married after *hukou* conversion relative to the group of female migrants who obtained *hukou* through marriage is 0.886, indicating that the expected age difference between a type 1 female migrant and her husband is 0.886 times of the expected age difference between a type 4 migrant and her husband. In other words, the multiplicative effect of type 4 migrants (migrants obtaining urban *hukou* through marriage) relative to the group of female migrants who married after *hukou* conversion is 1.129, or, being a

type 4 female migrant is associated with a 1.129 times increase in the expected age difference. Similarly, being a type 4 female migrant is 1.141 times increase in the expected age difference relative to the women who married without *hukou* conversion (type 2 migrants), and 1.096 times increase in the expected age difference relative to the women who converted *hukou* through other channels (type 3 migrants). The predicted age difference of a type 4 female migrant, holding other variable at their means, is 3.364 years, which is greater than the sample mean age difference, 2.086 years, and is also greater than the predicted age difference for type 1 migrants, 1.839 years; type 2 migrants, 1.709 years; and type 3 migrants, 2.195 years. The findings suggest that type 4 female migrants are very likely to have married a much older man.

The results from the binary logit model on the female subsample predicting the event marrying someone who is 5 or more years older also confirm these findings (Table 2.4 Model (2)). The odds ratio of type 1 migrants (married after *hukou* conversion) versus type 4 migrants (conversion through marriage) is 0.230, suggesting that being a type 1 migrant is 77% less likely than a type 4 migrant to have a husband someone 5 or more years older. In other words, the odds ratio of type 4 migrants versus type 1 migrants (married after *hukou* conversion) is 3.892, which suggests the odds of a type 4 migrant (*hukou* conversion via marriage) being married with someone 5 or more years older is 3.892 times of the odds of the women who married after *hukou* conversion. Similarly, a type 4 migrant (*hukou* conversion via marriage) being married with someone 5 or more years older is 3.047 times of the odds of the women who are married and still holding rural *hukou* (type 2 migrants), and 2.757 times of the odds of the women who married and converted *hukou* through other channels (type 3 migrants).

In summary, we found strong evidence supporting both *Hypothesis 1* and *Hypothesis 2*. That is, female rural-to-urban migrants who realized their *hukou* conversion via marriage are

more likely to have married someone less educated and older, perhaps much older than themselves.

The significant and large age difference exists between this certain group of female migrants and their husbands is not likely due to a different general preference on age difference between couple in rural China. The average age difference between wives and husbands in the correspondent rural sample of the 2010 CGSS is 1.853 (standard deviation 3.657), which is smaller than but not very different from the mean age difference of female in the current sample that we use (2.086 with S.D. 3.103), and two sample t-test finds no significant difference between them.

The significant differences are also unlikely due to the potential compositional effects in age or in education. If type 4 migrants married young, then their spouses had to be older than them; or if type 4 migrants are the most educated group of migrants then their husbands are more likely to be less educated than them. We conducted additional analysis that suggest that such compositional effects do not exist though for the sake of space, we only discuss briefly the results here and can make them available upon request. For the women who gained an urban *hukou* through marriage, the descriptive statistics suggests that they married at an older age compared to those who gained an urban *hukou* through other means, with no concentration on the younger ages. Regarding educational heterogamy, the highest proportion of those women who married down educationally to gain an urban *hukou* is the group of women with a high school diploma instead of those with higher education degrees, regardless of the type of *hukou* conversion (i.e. via marriage or other means).

Discussions and Conclusions

For under half a century, *hukou* conversion has been an important means of social mobility for rural-to-urban migrants because it grants migrants' access to a large set of social welfare benefits previously enjoyed by urban citizens only. Obtaining urban *hukou* status allows rural migrants to finish the final formal step of rural-to-urban migration and cross the most crucial institutional barrier to a better life. Previous studies show that the pathways to urban *hukou* status are gendered (Xiang, 2015) – marriage to an urban spouse is an important pathway to *hukou* conversion for rural women, while rural men mainly use education, employment in state sector (corporations or institutes), or military service as a means to the same end. We found in the current study that, going through the gendered pathways of *hukou* conversion, female rural-to-urban migrants paid the "price" of an urban *hukou* in their social exchange dealings by marrying less educated or much older men.

As Fan (2007) argued, mate selection as an evaluation process may include both attribute matching and attribute trade-off. Attribute matching centers on the relative similarity in status between the prospective spouses, subject to the hypergamous principle that usually husbands should be "superior" to wives in term of age, height, education, and occupation (e.g. Ji, Zhang, & Liu, 1985; Lavely, 1991; Qian & Qian, 2014; Shen, 1996). When rural women use marriage as a means to obtaining full residentship in urban areas, they gravitate toward attribute trade-off. The results here suggest that the women we analyzed were more likely to marry someone much older than themselves, even beyond an age difference of five years, in order to gain an urban *hukou*. Youth, in itself is an attractive attribute in many cultures, related to better physical appearance, better health, even a hint of certain characteristics such as docility or purity that are valued in the marriage market, thus compensating the undesirable attribute in a rural place of origin (Lui,

2016). Even though previous study suggested that urban women in China were subject to the greater pressure to marry older men to ensure financial security (Mu & Xie, 2014), the age difference between spouses for the migrants who obtained urban *hukou* via marriage is significantly above the average level among rural-to-urban migrants. Marrying a man relatively older than herself and marrying a man much older than herself are likely two different things. There is possibly a threshold of age difference between partners, beyond which people in the marriage market would think it to be undesirable unless motivated by other reasons. Rural women realizing *hukou* conversion via marriage with some much older men is not just an exchange between the desire for a young partner and urban residentship. The price of the full residentship in urban China could be higher than it seems.

The findings about educational homogamy are less straightforward. True, women who obtained *hukou* conversion via marriage were indeed more likely to marry with someone less educated. On the other hand, all the current female urban residents from rural areas who ever married and married before their *hukou* conversion are more likely to marry down educationally. We must note that the CGSS survey has its limitations. Even though it collected relatively comprehensive information on the *hukou* conversion history of the respondent, it did not ask questions about detailed migration history, thus failing to capture full migration dynamics, such as multiple, repeated, and circular migration as well as the duration of each migratory trip. With the CGSS data, we could not distinguish between those who had been married before their *hukou* conversion before their move to urban areas and those who had been married before their *hukou* conversion after the migratory move. It is possible that it is where they got married instead of when they got married that makes the difference. For example, the rural marriage market may have different mechanisms from its urban counterpart.

This study has provided clear empirical evidence for quid pro quo exchange in China's marriage market. *Hukou* status as a critical resource affects mate selection in a gendered way. It is also likely that it affects migrants of different socio-economic status or class differently, an effect that this study could not further analyze due to relatively small subsample sizes though the results from the analyses on educational and age homogamy do offer some clues for such an effect. Educational and age heterogamy are different in nature. As the studies in the tradition of the "two circuit migration" indicate, privileged migrants have more choices to design their ways for obtaining a *hukou* in destination cities (e.g. Chan et al., 1999; Chan & Zhang, 1999; Cheng & Selden, 1994; Fan, 2002; Fan & Li, 2002; Goldstein & Goldstein, n.d.; Smart & Smart, 2001; Wu & Treiman, 2004). Female migrants of rural origin who have desirable status of education (i.e. migrants of first circuit) may not even need to realize their *hukou* conversion via marriage or may not be willing to do so. Such a finding from internal migration research is different from the findings of similar on international migration (e.g. Maffioli et al., 2014).

The Chinese *hukou* system, as a state-imposed policy, stops neither the temporary migration, nor the permanent migration from the countryside to the cities. However, it does affect or alter the calculus of migration, as other migra. *Hukou* conversion is a process of highly positive selectivity to recruit the most educated labour to the local cities, even after the reform of the system (Zhang, 2012). However, as this study suggests, underprivileged rural women could jump the policy barrier and realize their social mobility. On the other hand, there is also the cost beyond the cost inherent in the urban labour market that they already have to pay. This time the cost is in the family life of these migrants. The policy impact of the *hukou* system on the private life of rural-to-urban migrants, particularly on gender equality and power relationships in

marriage may be more profound than it appears. The related intragenerational as well as intergenerational impacts remain largely unknown.

In our analysis, the age gap between partners reported by the female migrants who converted *hukou* through marriage indicates a strong incentive for migrants to convert their *hukou* because they perceived an urban *hukou* to be valuable. Will such an incentive be long-lasting? Arguing that rural *hukou* had increased its value while urban *hukou* has decreased its value, especially since 2012 when various new policies were started to be introduced into the rigid *hukou* system, Chen and Fan (2016) found moderate evidence that were aligned with their argument. In an additional analysis that we did not report here, we observed a smaller, though statistically insignificant, age gap for the female migrants who converted *hukou* after 2002 via marriage, compared to those who converted before 2002, suggesting that urban *hukou* after 2002 may be somewhat less valuable than before. Given this small yet potentially potent trend, we expect the advantages of an urban *hukou* may eventually disappear, assuming that the kind of policy changes reported by Chen and Fan (2016) will continue and that the gap between urban and rural standards of living will shrink.

Tables

Table 2.1. De jure channels to *hukou* conversion

Channels	Description	Chinese Expression
1. Education	Enrollment in institutes of higher education	*zhaosheng*
2. The military	Military enlistment	*canjun*
3. State-owned enterprise (SOE) job	Recruitment by SOE	*zhaogong*
4. Cadre	Promotion to administrative posts	*zhaogan*
5. Investment	Making investment in urban areas	*touzi*
6. Real estate purchase	Purchasing real estate in urban areas	*goufang*
7. Professional skills	Professions demanded by the government	*zhuanye jineng*
8. Marriage	Marriage with an urban *hukou* holder	*hunyin*
9. Parent-child tie	Joining parents or adult children	*suiqian*
10. Land expropriation	Land expropriation by the government	*zhengdi*
11. Others	A number of other channels	*qita*

Source: Xiang, 2015; Chan & Buckingham, 2008; Chan & Zhang, 1999; Wang, 2005.

Table 2.2. Summary of Variables (urban sample of married adults age 20-50 who is of rural origin).

Variables	Description	Mean (S.D.)	
		Female	Male
Hukou ever converted	Ever converted the *hukou* from rural to urban. yes = 1, no = 0;	0.703	0.764
		(0.457)	(0.425)
Hukou conversion via marriage	Obtained urban *hukou* through marriage. yes = 1, no = 0;	0.107	0.0156
		(0.310)	(0.124)
Hukou conversion type			
Type 1	Married after *hukou* conversion;	0.350	0.554
		(0.477)	(0.498)
Type 2	Married, rural *hukou* not yet converted;	0.297	0.236
		(0.457)	(0.425)
Type 3	Married before *hukou* conversion, conversion not through marriage;	0.246	0.194
		(0.431)	(0.396)
Type 4	Married before *hukou* conversion, conversion through marriage;	0.107	0.0156
		(0.310)	(0.124)
Educational disparity	Difference in educational attainment between the respondent and the spouse. = 1 when the respondent is less educated than his or her spouse; = 2 when they are equally educated; = 3 when the respondent is better educated than his or her spouse;	1.874	-
		(0.274)	-
Age difference	*age difference = age of the spouse – age of the respondent*	2.086	-
		(3.103)	-
Marry with someone >5 years	Spouse more than 5 years older than respondents. yes = 1, no = 0;	0.113	-
		(0.317)	-

Table 2.2. (cont.)

Education		(0.274)	-
Junior High School or Lower		0.532	-
		(0.499)	-
Senior High School		0.155	-
		(0.362)	-
Vocational Secondary School		0.0966	-
		(0.296)	-
Vocational College		0.122	-
		(0.328)	-
Academic College or Higher		0.0939	-
		(0.292)	-
Age at first marriage		23.28	-
		(3.174)	-
Tier 1 cities	Currently residing in tier 1 cities = 1, else = 0	0.215	-
		(0.411)	-
Father's Education			
High School	High school or equivalent = 1, else = 0	0.143	-
		(0.350)	-
Post High School	Post high school = 1, else = 0	0.0544	-
		(0.227)	-
Father as a party member	CCP party member =1, else = 0	0.222	-
		(0.416)	-
Father in state work unit	Work in state sector = 1, else = 0	0.211	-
		(0.408)	-
Cohort 1975 - 1992	born 1960 - 1975 = 0, 1975 - 1992 = 1	0.416	-
		(0.493)	-
N		735	576

Note: We include the descriptive statistics for the male respondents to show the contrast between women and men in the *hukou* conversion categories, suggesting why a corresponding analysis for men would not be meaningful.

Table 2.3. Estimates from generalized ordered logit models predicting educational heterogamy among female migrants

	P(Spouse less educated or equally educated) vs *P*(Spouse more educated)	*P*(Spouse less educated) vs *P*(Spouse equally educated or
Hukou conversion Type[2]		
Type 1	-0.543*	-0.543*
Type 2	-0.370	-0.370
Type 3	-0.101	-0.101
Education		
Senior High School	0.634**	1.723***
Vocational Secondary School	0.226	1.891***
Vocational College	0.253	1.699***
Academic College or Higher	2.677***	2.677***
Age at first marriage	-0.0159	-0.0159
Tier 1 Cities	-0.145	-0.145
Father's Education		
High School	-0.100	-0.100
After High School	-0.368	-0.368
Father as a Party member	-0.0243	-0.0243
Father in state work unit	-0.0599	-0.0599
Cohort		
1975-1992	0.000198	0.000198
Constant	1.029	-1.549*
N[3]	769	
Log Likelihood	-756.90	
Wald Chi-square	137.55	
P > Chi-square	0.0000	

1. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$;
2. Type 4 migrants (*hukou* conversion through marriage) are the reference group;
3. Slightly larger samples were used here due to missing values in spouses' age. These missing values would not affect the analysis on educational disparity, but could not be included in the analysis of age disparity. Thus, observations with missing values on spouse age were retained in the sample for the analysis of educational heterogamy, but were removed in the samples for age heterogamy.

Table 2.4. Estimates from gamma regression model and binary logit regression model predicting age heterogamy among female migrants

Predictors	Model (1): Y = Years of age difference	Model (2): *P*(*marry someone > 5 years older*)
Hukou conversion Type[2]		
Type 1	-0.121***	-1.359**
Type 2	-0.132***	-1.114**
Type 3	-0.0915**	-1.014**
Education		
Senior High School	-0.0171	-0.293
Vocational Secondary School	-0.0492	-0.402
Vocational College	-0.00103	-0.250
Academic College or Higher	-0.107**	-1.585*
Age at first marriage	-0.0137***	-0.00963
Tier 1 Cities	0.0852***	0.807**
Father's Education		
High School	0.0381	0.333
After High School	-0.0561	0.452
Father as a party member	-0.0101	0.107
Father in state work unit	-0.0199	-0.462
Cohort		
1975-1992	0.0486*	0.322
Constant	2.896***	-1.020
N	735	735
Log Likelihood	-2564.01	-241.73
Wald Chi-square	90.19	34.84
P > Chi-square	0.0000	0.0016
BIC	-4714.66	582.5

1. $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$;
2. Type 4 migrants (*hukou* conversion through marriage) are the reference group.

References

Agresti, A. (2018). *An introduction to categorical data analysis*. Wiley.

Attané, I. (2012). Being a woman in China today: A demography of gender. *China Perspectives*, *2012*, 5–12.

Borjas, G. J. (1989). Economic Theory and International Migration. *International Migration Review*, *23*, 457–485.

Cai, F. (2000). Zhongguo liudong renkou wenti (China's Floating Population). *Henan Renmin Chubanshe, Zhengzhou (in Chinese)*.

Chan, K. W. (1994). *Cities with invisible walls: reinterpreting urbanization in post-1949 China*. Oxford University Press.

Chan, K. W., Liu, T., & Yang, Y. (1999). Hukou and non-hukou migrations in China: comparisons and contrasts. *International Journal of Population Geography*, *5*, 425–448.

Chan, K. W., & Zhang, L. (1999). The Hukou System and Rural-Urban Migration in China: Processes and Changes. *The China Quarterly*, *160*, 818.

Chen, C., & Fan, C. C. (2016). China's Hukou Puzzle: Why Don't Rural Migrants Want Urban Hukou? *China Review*, *16*, 9–39.

Chen, Y. (1999). Marriage attitudes and problems among migrant women workers: Survey results in Guangdong. *Population, Urban and Regional Development in China, Taipei, Taiwan: China Studies Program, Population Studies Center, National Taiwan University*, 181——192.

Cheng, T., & Selden, M. (1994). The Origins and Social Consequences of China's Hukou System. *The China Quarterly*, *139*, 644.

Chiang, N. (1999). Research on the floating population in China: Female migrant workers in Guangdong's township–village enterprises. *Population, Urban and Regional Development in China, Taipei, Taiwan: Population Studies Center, National Taiwan University*, 163——180.

CLM and ALM Blogs and Forum. (n.d.). *How big an age difference can Chinese women usually tolerate for a marriage*. Retrieved from https://blog.chinalovematch.net/forum/post/How-big-an-age-difference-can-Chinese-women-usually-tolerate-for-a-marriage

Davis, K. (1941). Intermarriage in Caste Societies. *American Anthropologist*, *43*, 376–395.

England, P., & McClintock, E. A. (2009). The Gendered Double Standard of Aging in US Marriage Markets. *Population and Development Review*, *35*, 797–816.

Fan, C. C. (2002). Permanent migrants, temporary migrants, and the labour market in Chinese cities. *Resource Management, Urbanization and Governance in Hong Kong and the Zhujiang Delta*, 55–78.

Fan, C. C. (2003). Rural- urban migration and gender division of labor in transitional China. *International Journal of Urban and Regional Research*, *27*, 24–47.

Fan, C. C. (2007). *China on the Move: Migration, the State, and the Household*.

Fan, C. C., & Huang, Y. (1998). Waves of Rural Brides: Female Marriage Migration in China. *Annals of the Association of American Geographers*, *88*, 227–251.

Fan, C. C., & Li, L. (2002). Marriage and Migration in Transitional China: A Field Study of Gaozhou, Western Guangdong. *Environment and Planning A: Economy and Space*, *34*, 619–638.

Feng, W., Zuo, X., & Ruan, D. (2002). Rural Migrants in Shanghai: Living Under the Shadow of Socialism1. *International Migration Review*, *36*, 520–545.

Fu, V. K. (2001). Racial Intermarriage Pairings. *Demography*, *38*, 147–159.

Furtado, D. (2006). *Human capital and interethnic marriage decisions, IZA DP*.

Furtado, D., & Theodoropoulos, N. (2008). Marriage: A Choice between Ethnic and Educational Similarities. *IZA Woréing Paper*.

Goldstein, S., & Goldstein, A. (n.d.). *Permanent and temporary migration differentials in China*.

Han, H. (2010). Trends in educational assortative marriage in China from 1970 to 2000. *Demographic Research*, *22*, 733–770.

Hare, D. (1999). 'Push' versus 'Pull' factors in migration outflows and returns: Determinants of migration status and spell duration among China's rural population. *Journal of Development Studies*, *35*, 45–72.

Huang, Y. (2001). Gender, hukou, and the occupational attainment of female migrants in China (1985-1990). *Environment and Planning A*, *33*, 257–279.

Humbeck, E. (2002). The politics of cultural identity: Thai women in Germany. In *Women of the european union. The politics of work and daily life* (pp. 201–216). Routledge.

Ji, P., Zhang, K., & Liu, D. (1985). Beijing jiaoqu nongcun renkou hunyin qianyi qianxi (Marriage migration in Beijing's rural suburbs). *Zhongguo Shehui Kexue (Social Sciences in China)*, *3*, 201–213.

Jolivet, M. (2005). *Japan: The childless society?: The crisis of motherhood*. Routledge.

Kalmijn, M. (1993). Trends in black/white intermarriage. *Social Forces*, *72*, 119–146.

Kalmijn, M., & Van Tubergen, F. (2006). Ethnic intermarriage in the Netherlands: Confirmations and refutations of accepted insights. *Journal of Population/Revue Europeenne de Demographie*, *22*, 371–397.

Lavely, W. (1991). Marriage and mobility under rural collectivism. *Marriage and Inequality in Chinese Society*, 286—–312.

Li, J., & Gu, Y. (2011). Zhongguo Chengshi Laodongli Shichang Zhong de Huji Fenceng (Hukou-Based Stratification in China's Urban Labor Market). *Sociological Studies*, *2*, 48–77.

Li, L. (1994). *Gender and development: innercity and suburban women in China*. Centre for Urban \& Regional Studies, Zhongshan University.

Liao, T. F. (1994). *Interpreting probability models: Logit, probit, and other generalized linear models*. Sage.

Lievens, J. (2006). Family-Forming Migration from Turkey and Morocco to Belgium: The Demand for Marriage Partners from the Countries of Origin. *International Migration Review*, *33*, 717.

Lui, L. (2016). Gender, rural-urban inequality, and intermarriage in China. *Social Forces*, *95*, 639–662.

Ma, L., Chen, Z., & Du, G. (1995). Dui 'wailaimei'hunyu guanli qingkuang de diaocha yu sikao (Investigation and contemplation of the fertility management of female inmigrants). *Renkou Yanjiu (Population Research)*, *10*, 56–58.

Maffioli, D., Paterno, A., & Gabrielli, G. (2014). International married and unmarried unions in italy: Criteria of mate selection. *International Migration*, *52*, 160–176.

Massey, D. S., & Espinosa, K. E. (1997). What's driving Mexico-US migration? A theoretical, empirical, and policy analysis. *American Journal of Sociology*, *102*, 939–999.

McClintock, E. A. (2014). Beauty and status: The illusion of exchange in partner selection? *American Sociological Review*, *79*, 575–604.

Merton, R. K. (1941). Intermarriage and the social structure: Fact and theory. *Psychiatry*, *4*, 361–374.

Mu, Z., & Xie, Y. (2014). Marital age homogamy in China: A reversal of trend in the reform era? *Social Science Research*, *44*, 141–157.

Nakonezny, P. A., & Denton, W. H. (2008). Marital relationships: A social exchange theory perspective. *American Journal of Family Therapy*, *36*, 402–412.

Nexus Pacific. (2013). *China city tier system: how it works and why it is useful*. Retrieved from http://nexus-pacific.com/blog/2013/7/9/china-city-tier-system-how-it-works-and-why-its-useful

Ortiz, V. (2006). Migration and Marriage among Puerto Rican Women. *International Migration Review*, *30*, 460.

Parrado, E. A. (2004). International migration and men's marriage in Western Mexico. *Journal of Comparative Family Studies*, *35*, 51–71.

Piper, N. (1999). Labor Migration, Trafficking and International Marriage: Female Cross-Border Movements into Japan. *Asian Journal of Women's Studies*, *5*, 69–99.

Qian, Y., & Qian, Z. (2014). The gender divide in urban China: Singlehood and assortative mating by age and education. *Demographic Research*, *31*, 1337–1364.

Qian, Z. (1997). Breaking the racial barriers: Variations in interracial marriage between 1980 and 1990. *Demography*, *34*, 263–276.

Qian, Z., & Lichter, D. T. (2007). Social boundaries and marital assimilation: Interpreting trends in racial and ethnic intermarriage. *American Sociological Review*, *72*, 68–94.

Sassler, S., & Joyner, K. (2011). Social exchange and the progression of sexual relationships in emerging adulthood. *Social Forces*, *90*, 223–245.

Shen, T. (1996). The process and achievements of the study on marriage and family in China. *Marriage & Family Reviewge & Family Review*, *22*, 19–53.

Smart, A., & Smart, J. (2001). Local citizenship: Welfare reform urban/rural status, and exclusion in China. *Environment and Planning A*, *33*, 1853–1869.

Solinger, D. J. (1995). The floating population in the cities: chances for assimilation? *Urban Spaces in Contemporary China*, 113–139.

Song, L., Appleton, S., & Knight, J. (2006). Why Do Girls in Rural China Have Lower School Enrollment? *World Development*, *34*, 1639–1653.

Thibaut, J. W., & Kelley, H. H. (2017). *The Social Psychology of Groups*. Routledge.

Williams, R. (2006). Generalized ordered logit/partial proportional odds models for ordinal dependent variables. *Stata Journal*, *6*, 58–82.

Wu, X., & Treiman, D. J. (2004). The household registration system and social stratification in China: 1955–1996. *Demography*, *41*, 363–384.

Wu, X., & Treiman, D. J. (2007). Inequality and equality under Chinese socialism: The hukou system and intergenerational occupational mobility. *American Journal of Sociology*, *113*, 415–445.

Xiang, J. (2015). Gendered pathways to hukou status mobility in China. *Chinese Journal of Sociology*, *1*, 231–253.

Xu, T., & Ye, Z. (1992). Zhejiang wailai nuxing renkou tanxi (Analysis of female inmigrants in Zhejiang). *Renkou Xuekan*, 45–48.

Yang, X., & Guo, F. (1996). Gender differences in determinants of temporary labor migration in China: A multilevel analysis. *International Migration Review*, *33*, 929–953.

Yu, J., & Xie, Y. (2013). Social change and trends in determinants of entry to first marriage (She hui bian qian yu chu hun ying xiang yin su de bian hua). *Sociological Research (She Hui Xue Yan Jiu)*, *1406*.

Zhang, H. (2009). Labor migration, gender, and the rise of Neo-Local marriages in the economic boomtown of Dongguan, South China. *Journal of Contemporary China*, *18*, 639–656.

Zhang, L. (2012). Economic Migration and Urban Citizenship in China : The Role of Points Systems. *Population and Development Review*, *38*, 503–533.

Zhang, Z., & Treiman, D. J. (2013). Social origins, hukou conversion, and the wellbeing of urban residents in contemporary China. *Social Science Research*, *41*, 71–89.

CHAPTER 3: HOUSING PRICE AND PARTNER SELECTION IN CHINA IN THE CONTEXT OF DECREASED HOUSE AFFORDABILITY

Introduction

Not everyone can afford a marriage. There is a hurdle for women and men to jump over so that they could enter a marriage. A house seems to be one of such a hurdle in front of many single urban Chinese today (e.g., Xinhua News Agency, 2011). Ample studies documented the phenomena that men are less likely to marry and more likely to postpone their decision to form a family because they do not have and cannot afford a house (e.g., Börsch-Supan, 1986; Clark, 2012; Haurin, Hendershott, & Kim, 1993; Hughes, 2003; Hui, Zheng, & Hu, 2012; Mulder & Billari, 2010; Yu & Xie, 2013). But for those who in the end made it happen, whom did they marry and form their new family together on the other side of the hurdle?

For a long historical period in China, the housing of urban residents was under the umbrella of the welfare system. Since 1979, a housing market has been introduced into urban China and replaced the welfare system of housing. Housing gradually became a commodity that was exposed to the influence of the market and was no longer a piece of collective welfare (Zhu, 2000). When the time came to 2010s, compared to the income of many urban Chinese at marriageable age, the level of housing price is exceptionally high and almost unfordable (Li & Song, 2016), which is mostly driven by the enormous economic growth after the Reform (Zhang, An, & Yu, 2012).

The relative cost of marriage increases so much as the yearly income of a single young man is almost incomparable to the total price of a house in some major Chinese cities. But it is still almost a social norm in China that a young man should prepare a house for the future family when he marries his wife (e.g. Zhou, 2015). In other words, an ideal marriage for the urban

Chinese should include a house as a staple item in their list of marriage preparation. Yet such preparation became more and more improbable in the context of increasingly increasing housing prices and enlarged economic inequality. According to the identity theory in marriage (Akerlof & Kranton, 2000; Watson & McLanahan, 2011), not only the cost of marriage put barriers to marriage in front of single women and men in a serious relationship, the decreasing likelihood to fulfill an ideal marriage as a crucial part of the identity of middle-class triggers further hesitation for people to wed.

The model of identity explains the decision of marriage based on the classic sociological concept of a reference group, to which people compare themselves and from which they construct their identity. The identity model of marriage explores the nuanced relationship between the economic capability and marital behavior of an individual and argues that there is a categorical difference between married people and the singles so that the transition from singles to married incurs a leap of self-perception. The category of "married people" requires a set of behaviors and characteristics that could be summarized as a certain living standard (Akerlof & Kranton, 2000; Watson & McLanahan, 2011) usually built on descent and stable income, and in our case, a house owned by the new family, instead of just a rented or shared living space. People make the judgment of whether they are ready to marry by comparing what they have to what an ideal marriage entails, for example, by comparing their income to a perceived threshold income relative to their reference group (Watson & McLanahan, 2011). In other words, in the theoretical framework of identity theory, the closer an individual match her current status to the ideal, the better prepared she think she is to a marriage, and hence more likely to marry.

So let us shift the focus from the singles to those who married, or, those who in the end agreed to marry. What makes it possible for these people to jump over the hurdle and land on the

other side? Many theories on family formation focus on the force of exchanging and matching between a man and a woman. Individuals could either exchange or trade what they have with their potential partner to generate extra gains so that they could reach the expectation of an ideal marriage, or find a matched partner and hence add what they have together to reach the standard. All these theories shed light on partner selection and the pattern of similarity or differences between husband and wife.

The match-or-trade wrestle is usually about both social status and human capital. In terms of human capital, Gary Becker's model of specialization and trading addresses the benefit that individual gains in a marriage are from the mutual dependency between the husband and wife, which is, in other words, the gender division of labor in a household (Becker, 1973, 1974, 1991). Specialization within marriage creates the added benefit of allowing increasing returns in human capital as it allows human capital to be used more intensively in one single field. The benefit of marriage maximizes as such labor division reaches its maximum—i.e. husbands are the breadwinners and wives stay at home to manage household work. The theory views marriage as a trade and a marriage can establish only when both the man and woman believe they will gain in the marriage.

On the other hand, women's increased participation in the labor market since World War II gave rise to Oppenheimer's theory of marriage search, which addresses the importance of women's economic status in the marriage market (Oppenheimer, 1998). As women's participation in the labor market became usual, their ability and potential to make contributions to the family finance through wages became a critical consideration in partner selection. Studies on comparisons across generations support the theory that women's economic potential became

more and more important in the establishment of marriage (Goldstein & Kenney, 2001; Lichter, McLaughlin, & Ribar, 2002; Qian & Preston, 1993; Sweeney, 2002).

The force of matching, or assortative mating, suggests that men and women select partners with characteristics similar to their own. Couples tend to be alike in education, age, race, and religion characteristics (Blackwell D.L & Lichter, 2004; Mare, 1991; Rosenfeld, 2008; Schoen & Weinick, 1993; Schoen & Yen-Hsin Alice Cheng, 2006). On the other hand, as "individuals negotiate an informal exchange by trading their own assets for those of their partner" (McClintock, 2014), researchers found empirical evidence supporting the existence of exchanges of socioeconomic status for desirable resources in the marriage market or other intimate relationships, such as the exchange involving race (Fu, 2001; Kalmijn, 1993; Qian, 1997) or youth and physically attractiveness (England & McClintock, 2009; McClintock, 2014; Sassler & Joyner, 2011).

Waves of critical and drastic social transformation happened in contemporary China since 1978, but there is a gap in the literature on quantitatively investigating the how the significant institutional changes in China affects the pattern of partner selection and how gender, class, and migrant status intersect in the relationship. When the imagination of an ideal marriage stands still but it becomes more and more difficult to fulfill as house affordability decreases drastically in China, how do people respond to the dilemma via partner selection, given most of Chinese only postpone their marriage instead of giving up entirely? Partner selection as individual decisions or at least individual behaviors is heavily affected by personal characteristics such as age, education, or employment status, but it is not immune to the impacts at the structural or societal level. In this chapter, we examined the relationship between the marital heterogamy and the changing, and mostly increasing housing price as the consequence of

the transformation in the institution of housing re-distribution. Particularly, we tried to qualitatively answer the question: whether and how does house affordability affect the age and educational difference between a couple?

This chapter proceeds as follows: Section 2 provides a brief background on housing price and homeownership in China, and the studies on the relationship between housing price and marriage. Section 3 develops the hypotheses and Section 4 describes the data and empirical methodology used to test the hypotheses. Section 5 presents the empirical results and Section 6 concludes.

Background

Housing Price and Homeownership in China

For a long historical period in China since 1949, the housing of urban residents was a part of a holistic welfare system. Before the Reform, urban residents could access housings built and distributed by their working units (*danwei*) through exceptionally low rents (\1% - \2% of the household income) (Bian, Logan, Lu, Pan, & Guan, 1997; Logan & Bian, 1993; Whyte & Parish, 1984). Although the size and the quality of the housing are closely related to the ranks one held in his or her *danwei* (Bian, 1994; Walder, 1986, 1992), in general, the distribution of housing is at a low level of inequality. Aligned with the Reform, China introduced a housing market into the cities and replaced the welfare system of housing. Housings have been gradually privatized and become commodities in the market. In 1998, the Chinese government officially abolished the distribution system of "housing by actual houses"; instead, a so-called "housing distribution by money" has been established. Housing became a commodity and is no longer a piece of collective welfare (Zhu, 2000).

Since then, commercial housing has become the main body of urban housing construction. The real estate market emerged and developed, with China seeing rapid housing price increases, especially since 2003. In 2003, a new housing policy ("Promoting Sustainable and Healthy Development of the Real Estate Market") greatly reduced the coverage of economically affordable housing from more than 85 percent of urban residents to the very limited number of low-income residents, pushing most city residents from the government-subsidized housing programs to the private housing market (Li & Song, 2016). The housing prices, especially those in the tier-one cities have rapidly increased since 2008. The average housing price jumped from 315 yuan per squared meters in 1991 to 2,528 in 2008 (Yu & Xie, 2013). From 2008 to 2012, the real price grew 39 percent, from 2,371 yuan per squared to 3,300 (see Figure 3.1, (Li & Song, 2016)). The average housing price income ratio (P/I-ratio) in China steadily increased from 7.11 in 1998 to 15.37 in 2012 (except in 2008), implying that the number of years of a household's income required to purchase a home more than doubled over this period (Li & Song, 2016). China's P/I-ratio of 15.37 in 2012 is greatly above 5.1, the benchmark of being severely unaffordable (Suhaida et al., 2001), which suggests that housing affordability is extremely low in urban China. Homeownership is next to impossible for average urban Chinese.

Housing Price, Homeownership and Marriage

Generally speaking, the more difficult one's access to housing is, the more likely they postpone their decisions on marriage, family formation and child-bearing (e.g., Börsch-Supan, 1986; Clark, 2012; Haurin et al., 1993; Hughes, 2003; Hui et al., 2012; Lin, Chang, & Sing, 2016; Mulder & Billari, 2010; Yu & Xie, 2013). The study of Haurin et al (1993) on U.S youth found a negative relationship between housing rents, income, and headship decision, suggesting that the capability of finding an independent living space could help to explain why people choose to

marry. Correlated to housing rents but differed in its nature, Borsch-Supan (1986) found that housing prices had negative effects on the headship decision, but a housing voucher program that eases the difficulty of homeownership had a positive effect on family formation. Aligned with this study, researchers based US data found that marriage in the US still maintained a high material standard and that low house affordability was associated non-marital living arrangement (Hughes, 2003) and high housing cost also tended to delay the first birth of married couple (Clark, 2012).

Family formation and parenthood respond to house affordability and homeownership not only in the US but in other housing regimes and cultures. Mulder and Billari (2010) found an association between the difficulty of homeownership indicated by low access to mortgages and a high share of owner-occupied housing and difficulty of family formation and thus a low level of fertility, based on data from 18 Western countries with different homeownership regimes. A similar relationship between house affordability and family formation has been found in Spain (Martínez-Granado & Ruiz-Castillo, 2002), Sweden (Lauster, 2006), and Portugal (Martins & Villanueva, 2009). Hui et al (2012), found that an intertwined reality of high housing prices and high elderly dependency ratio leads to a decreased birth rate of married couples in Hong Kong, suggesting an unfriendly housing market could postpone family formation and fertility. Lin et al (2016) however, found that homeownership tended to postpone the decision of child-bearing of a family in Taiwan when compared to couples who resided in rented or shared living space.

The rapidly increasing housing price after the reform in housing distribution throws great pressure on the younger generation who are seeking partners without doubts. Compared to the income of many urban Chinese at a marriageable age, the level of housing price is exceptionally high and almost unfordable, which puts these young men and women in an inferior position in

the marriage market. The study of Yu and Xie (2013) on housing price and age at first marriage disclosed that higher housing price is a significant factor that postpones the marriage of young men and women in China.

Hypotheses

All these above studies focus on the relationship between housing prices, homeownership and the likelihood of family formation and marriage. But whether and how homeownership and housing prices affect the partner selection in marriage remains largely unknown. A house owned by the newly wedded couple is not merely a living space and different in its nature from shared living space (possibly with the parents of the couple), or a rented apartment. As preparing a house to a new family is a long-standing and still popular notion, a house is tied to the imagination of an ideal marriage. According to the identity theory in marriage, those who can provide the new family a house and hence matches with the ideal are more "marriageable" and attractive, thus have a greater advantage in the marriage market, especially when urban house has become more and more unaffordable and nearly impossible for many residents in some Chinese cities. Therefore, we could expect that the tremendously increased housing prices affect not only the timing or the likelihood of marriage but also the partner selection itself.

We hypothesize that the higher the level of housing price, the greater the advantage of a man with better economic status has in the marriage market. In other words, the higher the level of housing price, the more likely a single woman would choose a single man with better economic capability or potential, and usually that means men who are older and better educated than the women. A higher level of housing prices also encourages a stronger willing of exchange between the economic status of a man and the beauty of a woman, i.e. man marrying someone

younger than themselves, as youth and beauty are often tightly correlated. Thus, we hypothesize that the higher the level of housing price, the greater the age and educational gap between husbands and wives:

Hypothesis a: Other things being equal, a higher level of housing prices is associated with a greater age gap between husband and wife.

Hypothesis b: Other things being equal, a higher level of housing prices is associated with a greater educational gap between husband and wife.

If a house is a hurdle to marriage, we should observe a relieved or at least an altered effect of housing prices on the age and educational gap if a man or a woman already owns a house before their marriage, as

Hypothesis c: Other things being equal, the effect of housing price on age or educational gap interact with home ownership before marriage. Specifically, homeownership before marriage will decrease the effect of housing prices on the age or educational difference between husband and wife.

Migrants compared to locals are in general less likely to have a local house, and also have less social capital and other resources to turn to for the preparation of their future family in the cities they currently reside in. Hence they are facing even difficult access to housing and even lower house affordability given the same level of housing prices, which leads to a heavier reliance on the one time "big deal" upon marriage with their future spouse. So we hypothesize

Hypothesis d: Other things being equal, compared to locals, migrants are more sensitive to housing prices in their partner selection.

Data and Methods

Data

China Family Panel Studies (CFPS). The study on housing price and partner selection use the urban sample of 2010, 2012, and 2014 China Family Panel Studies (CFPS). The CFPS is panel data collected by Peking University of China, follows nationally representative respondents at individual, household and community level since 2010. The panel surveys collect information about the current residence and birthplace of the respondents, which makes it possible to merge the survey data with housing price-related information so that the study could examine the impact of housing price on the respondent's partner selection.

Sample. Since the survey does not ask the city of residence of the respondents when they entered marriage, we further subset the data so that the information of local housing prices matches the actual locations of the respondents when the marriage happened. The sample for the analysis only includes *urban* respondents who are married and never migrated, which is referred to as locals in this paper, or who are married and migrated *before* their marriage, which enable us to reasonably treat the current residence as the location of marriage of the respondents. The final sample includes 1,482 respondents, 724 females and 758 males.

Housing Prices Data. Housing prices used in this study are computed from the statistics published by the China Statistical Yearbook Database for 413 municipal level cities from 2000 to 2014.

Measures

Dependent variable 1: Age Heterogamy. The first dependent variable age difference is a variable recording the years of the *age difference* between the **husband and wife**. For example, if a female respondent was 27 and her husband was 30, then the age difference is 3.

Dependent variable 2: Educational Heterogamy. Even though CFPS measures the educational attainment of a respondent by years of education and the highest level of education, it only measures the educational attainment of the spouse of a respondent by educational level. The dependent variable *educational difference* is thus a binary variable, measuring the difference of educational level between a respondent and her spouse. When **the wife is more educated than the husband in the dyad**, the variable is coded as 1, otherwise 0. For example, for a female respondent whose highest educational attainment is college or above, and the highest educational level of her husband was reported to be high school, the value of the educational difference is 1 as the wife is more educated than her husband.

The independent variables of interest are the measures on local housing prices when the respondent entered marriage and the status of the homeownership of a respondent before marriage.

Homeownership before marriage. . This is the variable that measures the status of homeownership upon the marriage of a couple. We use the answer to the question "whose name is on the property certificate of the house if you owned a house before your marriage?" as the value of this variable. Note that usually in urban China, a "house" (In Chinese, *fangzi*) is essentially an apartment of flat. The homeownership does not refer to owning an independent family house or its land on which the house stands. It includes 3 different statuses of

homeownership: When **only** the future spouse or the family of the future spouse of the respondent owned a house before their marriage, which is coded as 1. When the respondent herself or her family owned a house, or both the future spouse (or his family) and the respondent (or her family) owned a house before marriage. This type is coded as 2. And lastly, none of the couple or their families owned a house before marriage.

We constructed a set of independent variables that measures housing prices at the time of the marital event:

Housing price at marriage. The variable measures the absolute level of the housing price (in 1,000 yuan per square meter) of the year of marriage in the cities where the respondent resided when her marriage took place. All the prices are at the municipal level and computed from statistics in China Statistical Yearbook Database by the authors with inflation rate adjusted to the year 2008.

Increase rate of housing price at marriage.

$$\frac{\text{Housing price of the year of marriage} - \text{Housing price of the previous year}}{\text{Housing price of the previous year}}$$

This variable measures the degree of change in housing prices upon marriage.

Housing price greater than the median price of that year. This variable measures the relative level of housing price upon the marriage of a respondent. If the *housing price at the marriage* of a respondent is greater than the median price of the year her marriage took place, it is coded as 1, otherwise 0.

Increase Rate of housing price greater than the median rate of that year. This variable measures the relative degree of change in housing prices upon the marriage of a respondent.

Similarly, if the increase rate at marriage is greater than the median rate of the year of marriage, it is coded as 1, otherwise 0.

Tier-1 city. 1 = marriage took place in a tier-1 city (Beijing, Shanghai, Guangzhou, Shenzhen) (See (Nexus Pacific, 2013)); 0 = otherwise.

Age at marriage. Age of the respondent when she entered marriage.

Birth cohort. Birth cohort of the respondent, grouped in a 5-year interval.

Highest level of education. The highest level of education of the respondent by the time of the survey interview.

Migrant at marriage. This is a dummy variable that indicates the migration status of a respondent **at the time of her marriage**. Because the CFPS panel surveys only collect the resident locations of a respondent at three time points: at the time of birth, at the age of 14, and at the time of the interviews and only collect the year of marriage of a respondent, we defined the status of migration at marriage of a respondent by the following manner: a) When a respondent married after the first wave of survey (i.e.after 2010), and the resident location collected from the latest wave did not match with her location of birth, we defined her as a migrant at the time of her marriage. For example, if a respondent got married in 2011 and the city she resided in 2010 did not match her place of birth, she was a migrant at marriage; Otherwise, we defined them as non-migrants at marriage. b) When a respondent has been married by the first wave of the survey (i.e. 2010), and the current location matched with the location of birth or the location at the age of 14, we defined her as a city local at marriage, which is based on an assumption that multiple-migrations is a relatively rare event in the datasets, thus if by the time of the first survey the

current residence of a respondent was the same as her place of birth, she probably has never been migrated before.

Other control variables. Family background is controlled, which is measured by the socioeconomic status of the respondent's father including the *father's education* and *father's political status* when the respondent was aged 14. A detailed description of these control variables is given in Table 3.1.

Statistical Models

This study uses a variation of Hierarchical Age-Period-Cohort (HAPC) model (Liao & Özcan, 2013) proposed by Yang and Land (Yang, 2008; Yang & Land, 2006), which provides a solution to the "identification problem" (i.e. exact linear dependency among age, period, and cohort (Period = Age + Cohort) existing in the age, period, and cohort data) in analysing repeated cross-sectional surveys. Instead of a standard fixed-effects model including control variables for age, period, or cohort in its model, the HAPC model takes into account the multilevel structure of the data. In other words, the model estimates fixed effects of age and other individual-level characteristics on the first level and random cohort and period effects on the second level. Specifically, instead of conventional multilevel models that one level is embedded in the other (i.e. cohort is embedded in the period, or period is embedded in the cohort), these two levels are cross-classified and formed a "cell" of a cohort-period nexus. This "cell" is the unit of a higher level. Because individuals of one particular cohort can belong to multiple periods, and vice versa, when at least one of these two effects are regarded as random, the APC linear dependency is broken, which solves the "identification problem".

In our case, the linear dependency is the Year of Marriage = Age at Marriage + Birth Cohort. In the analysis, the respondents are cross-classified in different socio-temporal contexts defined by birth cohorts and time periods - the year of marriage.

The level-1 "within-cell" model for a continuous dependent variable is,

In our case, the linear dependency is Year of Marriage = Age at Marriage + Birth Cohort. In the analysis, the respondents are cross-classified in different socio-temporal contexts defined by birth cohorts and time periods - the year of marriage.

The level-1 "within-cell" model for a continuous dependent variable is,

$$y_{ijk} = \beta_{0jk} + \mathbf{\beta X} + e_{ijk} \sim N(0, \sigma^2) \text{ (3.1)}$$

And the level-1 "within-cell" model for a binary dependent variable, which is a mixed effect logit model, is,

$$logit(y_{ijk} = 1) = \beta_{0jk} + \mathbf{\beta X} \text{ (3.2)}$$

The level-2 "between-cell" model is,

$$\beta_{0jk} = \gamma_0 + u_{0j} + v_{0k} \sim N(0, \tau_v) \text{ (3.3)}$$

Note that we only consider random intercept of the level-1 models.

The combined/marginal models are then,

$$y_{ijk} = \gamma_0 + \mathbf{\beta X} + u_{0j} + v_{0k} + e_{ijk} \text{ (3.4)}$$

and

$$logit(y_{ijk} = 1) = \gamma_0 + \mathbf{\beta X} + u_{0j} + v_{0k} \text{ (3.5)}$$

where y stands for the continuous dependent variable *age difference* in the equations (3.1) and (3.4) and binary dependent variable *educational difference* in equation (3.2) and (3.5), **X** is a matrix that represents all fixed-effects variables including age, a quadratic term of age, the variables measuring housing price and homeownership, and other control variables, β is the vector of parameter estimates for the fixed-effects variables, u_{0j} is the fixed cohort effects, v_{0k} is the random period effects, and e_{ijk} is the random error term. The cross-classification of u_{0j} and v_{0j} enables the model to consider influences that come from both the context of the cohort and the context of the period and estimate and evaluate the importance of the two contexts vis-à-vis the fixed effects. Because the CFPS survey data only have 5 cohorts, it is rather difficult to argue for modeling such effects as random as in the applications of Yang (2008) and Yang and Land (2006), we will estimate a variation of the model suggested by Liao and Ozcan (2012) by treating one of the two effects, here the cohort effects v, as fixed instead of random effects. At the same time, a pure fixed effects models with fixed cohort effect and year effect are also conducted as a comparison to the mixed-effects cross-level analysis.

Results

Age Heterogamy

We found that age and the quadratic term of age are significant for both the pooled female population and for the two sub-population of females divided by the migration status at marriage. Age is negatively associated with the age gap between husband and wife, indicating that the older a woman gets married, the smaller the age gap between her and her husband. A particularly interesting finding about the relationship between age at marriage and age difference is that the age gap keeps decreasing when the age at which a female migrant entered marriage

approaches 29, but after 29, the age gap starts to increase, suggesting that age 29 is a critical timing for female migrants in the marriage market. Female migrants may lose their bargaining power in the marriage market after 29 as they tend to marry men who are quite older than themselves or they may actively choose to marry to men who are much older than themselves as these men maybe those who have a greater financial capability (See Figure 3.2).

Age and the quadratic term of age are also significant for the pooled male population and the local males but are not significant for the migrant males. For the local men, the later he entered a marriage, the greater the age gap between him and his wife, which may suggest that local men tend to marry women who are at about the same age regardless of his age. For the migrant men, the age effect is neither significant nor large in terms of magnitude.

Birth cohort matters mainly for female migrants only. Compared to those who were born in 1990 - 1994, which is the youngest generation, women who were born during 1975-1979, 1980-1984, 1985-1990 have a larger age gap between a couple. Several reasons could explain this finding: The data is censored for the youngest generation in terms of marriage, we do not have a full observation of the youngest generation. Or, the younger generation has a new pattern of partner selection in terms of age that they prefer to marry someone of similar age.

Homeownership before marriage and housing prices at marriage are the two factors we are most interested in in this study. We included the main effects of homeownership before marriage, housing price at marriage, increase rate of housing price at marriage, and the interaction term of housing price and homeownership, the interaction term of increase rate of housing price and homeownership in the models to investigate whether and how homeownership before marriage moderates the effect of housing prices on the age difference between husband and wife. We also included two dummy variables (i.e. whether housing price greater than the

median, and whether increase rate of housing price greater than the median) in the models to test whether and how the relative level of housing prices affect the age difference.

First, we found that only variables related to housing prices at marriage but not the increase rate of housing prices at marriage or the two dummy variables are significant in the models. It suggests that it is the absolute level of housing price instead of the degree of change in housing price or the relative level of housing price affect the partner selection of urban Chinese.

Second, we found that homeownership before marriage and housing prices at marriage and their interaction are not significant predictors for the age difference for the male population but significantly predict the age difference for the female population. The interaction term of housing price at marriage and homeownership before marriage is significant for both women in general and female locals in specific but is not significant for female migrants. In other words, homeownership moderates the effect of housing price on partner selection when a woman is local to the city she resides but does not change the effect of housing price for female migrants.

Female migrants are only sensitive to the absolute level of housing prices. 1000 yuan increase in price per square is associated with 0.366 years increase in the age difference between husband and wife. Namely, the age gap between husbands and wives tend to be greater when housing prices are high at the time of their marriage. This finding supports the alternative *hypothesis a*, which states that other things being equal, higher housing prices will increase the age gap between husband and wife.

For female locals, the effect of the housing prices on the age gap is moderated by homeownership before marriage. Compared to women whose future husband already have a house before marriage, the effect of housing prices on the age gap between husband and wife for

the couples who do not have home ownership from either side tends to be smaller even becomes negative. For the local women whose current husband came with a house before marriage, the housing price has a greater effect on their partner selection regarding age difference. Whereas, if both the women and men had houses before marriage, or if a female local had a house herself before her marriage, the effect of housing prices on the age gap has no significant difference from the female locals whose fiancées came with a house as Figure 3.3 illustrates. This finding contradicts the alternative *hypothesis c* that other things being equal, the effect of housing price on the age gap interact with homeownership before marriage and homeownership before marriage will decrease the effect of housing prices on the age difference between husband and wife. Homeownership before marriage will increase the effect of housing prices on the age difference.

Educational Heterogamy

In contrary to what we found in age heterogamy, age and its quadratic term are not significant for either female or male population. Cohort fixed effects are not significant either. But the highest level of education is significant. For the female population, compared to those who were college-educated or above, women who had educational attainment less than college are less likely to have a husband less educated than themselves, namely, women who are less educated are more likely to have husbands better educated than themselves. Similarly, for the male population, men who were less educated are more likely to have a wife more educated than themselves. This finding aligns with the floor and ceiling effect of educational heterogamy: a less educated person is unlikely to marry to someone even less educated, and vice versa.

It is noteworthy that unlike age heterogamy, family background is a significant factor predicting educational heterogamy. For the male population in general and the male locals in specific, men who have a college-educated father are more likely to have a wife more educated than themselves, which suggests that local men from a family of higher socioeconomic status are more likely to break the social norms of educational heterogamy and get married to a woman who is better educated than themselves. This finding may give a clue to the exchange in the marriage market between a better-educated woman and a local man who have more social resources and better family support to the new family. Compared to a man who has a college-educated father, a man who has a father with senior high school education is 0.085 times as likely to have a wife more educated than himself.

In terms of the key independent variables home ownership before marriage and housing price, they have different effects on the female and male population. For the female population, these two factors and their interaction are not significant for the pooled population and local sub-population, but are significant for the migrants, which is a supportive evidence to *hypothesis d* that other things being equal, compared to female locals, female migrants are more sensitive to housing price in their partner selection. This suggests that only the migrant women are sensitive to house affordability in terms of educational heterogamy. In the female migrant sub-population, homeownership works as a moderator that reverses the effect of absolute housing prices on the educational difference between husband and wife. For those migrants who married a man with a house before marriage, the higher the housing price at marriage the greater the probability that she married a man who is less educated than themselves. But for those who married to a man without houses from either side before the marriage, housing price at marriage is negatively associated with the probability of marrying down educationally, namely, the higher the absolute

housing price at marriage, the less likely that a house-less migrant woman could be more educated than her house-less husband.

These findings suggest such a picture: when a migrant woman could find a husband with a house in the marriage market, she is willing to sacrifice to marry a man who is less educated than herself, especially when house affordability is low. But when a migrant woman who could not find a husband with a house in the market, she will stick to the preference of educational heterogamy and married to a man who is at least as educated as herself. When house affordability is low, she is even more unlikely to give up the preference since educational attainment is an important proxy to (future) economic capability that is crucial to the future family formed by the marriage.

On the other hand, neither the homeownership before marriage, nor the absolute level of housing price at marriage, nor the degree of change in housing prices at marriage is significant in the male population. Instead, it is the relative level of housing price at marriage that is significant for both the male migrants and male locals. For the male migrants, compared to those who married in a city that has increased rate of housing price lower than the median increase rate of housing price of the year, a migrant in a city with the rapidly increasing price is more likely to marry to a woman who is more educated than himself. Compared to male migrants in cities with mild increase rate in housing price, men in cities with rapid change in housing prices are 8.60 times more likely to have a wife better educated than himself. In other words, male migrants resided in cities with lower house affordability tend to marry to a better educated wife, which indicates a need to marry a woman with greater human capital to survive in such kind of a city or a better chance to marry a better educated woman in a economically more energetic city, or both.

On the contrary, in the same situation, a local man in cities with rapidly increasing housing prices is only 0.56 times as likely to marry a woman who is more educated than himself. The local man in cities with relatively stable housing prices is more likely to have a better-educated wife compared to their local counterparts in cities with relatively volatile housing prices. A possible explanation could be that the social capital and other resources related to his local status a man has are less useful and hence less valuable in economically more developed cities which makes them less likely to marry a better-educated wife compared to the local men in a less marketized city.

Summary. We found evidence that supports *hypothesis a* that higher housing prices will increase the age gap between husband and wife and *hypothesis b* that higher housing prices will increase the educational difference between husband and wife. Specifically, it is the absolute level of housing price that is associated with age and educational difference of the female population and is the relative level of housing price that significantly predicts the educational difference of the male population.

We also found evidence that partially supports *hypothesis c* that other things being equal, the effect of housing price on age or educational gap interacts with the homeownership before marriage. However, the findings suggest that the interaction between homeownership before marriage and housing prices are more nuanced than the hypothesis states. For the female locals, the absolute level of housing price has a greater effect on their partner selection regarding age difference when the husband came with a house before marriage. But for female migrants, homeownership does not moderate the effect of housing prices on the age difference. Female migrants are only sensitive to the absolute level of housing prices. In terms of educational heterogamy, homeownership before marriage moderates the effect of housing price on the

educational difference of female migrants. When the future husband of a migrant has houses before marriage, she is more likely to marry down educationally.

For *hypothesis d* that female migrants are more sensitive to housing prices in their partner selection, it is only true in terms of educational heterogamy. Both female migrants and female locals are very sensitive to house affordability in terms of age heterogamy.

Discussions and Conclusions

House affordability is associated with the partner selection of urban Chinese. A general pattern we found in the study is the higher the housing price, the greater the age gap between a husband and a wife. But the impact of low house affordability on partner selection is more nuanced when we consider the unbalanced resources single women and men of different social status have in the marriage market.

The marriage market for female locals and migrants are potentially segregated. They react to decreased house affordability in the marriage market in different patterns according to what we found. Homeownership turns out to be a critical resource in the marriage market. But female migrants and locals enjoy very different levels of this resource. Only 48.51% of female migrants entered a marriage for which a house has been prepared, which is significantly less than that for the female locals. (67.33% of local women entered a marriage with a house for the future family; $p < 0.001$). Both the force of exchange and the force of matching play their roles in the partner selection of the local women. For these women whose husband came with a house before marriage, the housing price has a positive and greater effect on their partner selection regarding age. In other words, the finding suggests that when house affordability dropped, a house could trigger a stronger willing to make an exchange between a man and a houseless local woman that

a local woman is more willing to marry an older man who could provide the future family a house, which is often believed to be the physical foundation of a real home. But if a house is not a problem for either side of marriage, matching plays its role in partner selection regardless of the housing price.

On the other hand, we found that the partner selection of female migrants was only sensitive to the absolute level of housing price and the homeownership before marriage played an indistinguishable role. The average age at marriage of the female migrants (24.54) is significantly but only slightly greater than the age at marriage of the local women (24.13) ($p < 0.05$), which indicates female locals and migrants follow more or less the same pace of marriage and should have the same level of youth when youth is a valuable property in the marriage market. But migrant women always marry an older man when house affordability is low regardless of whether this man has a house or not. For the female migrants who have the least resources in the marriage market, the force of exchange seems to be dominant in their partner selection.

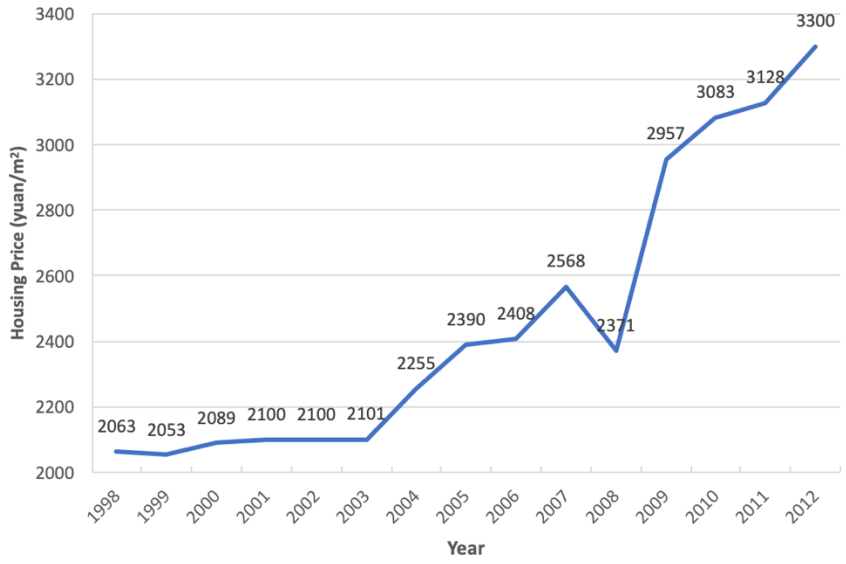
The story of female migrants in terms of educational heterogamy, however, is different. Our findings suggest such a picture: when a migrant woman could find a husband with a house in the marriage market, she is willing to sacrifice a little bit to marry a man who is less educated than herself, especially when house affordability is low. But when a migrant woman who could not find a husband with a house in the market, she will stick to the preference of educational heterogamy and married to a man who is at least as educated as herself. When house affordability is low, she is even more unlikely to give up the preference since educational attainment is an important proxy to (future) economic capability that is crucial to the future family formed by the marriage. Education attainment and youth seem to be different property in

their nature in the marriage market. When a single female migrant has the advantage of education, she has more room to steer her wheel and make her decision.

The analyses have some limitations. First, the data on housing prices are only available from 1999 to 2014, which does not include the most recent period that witnesses the drastic increase in housing prices in many Chinese major cities. The effects of housing price on partner selection may not be fully discovered and analyzed in this study. Second, the measures on housing prices could be more nuanced if data allows. The absolute housing prices used in the study are solely based on the statistics published by the Chinese Statistics Bureau which only considers the average price of new residence built in a year. Future study can collect and include housing prices from other sources which reflect the market price more closely and timely, for example, housing prices published by popular house-searching websites. Third, although the CFPS panel surveys track the respondents since 2010, we still have a rather limited sample of female and male migrants in the datasets. The retrospective determination of migrant status for the respondents that got married before 2010 could be a lack of accuracy. These limitations indicate the needs of future study based on more abundant data.

Figures and Tables

Figure 3.1. Average Real Urban Housing Prices in 1998–2012 (in yuan)



Source: NBSC (2009, 2013a, 2013b). (From Figure 1. Li and Song, 2016)

Figure 3.2. Age Gap (y axis) and Age at Marriage (x axis) for Female Migrants

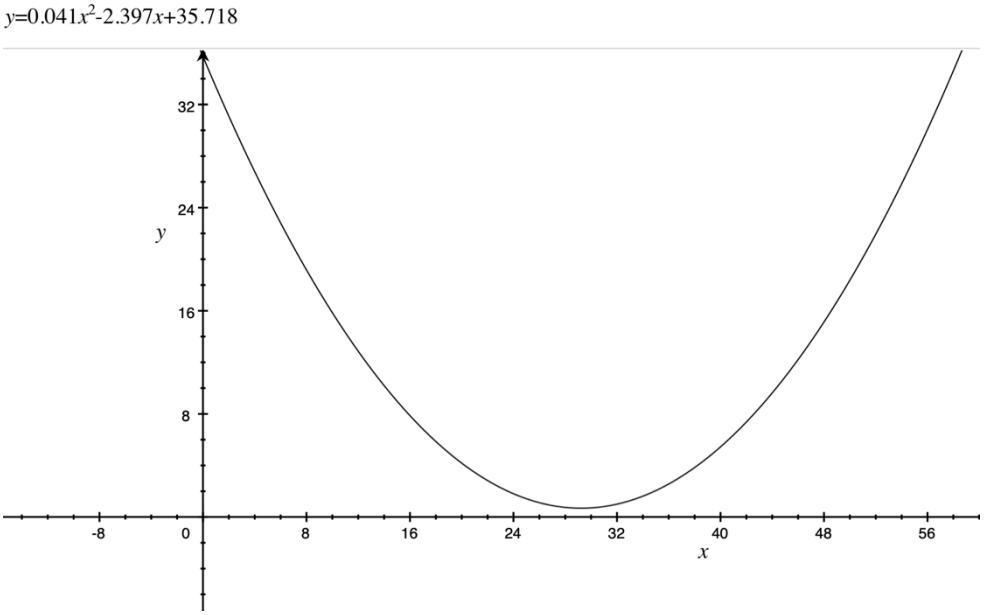


Figure 3.3. Illustration of the Moderation Effects of Home Ownership Before Marriage on Housing Price (Intercepts in the figures are based on sample means of correspondent populations, slopes are based on regression estimates)

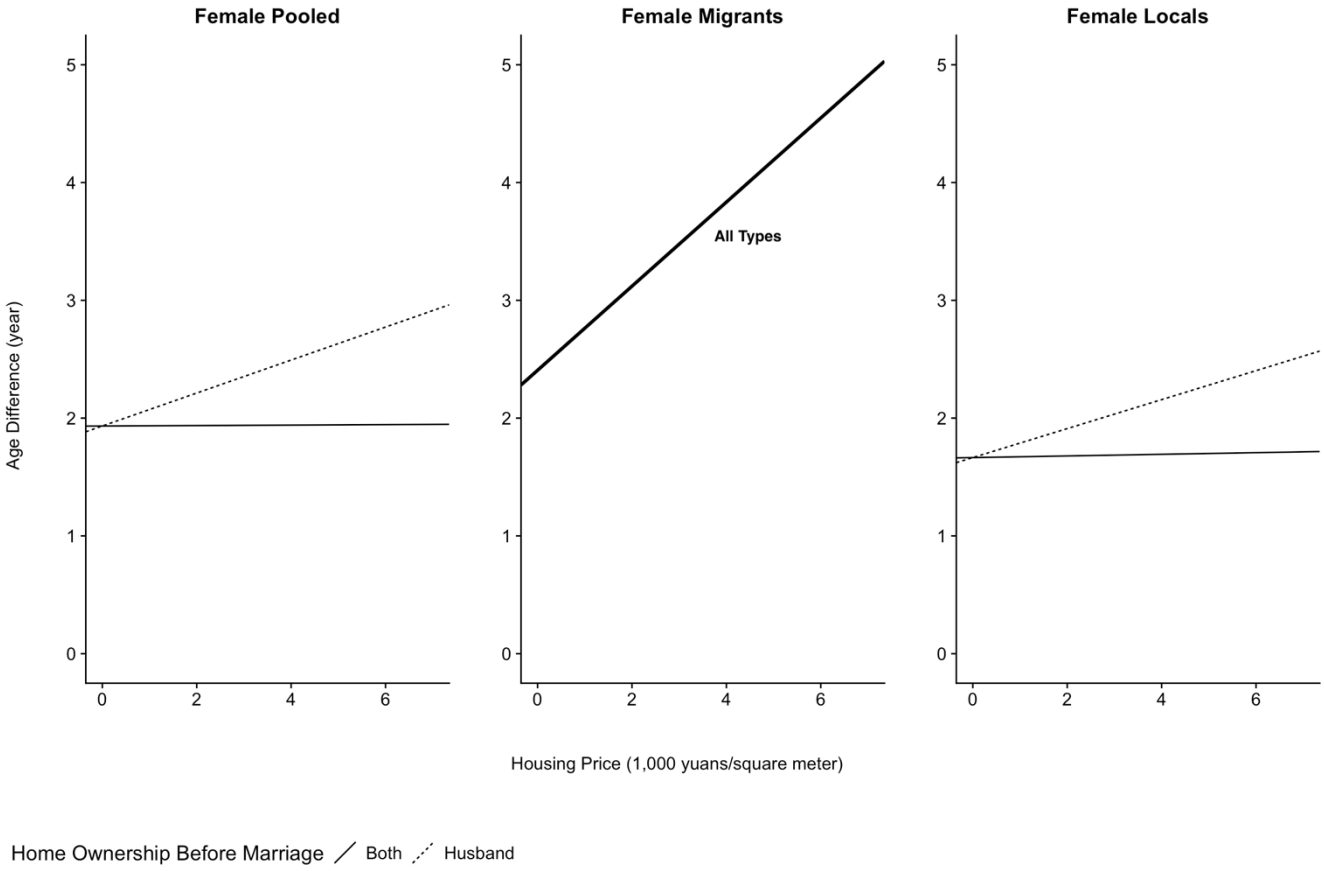


Table 3.1. Summary of Variables

	Female			Male		
Variables	N	Mean	S.D	N	Mean	S.D.
Age Difference	1666	1.933	3.130	1441	2.247	2.935
Wife is More Educated	4357	0.112	0.315	4132	0.086	0.280
Age at Marriage	1666	24.278	3.786	1441	26.318	4.187
Cohort						
1. 1965 - 1969	4357	0.001	0.037	4132	0.004	0.060
2. 1970 - 1974	4357	0.003	0.055	4132	0.007	0.083
3. 1975 - 1979	4357	0.018	0.133	4132	0.035	0.185
4. 1980 - 1984	4357	0.089	0.285	4132	0.108	0.310
5. 1985 - 1989	4357	0.130	0.336	4132	0.109	0.312
6. 1990 - 1994	4357	0.112	0.316	4132	0.076	0.265
Education						
1. Junior High or Below	4357	0.187	0.390	4132	0.158	0.365
1. Senior High or Equivalent	4357	0.094	0.292	4132	0.088	0.284
2. Vocational College	4357	0.059	0.235	4132	0.057	0.232
3. Academic College or Higher	4357	0.041	0.197	4132	0.044	0.204
Migration Status at Marriage	1666	0.363	0.481	1441	0.311	0.463
Father's Education						
1. Junior High or Below	4357	0.262	0.440	4132	0.247	0.431
1. Senior High or Equivalent	4357	0.063	0.242	4132	0.059	0.235
2. Vocational College	4357	0.008	0.087	4132	0.010	0.100
3. Academic College or Higher	4357	0.006	0.074	4132	0.007	0.085
Father's Political Status						
Party Member	1256	0.162	0.368	1210	0.197	0.398
Homeownership before Marriage						
Home Ownership Before Marriage	4357	0.662	0.473	4132	0.791	0.407
Mine or Both	4357	0.187	0.390	4132	0.071	0.257
None	4357	0.151	0.358	4132	0.138	0.345
Housing Price Increase Rate at Marriage	1238	0.114	0.245	1046	0.117	0.254
Housing Price at Marriage (1,000 yuan over square meter)	1323	2.954	2.131	1120	2.940	2.347

Table 3.1. (cont.)

Housing Price > Median	1323	0.578	0.494	1120	0.559	0.497
Housing Price Rate > Median	1323	0.455	0.498	1120	0.457	0.498
Tier 1 City	4357	0.072	0.258	4132	0.070	0.255

Table 3.2. Mixed Effect Models Predicting Age Gap Between Husband and Wife (Female Respondents) (CFPS 2010, 2012, 2014)

Predictors	Female	Female Migrants	Female Locals
Age at Marriage	-1.219***	-2.397***	-0.811**
Age at Marriage Square	0.018***	0.041***	0.010*
Birth Cohort			
0. Before 1965	-4.003	-12.947*	-1.735
1. 1965 - 1969	1.127	1.841	2.581
2. 1970 - 1974	1.352	1.685	2.375*
3. 1975 - 1979	0.962	3.109**	0.502
4. 1980 - 1984	0.638	2.815**	0.153
5. 1985 - 1989	0.379	2.669**	-0.017
Highest Education			
0. Junior High School or Lower	-0.393	-0.484	-0.362
1. Senior High School or Equivalent	-0.288	-0.299	-0.200
2. Vocational College	-0.188	-0.169	-0.116
Migrant Before Marriage	0.151		
Father's Socio-Economic Status			
Party Member	-0.207	0.446	-0.527
Highest Education			
0. Junior High School or Lower	-0.743	-3.240	0.623
1. Senior High School or Equivalent	-0.588	-2.891	0.655
2. Vocational College	0.107	-1.687	0.782
Home Ownership Before Marriage			
Mine or Both	0.140	0.366	0.279
None	0.240	-0.218	0.415
Housing Price at Marriage	0.140	0.357**	0.123
Housing Price Rate at Marriage	0.240	-0.977	-0.790
Home Ownership*Housing Price			
Mine or Both	-0.138	-0.214	-0.116
None	-0.222*	-0.140	-0.229*
Home Ownership*Housing Price Rate			
Mine or Both	1.627	-5.612	2.536
None	1.129	-1.201	1.310
Housing Price Greater Than Median	0.177	0.104	0.066
Housing Price Rate Greater Than Median	-0.053	0.077	0.005
_con	20.376***	35.718***	14.450***

Table 3.2. (cont.)

Statistics			
N	282	282	668
Log likelihood	-2307.081	-676.799	-1604.893
sd(_cons)	0.486	0.000	0.623
sd(Residual)	2.722	2.667	2.641
BIC	4799.285	1511.570	3391.905

Table 3.3. Mixed Effect Models Predicting Age Gap Between Husband and Wife (Male Respondents) (CFPS 2010, 2012, 2014)

Predictors	Male	Male Migrants	Male Locals
Age at Marriage	1.162***	0.444	1.346***
Age at Marriage Square	-0.014***	-0.001	-0.017***
Birth Cohort			
0. Before 1965	-1.405	-3.373	-1.061
1. 1965 - 1969	-0.587	-0.607	-1.005
2. 1970 - 1974	-0.364	-0.251	-0.204
3. 1975 - 1979	-0.907	-0.561	-0.941
4. 1980 - 1984	-0.837	-0.844	-0.701
5. 1985 - 1989	-0.305	-0.373	-0.215
Highest Education			
0. Junior High School or Lower	0.411	-0.134	0.644
1. Senior High School or Equivalent	-0.028	0.122	0.046
2. Vocational College	-0.285	-0.671	0.013
Migrant Before Marriage	-0.443*		
Father's Socio-Economic Status			
Party Member	-0.228	-0.370	-0.148
Highest Education			
0. Junior High School or Lower	0.611	0.567	0.842
1. Senior High School or Equivalent	0.853	0.688	1.117
2. Vocational College	1.184	1.858	0.942
Home Ownership Before Marriage			
Mine or Both	0.418	0.742	0.355
None	0.364	0.689	0.288
Housing Price at Marriage	0.122	0.182	0.098
Housing Price Rate at Marriage	0.366	2.463	0.138
Home Ownership*Housing Price			
Mine or Both	-0.113	-0.177	-0.100
None	-0.184	-0.326	-0.116
Home Ownership*Housing Price Rate			
Mine or Both	-0.339	-0.015	-0.323
None	0.539	-0.320	0.672
Housing Price Greater Than Median	-0.004	-0.006	-0.048
Housing Price Rate Greater Than Median	-0.125	-0.749	-0.046
_con	-18.997***	-9.117	-22.143***

Table 3.3. (cont.)

Statistics			
N	984	209	685
Log likelihood	-2064.350	-470.207	-1582.816
sd(_cons)	0.483	0.000	0.564
sd(Residual)	2.412	2.295	2.408
BIC	4314.774	1090.000	3348.455

Table 3.4. Mixed Effects Logit Models Predicting a Wife is More Educated Than Her Husband (Female Respondents) (CFPS 2010, 2012, 2014)

Predictors	Female	Female Migrants	Female Locals
Age at Marriage	-0.125	-0.490	-0.222
Age at Marriage Square	0.002	0.010	0.003
Birth Cohort			
0. Before 1965	0.200	-20.231	1.394
1. 1965 - 1969	0.044	-2.525	0.920
2. 1970 - 1974	-0.237	-2.049	0.461
3. 1975 - 1979	0.126	-1.459	0.705
4. 1980 - 1984	0.162	-1.214	0.549
5. 1985 - 1989			
Highest Education			
0. Junior High School or Lower	-2.468***	-3.266***	-2.408***
1. Senior High School or Equivalent	-0.838**	-1.787**	-0.554
2. Vocational College	-0.499	-1.286*	-0.314
Migrant Before Marriage	0.117		
Father's Socio-Economic Status			
Party Member	0.237	0.571	0.146
Highest Education			
0. Junior High School or Lower	1.114	2.012	1.465
1. Senior High School or Equivalent	0.921	1.755	1.279
2. Vocational College	-0.112	-0.938	0.579
Home Ownership Before Marriage			
Mine or Both	-0.471	-1.828	-0.151
None	0.024	1.414	-0.336
Housing Price at Marriage	-0.037	0.018	-0.032
Housing Price Rate at Marriage	-0.288	0.066	-0.567
Home Ownership*Housing Price			
Mine or Both	0.056	-0.099	0.071
None	-0.071	-0.548*	0.053
Home Ownership*Housing Price Rate			
Mine or Both	0.510	10.568	-0.280
None	0.899	-0.410	1.322
Housing Price Greater Than Median	0.161	0.612	-0.039
Housing Price Rate Greater Than Median	-0.203	-0.415	-0.115
_con	1.502	6.903	2.110

Table 3.4. (cont.)

Statistics			
N	950	282	668
Log likelihood	-498.957	-144.470	-338.084
sd(_cons)	0.276	0.825	0.207
BIC	1183.038	435.629	845.279

Table 3.5. Mixed Effects Logit Models Predicting a Wife is More Educated Than Her Husband (Male Respondents) (CFPS 2010, 2012, 2014)

Predictors	Male	Male Migrants	Male Locals
Age at Marriage	0.326	0.324	0.304
Age at Marriage Square	-0.005	-0.004	-0.005
Birth Cohort			
0. Before 1965	0.207	-1.702	0.119
1. 1965 - 1969	0.503	-0.653	0.617
2. 1970 - 1974	-0.024	-0.321	-0.225
3. 1975 - 1979	-0.058	-0.370	-0.152
4. 1980 - 1984	-0.197	-1.651	-0.187
5. 1985 - 1989			
Highest Education			
0. Junior High School or Lower	3.742***	3.439**	4.348***
1. Senior High School or Equivalent	3.096***	3.476**	3.515**
2. Vocational College	2.651**	2.698*	2.944**
Migrant Before Marriage	-0.066		
Father's Socio-Economic Status			
Party Member	0.016	-0.669	0.047
Highest Education			
0. Junior High School or Lower	-1.920**	-0.123	-2.616**
1. Senior High School or Equivalent	-1.917**	-0.695	-2.463**
2. Vocational College	-1.175	0.448	-1.691
Home Ownership Before Marriage			
Mine or Both	-0.172	0.572	-0.177
None	-0.064	-0.010	-0.221
Housing Price at Marriage	0.057	-0.184	0.121
Housing Price Rate at Marriage	0.812	-4.192	1.250
Home Ownership*Housing Price			
Mine or Both	0.007	-0.083	-0.012
None	-0.026	0.042	0.017
Home Ownership*Housing Price Rate			
Mine or Both	0.798	2.293	0.936
None	-0.312	-6.199	0.456
Housing Price Greater Than Median	-0.034	0.276	-0.169
Housing Price Rate Greater Than Median	-0.138	2.262***	-0.573*
_con	-7.204**	-9.617	-6.584*

Table 3.5. (cont.)

Statistics			
N	894	209	685
Log likelihood	-470.323	-84.491	-360.992
sd(_cons)	0.000	0.000	0.000
BIC	1124.131	307.882	891.748

References

Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *The Quarterly Journal of Economics*, *115*, 715–753.

Becker, G. S. (1973). A Theory of Marriage: Part I. *Journal of Political Economy*, *81*.

Becker, G. S. (1974). A Theory of Marriage: Part II. *Journal of Political Economy*, *82*.

Becker, G. S. (1991). *A Treatise on the Family*. Cambridge: Harvard University Press.

Bian, Y. (1994). *Work and Inequality in Urban China*. Albany: State University of New York Press.

Bian, Y., Logan, J. R., Lu, H., Pan, Y., & Guan, Y. (1997). Work Units and Housing Reform in two Chinese Cities. In E. Perry & X. Lu (Eds.), *Danwei: The chinese work unit in historical and comparative perspective*. New York, NY: M.E. Sharpe.

Blackwell D.L, & Lichter, D. T. (2004). Homogamy among dating, cohabiting, and married couples. *The Sociological Quarterly*, *45*, 719–737.

Börsch-Supan, A. (1986). Household formation, housing prices, and public policy impacts. *Journal of Public Economics*, *30*, 145–164.

Clark, W. A. V. (2012). Do women delay family formation in expensive housing markets? *Demographic Research*, *27*, 1–24.

England, P., & McClintock, E. A. (2009). The Gendered Double Standard of Aging in US Marriage Markets. *Population and Development Review*, *35*, 797–816.

Fu, V. K. (2001). Racial Intermarriage Pairings. *Demography*, *38*, 147–159.

Goldstein, J. R., & Kenney, C. T. (2001). Marriage Delayed or Marriage Forgone? New Cohort Forecasts of First Marriage for U.S. Women. *American Sociological Review*, *66*.

Haurin, D. R., Hendershott, P. H., & Kim, D. (1993). The Impact of Real Rents and Wages on Household Formation. *The Review of Economics and Statistics*, *75*, 284–293.

Hughes, M. E. (2003). Home Economics: Metropolitan Labor and Housing Markets and Domestic Arrangements in Young Adulthood. *Social Forces*, *81*, 1399–1429.

Hui, E. C., Zheng, X., & Hu, J. (2012). Housing price, elderly dependency and fertility behaviour. *Habitat International*, *36*, 304–311.

Kalmijn, M. (1993). Trends in black/white intermarriage. *Social Forces*, *72*, 119–146.

Lauster, N. T. (2006). A room of one's own or room enough for two? Access to housing and new household formation in Sweden, 1968-1992. *Population Research and Policy Review*, *25*, 329–351.

Li, P., & Song, S. (2016). What pushes up Chinas Urban housing price so high? *Chinese Economy*, *49*, 128–141.

Liao, T., & Özcan, B. (2013). Family Forms Among First- and Second-Generation Immigrants in Metropolitan America, 1960–2009. In et al. Fong (Ed.), *Immigrant adaptation in multi-ethnic societies: Canada, taiwan, and the united states*. New York, NY: Routledge.

Lichter, D. T., McLaughlin, D. K., & Ribar, D. C. (2002). Economic restructuring and the retreat from marriage. *Social Science Research*, *31*, 230–256.

Lin, P. S., Chang, C. O., & Sing, T. F. (2016). Do housing options affect child birth decisions? Evidence from Taiwan. *Urban Studies*, *53*, 3527–3546.

Logan, J., & Bian, Y. (1993). Inequalities in access to community resources in a Chinese city. *Social Forces*, *72*, 555–576.

Mare, R. D. (1991). Five decades of educational assortative mating. *American Sociological Review*, *56*, 15–32.

Martins, N., & Villanueva, E. (2009). Does high cost of mortgage debt explain why young adults live with their parents? *Journal of the European Economic Association*, *7*, 974–1010.

Martínez-Granado, M., & Ruiz-Castillo, J. (2002). The decisions of Spanish youth: A cross-section study. *Journal of Population Economics*, *15*, 305–330.

McClintock, E. A. (2014). Beauty and status: The illusion of exchange in partner selection? *American Sociological Review*, *79*, 575–604.

Mulder, C. H., & Billari, F. C. (2010). Homeownership regimes and low fertility. *Housing Studies*, *25*, 527–541.

Nexus Pacific. (2013). *China city tier system: how it works and why it is useful*. Retrieved from http://nexus-pacific.com/blog/2013/7/9/china-city-tier-system-how-it-works-and-why-its-useful

Oppenheimer, V. K. (1998). A Theory of Marriage Timing. *American Journal of Sociology*, *94*.

Qian, Z. (1997). Breaking the racial barriers: Variations in interracial marriage between 1980 and 1990. *Demography*, *34*, 263–276.

Qian, Z., & Preston, S. (1993). Changes in American marriage, 1972 to 1987: Availability and forces of attraction by age and education. *American Sociological Review*, *54*, 482–495.

Rosenfeld, M. J. (2008). Racial, Educational, and Religious Endogamy in the United States: A Comparative Historical Perspective. *Social Forces*, *87*, 1–32.

Sassler, S., & Joyner, K. (2011). Social exchange and the progression of sexual relationships in emerging adulthood. *Social Forces*, *90*, 223–245.

Schoen, R., & Weinick, R. M. (1993). Partner choice in marriages and cohabitations. *Journal of Marriage and the Family*, *55*, 408–414.

Schoen, R., & Yen-Hsin Alice Cheng. (2006). Partner Choice and the Differential Retreat from Marriage. *Journal of Marriage and Family*, *68*, 1–10.

Suhaida, M. S., Tawil, N. M., Hamzah, N., Che-Ani, A. I., Basri, H., & Yuzainee, M. Y. (2001). Housing affordability: A conceptual overview for house price index. *Procedia Engineering*, *20*, 346–353.

Sweeney, M. M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review*, *67*, 132–147.

Walder, A. G. (1986). *Communist Neo-Traditionalism: Work and Authority in Chinese Industry*. Berkeley: University of California Press.

Walder, A. G. (1992). Property Rights and Stratification in Socialist Redistributive Economies. *American Sociological Review*, *57*.

Watson, T., & McLanahan, S. (2011). Marriage meets the joneses relative income, identity, and marital status. *The Journal of Human Resources*, *46*, 482——517.

Whyte, M., & Parish, W. (1984). *Urban Life in Contemporary China*. Chicago: University of Chicago Press.

Xinhua News Agency. (2011). *Survey shows young Chinese postpone marriage due to housing pressure*.

Yang, Y. (2008). Social Inequalities in Happiness in the United States, 1972 to 2004: An Age-Period-Cohort Analysis. *American Sociological Review*, *73*, 204–226.

Yang, Y., & Land, K. C. (2006). A Mixed Models Approach to Age-Period-Cohort Analysis of Repeated Cross-Section Surveys: Trends in Verbal Test Scores. In Ross M. Stolzenberg (Ed.), *Sociological methodology*. Boston: Blackwell Publishing.

Yu, J., & Xie, Y. (2013). Social change and trends in determinants of entry to first marriage (She hui bian qian yu chu hun ying xiang yin su de bian hua). *Sociological Research (She Hui Xue Yan Jiu)*, *1406*.

Zhang, C., An, G., & Yu, X. (2012). What Drives China's House Prices: Marriage or Money? *China and World Economy*, *20*, 19–36.

Zhou, F. (2015). *A huge burden for men seeking marriage*. Beijing.

Zhu, J. (2000). The Changing Mode of Housing Provision in Transitional China. *Urban Affairs Review*, *35*.

CHAPTER 4: CHINESE SINGLES'S MARRIAGE OPTIONS AND ATTITUDES: A STUDY ON CHINESE SOCIAL MEDIA DATA

Introduction

The recent decade witnessed a steep increase in housing prices in urban China. The wave of rocketing housing price swept beyond the most developed cities in China and struck Chinese tier-2 and tier-3 cities (Li & Song, 2016). Evidence suggests that the tension between the social norm of homeownership as an expectation and preparation for marriage and the more and more unfordable housing affects the actual marital behaviors of urban Chinese (Yu & Xie, 2013). However, how the tension, in turn, influences the social norm of partner selection of Chinese younger generation and how the young Chinese react to it remain unanswered.

Generally speaking, the more difficult one's access to housing is, the more likely they postpone their decisions on marriage, family formation and child-bearing (e.g., Börsch-Supan, 1986; Clark, 2012; Gholipour & Farzanegan, 2015; Haurin, Hendershott, & Kim, 1993; Hughes, 2003; Hui, Zheng, & Hu, 2012; Lin, Chang, & Sing, 2016; Mulder & Billari, 2010; Yu & Xie, 2013). The study of Haurin et al (1993) on U.S youth found a negative relationship between housing rents, income, and headship decision, suggesting that the capability of finding an independent living space could help to explain why people choose to marry. Researchers based US data found that marriage in the US still maintained a high material standard and that low house affordability was associated with non-marital living arrangements (Hughes, 2003) and high housing cost also tended to delay the first birth of married couple (Clark, 2012). Based on data from 18 Western countries with different homeownership regimes, Mulder and Billari (2010) found an association between the difficulty of homeownership and difficulty of family formation and thus a low level of fertility rate. A similar association between the decision in

family formation and house affordability also found in other housing regimes and cultures (e.g. Gholipour & Farzanegan, 2015; Hui et al., 2012; Lauster, 2006; Martins & Villanueva, 2009; Martínez-Granado & Ruiz-Castillo, 2002).

Since the Reform in 1979, Chinese housing has gradually become a commodity exposed to the influence of the market and was no longer a piece of collective welfare (Zhu, 2000). When the time came to 2010s, compared to the income of many urban Chinese at marriageable age, the level of housing price is exceptionally high and almost unfordable (Li & Song, 2016), which is mostly driven by the enormous economic growth after the Reform (Zhang, An, & Yu, 2012). The relative cost of marriage increases so much as the yearly income of a single young man is almost incomparable to the total price of a house in some major Chinese cities, which sets a great barrier for family formation. But it is still almost a norm in China that a young man should prepare a house for the future family when he marries his wife (e.g. Zhou, 2015).

Social norms are rules about behaviors that articulate what a member in society should do and should not. Individuals who violate social norms are expected to receive disapprovals, penalties and other kinds of sanctions implemented by the members in the society (McIntyre, 2014). Both economic incentives and social norms can provide a purpose to rational behavior. In contrast to economic incentives which imply "material rewards" to a certain behavior, the significance of social norms to a behavior lies in its ability to trigger positive feelings such as pride or self-respect, or negative feelings such as shame or guilt depending on whether the individual acts accordance or against the norms (e.g. Lindbeck, 1997).

As the third substantive section of a series of studies on the impact of social transformation on partner selection, the object of the study in this chapter lies on the intersection of two hotly debaded identities of urban Chinese – *shengnv* (namely, "leftover-women") and

fangnu (namely, "house-slave"). Previous qualitative research on the postponement of marriage of Chinese women suggested that Chinese state media developed a narrative that depicted the late entry of marriage of women as risky, problematic and harmful (Fincher, 2016). Shadowed by this narrative, women have less bargaining power in the marriage market as they would like to get married "on-time" to avoid becoming "leftover", which then put them in an disadvantageous position in the bargaining of homeownership with their potential partner (Fincher, 2016). Yet homeownership is the largest piece of property of most urban Chinese and many Chinese urban citizens could not afford a house or were caught up by excessive monthly mortgage installments and identified themselves as the salves of house (*fangnu*) (Chiang, 2018). The study on the social media data provided further evidence to understand and question these two identities and to inquire the tension between the social norm of homeownership as a preparation to marriage and the enormously increased housing price. This chapter is dedicated to answer these questions – how the decreased house affordability affects and reshapes the norm of marriage of Chinese younger generation, and how the singles react and feel about the changing and/or unchanged norms in marital behaviors. I focuses on the voice of China's younger generation who are at marriageable age and were affected the most by the rocketing housing price, by investigating the attitudes, opinions, feelings, and experiences they shared in Chinese social media.

Weibo: Chinese Major Social Media

Online interaction has become more and more a regular part of daily life for a demographically diverse population of hundreds of millions of people worldwide, which generate fine-grained time-stamped records of human behavior and social interaction at the level of individual events, yet are global in scale (Golder & Macy, 2014) that provides a new source data for the studies on

attitudes, opinions, and sentiments. The social media platform I focused on in this study is Sina *Weibo*. *Weibo*, namely "microblog", launched in 2009, is Chinese dominant social media analogous to Twitter as users express and distribute their opinions and sentiments with a short text, images or video clips. Until 2016, *Weibo* has more than 297 million active users with nearly 70% of them aged 18-30 (Sina Data Center, 2016), which overlaps greatly with the population that is most active in the marriage market. The meta-data generated with the main body of the social media data, such as the time and geographical information, also enables a researcher to investigate the trend and geo-patterns of social topics. Even though social media data often lack the detailed demographic profile information that is standard in survey research, many users of social media like Twitter usually only provides sparse, invented, or ambiguous profile information (Golder & Macy, 2014), basic demographic measures such as age, gender or location, however, still provide unique value when they are matched with the in vivo, quick response to social topics. For instance, Figure 4.1 depicts the geographical pattern of topics that relates housing price and marriage, based on the data I collected in the study. Posts generated by users from the coastal areas, especially the cities around Shanghai, included words related to both housing prices and marriage most frequently.

To delve into the narratives and criteria of marriage in recent China, I approach the data with these questions: How do they talk about marriage and housing prices? How do they relate housing price to marriage and vice visa? What do they care the most and who do they worry about the most in the relevant topics? Does the narrative on housing price and partner selection intersect with gender and class? Especially, do they believe women and men in partner seeking are impacted differently by the increasingly unaffordable housing price? If so, how? Do city-born and rural migrants are impacted differently? If so, how? These questions also echo with the

studies in the previous chapters on the partner selection of female migrants and the effects housing prices on heterogamy, respectively, to shed light on the motivations underneath the findings in the previous chapters.

This chapter proceeds as follows: Section 2 describes the methods of data collection and analyses. Section 3 presents the results of machine learning on the data and Section 3 the results of qualitative analysis. Section 5 concludes.

Data and Methods

Data

The study collects *Weibo* posts via two approaches. The first approach is a daily keyword search on newly created posts since June 2017, the starting date of the project. A list of keywords is presented in Table 4.1. The keywords are constituted of three categories: one category is the keywords regarding partner selection, the other category is regarding housing price. The third category is keywords that inherently related both partner selection and housing price. For each category, I established five or six (pair of) keywords with the consideration of the most semantically closely related words to the topic and words most frequently appear in a preliminary manual collection of 200 *Weibo* posts by keyword search on "getting married" and "housing price". The study collects the posts itself as well as the meta-data of the posts, including the time of posting and the publicly accessible account information of the users who created these posts, such as their age, gender, city, and self-description tags. These posts will be referred to as post *set (a)*.

The second source of posts is from a pool of 10,000 *Weibo* users which are collected via computer algorithm from all *Weibo* users. The study collects these users' publicly accessible

account information and the public posts they created, which will be stored as post *set (b)*. The posts collected through this process are filtered by a keyword search using the same keyword list presented in Table 4.1. The posts contain the target keywords and the meta-data of these posts will be stored and referred to as post *set (c)*, which provides retrospective records of posts of interest from September 2009, the launch date of *Weibo* to June 2017, the starting date of the project in *Weibo* data collection. The study does not collect multimedia data such as images or videos. See Table 4.2 for a summary of these sets.

Sample. I further randomly sampled 1,000 posts from all the collected posts which have co-occurrences of target keywords from the three keyword categories (i.e. from the pooled post set combining *set (a)* and post *set (c)*) for a qualitative context analysis. Note that in pooled post set I only keep one post per user, so that the sample 1,000 posts are from 1,000 unique users. *Weibo* users have agreed on the *Weibo* Online Service Agreement and understand the possibility that their Sina *Weibo* posts are subject to data collection through *Weibo* API. The study collected publicly available and already existing posts only. All the information that is identifiable to the individual users such as images, account names, links, and the original posts will not be published or disseminated in any manner and will be destroyed completely when the study is finished.

Methods

The development in computational social sciences offers new techniques to extract themes and meanings from a great number of texts beyond the capability of human readers to consume. These new techniques provide new opportunities to fully realize the great potentials of online interactions in the studies of attitudes, opinions, and sentiments. In this study, I applied the

techniques in machine learning to discover topics in the *Weibo* posts and identify meanings of the keywords of interests given by the *Weibo* users in their daily online interactions. However, the capability of machine learning and natural language processing techniques is still limited in the current stage that they could not provide an in-depth interpretation of the topics and meanings, I also conducted a qualitative content analysis on a sample of the posts collected.

Machine Learning Approach

Topic Modeling. Topic modeling is a form of unsupervised machine learning on text mining, with which one could discover topics or concepts from a large body of text data algorithmically (Brett, 2012; Posner, 2012). The dominant technique for performing topic modeling is Latent Dirichlet Allocation (LDA), which a three-level hierarchical Bayesian model first developed by Blei, Ng, and Jordan (Blei, Ng, & Jordan, 2003). Each document in a text collection is modeled as a finite mixture over an underlying set of topics, and each topic, in turn, is modeled as a finite mixture over an underlying set of topic probabilities (Blei et al., 2003). In other words, one can imagine that assuming the underlying topics determine the frequency and relationships of words in a document of a text collection, and a document has several topics, the algorithm could discover the underlying topics by statistically studying words in all the documents of the collection. This project will use a Python library *gensim* to construct topic models, extract topics from the Weibo text data, and display the top terms that are important for each topic using LDA algorithm.

Semantic Analysis. Semantic analysis, in general, is the identification of semantic meaning from text. Word2Vec is a neural network model that was developed within Google to provide algorithms for word-vector representations (Google Code Archive, 2013). It takes into text data collection as input and produces the word vectors as output, which then makes it

possible to compute similarities between words by comparing the word vectors (Google Code Archive, 2013). Because the algorithm is based on the word vectors, one can use Word2Vec to predict a context given a word or predict a word given a context (Google Code Archive, 2013).

In this study, I use the Word2vec algorithm provided in the *gensim* library of Python. I created the model using a large amount of *Weibo* data, then identified the most similar words in terms of its meaning to some selected keywords regarding marriage and house affordability. It provided us a new way to discover words that frequently co-occur with and hence are closely related to the keywords of interest, which help us to investigate the narratives of marriage and house affordability in Chinese social media.

Qualitative Analysis

All the previous analyses focus on an aggregate level and the quantitative dimension of the data. Such content analyses focus mainly on the manifest content (the elements that are physically present and countable) of the documents (Berg, n.d.). I also conducted a qualitative content analysis of a grounded theory approach to interpret the meanings of these posts on a sample of collected *Weibo* data. The unit of analysis is each posted item. I used the following procedures: First, I conducted an open coding on the data by carefully and minutely read the posts line by line and word by word to determine the concepts and categories that fit the data (Strauss, 1987). The codes inductively identified are entirely tentative, which will provoke thoughts, questions, and some plausible answers to research questions. As the coding continues, themes or categorical labels will emerge, which leads to the second step – axial coding. I then did a general sorting of items into specified categories to organize the data of a multilevel coding frame. This is a recursive process as it requires several successive sorting of all documents under examination (Berg, n.d.). I then examined the sorted materials to isolate meaningful themes and identify

patterns in the data. The interpretations on the posts serve to answer the general and initial questions, such as how they relate housing price to partner selection and vice visa, what they care the most when they relate partner selection to housing price, and whether the narrative on housing price and partner selection intersect with gender, and to the final development of a generalizable theory to understand the attitudes and the social norm of partner selection of urban youth.

Results from Topic Modeling and Semantic Analysis

This section presents the results of the machine learning on the 99.892 posts collected. It discovered 10 most salient topics in the Weibo posts and identify meanings of four keywords of interests given by the Weibo users in their daily online interactions.

Topic Modeling

Based on 88,892 posts collected from *Weibo*, I conducted a topic modeling in Python to discover the themes in the posts that mentioned both marriage and housing to investigate how these two sets of topics are related in the daily expressions of Chinese social media users. Table 4.3 shows the 15 most important words of the top ten topics discovered by the Latent Dirichlet Allocation (LDA) algorithm of topic modeling.

The two most salient topics in the posts that include keywords from the two categories (i.e. housing prices and marriage), *Topic 1* and *Topic 2* are mainly about marriage and house market, respectively. The key terms in *Topic 1* are *daily life, boyfriend, getting married, kids, jobs, parents, family, mom, graduate, classmate*, indicating this is a topic about some of the most important life events such as finding a partner, marriage and family formation, birth, and personal career (e.g. “boyfriend”, “getting married”, “kids”, “jobs”) and family pressure

(e.g. “mom”, “family”, “parents”) or peer pressure (e.g. “graduate”, “classmate”) in the these events. Participants express their anxiety or opinions regarding achieving the life anchors suggested by the social norm which is embodied by the expectation from their parents or the comparison with their peers.

Key terms in *Topic 2* include *housing price, buy a house, cities, Beijing, Shanghai, Shenzhen, restriction in house purchase, rising, real estate, economy, house market*. This topic clearly focus on the macro-economy, house market, and housing policy in China, and pays particular attention to the most developed tier-1 cities (i.e. “Beijing”, “Shanghai”, “Shenzhen”), which witnessed the most drastic increasing in housing price and are subject to strict house purchase policy implemented by local government (i.e. “restriction in house purchase”).

Among the ten most salient topics, as Figure 4.2 shows, *Topic 1,3,4,6,8* are similar to each other, whereas *Topic 2,5,7,9,10* covers relatively independent themes.

Topic 3 is about the general topic of marriage, such as romantic love, dating, marriage, and divorce. *Topic 4* expresses the hope and wishes for a good and happy marriage. *Topic 6* relates wedding, going home (or go back to one’s hometown), friend and jealousy, indicating this is a topic about peer pressures in marriage and particularly the peer pressure for migrants in big cities who may get married at a later age compared to their high school friends stay in their hometown. *Topic 8* expresses the encouragement from the users themselves to pursue a better life in the future.

Topic 5 expresses the reluctance of getting married (e.g. “don’t want”, “getting married”), but the desire to be rich, owe a house, and live a relaxing life (e.g. “have a lot of money”, “no need”, “work hard”, “want”, “house”). This topic suggests that single women need marriage to

release them from a heavy financial burden but hesitate to step into a marriage as the burden of a marriage is also heavy to bear.

Topic 7 is mainly about renting a house/apartment.

Topic 9 is probably about the preparation stage of a marriage, including finding a partner, buying a house, and decorating and furnishing the house.

Topic 10 is about *xiangqin* (namely, arranged dating) and the conditions and requirements for marriage brought up in the so-called dating (e.g. "buy a house", "buy a car").

Semantic Analysis

Using Word2Vec neural network modeling, I trained the *Weibo* posts data (*set(d)* with 88,892 *Weibo* posts) and obtained a model that could output the most similar words of a certain term, in our case, the keywords regarding marriage and housing price. Table 4.4 lists the results of four most relevant keywords of the study: "get married" (*jiehun*), "house for marriage" (*hunfang*), "buy house" (*maifang*), and "housing price" (*fangjia*).

The most similar words of the certain term could be interpreted as words that share the most similar meaning to the term and the most appropriate words that could be used to replace the term in a context. The word "get married" is semantically related to words like "want to give birth to", "having a second baby" or the "baby" itself, indicating marriage and child-bearing are still two closely related life events for Chinese. It is also a surprising finding that one of the most semantically similar words to "get married" is "come out of the closet", suggesting SNS is used as a place for one to disclose their honest feelings toward the traditional social norm of marriage.

The most similar words to “housing price”, on the other hand, are words about macro economy (e.g. “price of commodities”, “house market”, “land price”), policy on house market (e.g. “adjust (the housing price) back to”) and words describes the mostly increasing trend of housing prices (e.g. “drastically increased”, “rising”, “break the 10,000 (yuan per square meter) line”), which is aligned with the findings in topic modeling (see *Topic 2*).

Words share semantically similar meaning to “buy a house” are mostly words that describes the methods of payment of house purchase, for instance, words like “down payment”, “pay in total”, and “payback loan”. It indicates that when people talk about house purchase, the primary concern is how to make it possible given the high level of housing price. It is noteworthy that “add a name (to the property certificate)” is also identified as a word closely related to “buy a house”, suggesting that house purchase is an event associated with marriage, and it is a common topic in the negotiation on marriage preparation that the groom should buy a house before marrying the bride and the house should be treated as a gift to his future wife (i.e. adding the bride’s name to the property certificate).

It is particularly obvious when we look at the list of similar words to “*hunfang* (house for marriage)”. The ownership of the property, namely, the house, is the most salient concern when people talking about *hunfang*. Words like “invest together”, “invest”, and “alone” describes the share of the property. Words such as “personal asset”, “notarization”, and “under one’s name” disclose the cautious of both the men-side and women-side in determining the ownership of the house. The reason “only daughter” is identified as the most similar word to *hunfang* could be two-fold. On one hand, it may suggest a new trend in house purchase–that the parents of their only daughter will purchase a house before her daughter’s marriage instead of waiting for their future son-in-law to provide the house. On the other hand, being the “only daughter” of the

family could justify terms that are more favorable to the women-side in the bargaining on marriage preparation, and hence justify the co-ownership of the *hunfang* without actual investment from the bride and her family.

Word Cloud

I also generated a word cloud from the 88,892 *Weibo* posts (see Figure 4.3). Some of the most frequent words appear in the posts are: “get married”, “self”, “us”, “without”, “house”, “moment”, “value”, “feeling”, “know”, “together”, “single”, “today”, “like (verb)”, “life”, and “finding a partner”.

In summary, the topics identified by the model suggest the single men and women feel pressure from the unchanged traditional social norm in a marriage that a house is a staple item in the list of marriage preparation. The ownership of the house is the focal point of discussion when the contribution to the house may be unequal between the bride and the groom.

Findings from Qualitative Analysis: Hard to Be Single, Hate to Get Married

This section is a qualitative in-depth analysis of the themes of the posts. Four themes emerged from the 1,000 posts sampled from the collected social media data. First, people have unspoken assumptions on the preparation for marriage, namely, to what extent a couple is ready to wed. These assumptions include critical questions such as what should be on the list of preparation, who should pay for them and how to pay for them, although there are also disagreements and negotiations between the brides and grooms on the marriage preparation. Second, these assumptions have significant implications on the marriage market, the bargaining power of single men and women, the struggles of individuals in deciding when to marry, all of which result in heavy pressures on the shoulders of the singles, especially single women. Relatedly, the

third theme is about the dilemma single women facing in their marital decisions – should they wait and hold for a better marriage or should they marry "on time"? The single women found they were hard to keep being single given the economic and social pressures, but getting married was not an ideal choice either. Even when they decided to marry, they will enter a new battlefield – their new family, which is the fourth theme discussed in this section.

Assumption on Marriage Preparation: Who Pays What?

Marriage preparation is the (material) preparation one did for marriage. It could be the preparation for a specific marriage or the preparation for a marriage in the future that is not yet clear who would be the wife or husband of that marriage.

Unspoken Assumptions on Marriage Preparation: House is a Must and Men Should Pay for It

One obvious agreement in marriage preparation is that two persons who plan to marry are expected to have their *fangzi* (namely, house) at hand, very soon, or at the very least, stated in a concrete and doable plan. Usually, it is the men who should prepare the house. For example, the following post is from a man who talked about when he would be able to marry his girlfriend,

"I asked till which point that you think we are good to get married, she said, when the interiors work of our house is done and you share your bank account with me, that will be the point. I knew that, but I truly don't know when we could get married."

And a woman talked about her dating experience,

"The guy that I had an arranged-date with asked me am I willing to be with him without house and car? I was like, are you kidding me?"

And the norms of partner selection in the hometown stating by one user,

"In my hometown, men would never be considered by the local girls if they don't have fangzi, those who have no house can only fool the girls from other places and marry them when the girls have no other choice."

Despite men and women usually have different feelings on marriage preparation, men seldom take it for granted that the *hunfang* (house prepared for marriage) is something that both the future husband and wife should make contributions to. They understand that getting married without a proper marriage preparation (i.e. *fangzi*) is very often viewed as a compromised proposal to marriage which is subject to a kind approval, an unwilling tolerance, or an agreement made under deception from the future wife.

On the other hand, homeownership of a woman is not expected and sometimes a surprise, as she takes an unexpected move in marriage preparation:

"My girlfriend bought her own house, which screwed the whole plan. Should I marry her now?"

Financial Support from the Parents

Since a *fanzi* is a must, even when it has become rather unfordable in many Chinese cities, and the expected contributions to house purchases are asymmetric between men and women, financial support from the natal families, especially the family of the men-side, becomes expected or even assumed. Someone teased the birth preference of boy, and provided the key reason,

"Couldn't understand those poor families, how could they want to have boys rather than girls? Can you even afford your son's marriage? And then accuse the women asking too much in her marriage…"

A woman told a story of her house purchase and expressed her deep disappointment toward the parents of hers and her husband,

"My husband and I prepared to buy a house, just short for 40 thousand yuan. I thought that my father bought me nothing when I got married and did not provide me 'peijia' (namely, dowry), so I asked him to lend me some money. Never thought he would say no! My husband and I almost kneeled to him. We just want to have our own home. But his parents, my parents, none of them gave us the money, not even lend the money. SAD!"

Refusal of financial support from the parents of the couple is hard to imagine for many young Chinese as the only child in their natal families. For the parent side, many of them take support in marriage preparation as their responsibilities to their children. However, while the support is very much in need, it also allows the influence and intervention of the natal family creep into the new family and impact the power dynamics of it in the future, which is another theme we will discuss later. Yet faced with the harsh reality of house unaffordability and the hard requirement of marriage preparation, the independence of the new family is not the priority of many couples.

Negotiable and Non-negotiable: Women-side v.s. Men-side

Even there are reluctant agreements between men-side and women-side on the marriage preparation, there are still rooms for negotiations on how to implement the actual and specific plan. The focal point falls on how to understand the nature of a *fangzi* for marriage (i.e. *hunfang*), and more bluntly, how to split this property between the future husband and wife.

The most endorsed way of *hunfang* purchase is that the future husband should purchase a house in total or already have a house at hand. If unfortunately, a house is not yet ready, it is the future husband who should pay the major proportion. For example,

"(Reaction to a piece of news 'the bride whose name is not on the property certificate of house (i.e. does not share the homeownership) but was asked to take care of the interior design of the house: Oh, come on, does the man even care about his face? Just paid the down payment of a house and wanted his wife to pay the loan together with her, but didn't even put his wife's name on the property certificate? Even more disgusting, he hesitated to purchase the house until the women agreed to give up the co-ownership. Some many douchebags these days!"

Putting the name of the bride on the property certificate of the *hunfang* has become the focal point in the negotiation, which even carries a symbolic meaning of gender equality and women's right in marriage and beyond. If a *fangzi* is ready, then the bride's name should be added to the certificate; If only the down payment of the house has been paid by the groom, then the bride's name should be added to the certificate for sure, regardless of the actual legal effect of this action. The latter one is particularly relevant to the marriage preparation in the large cities in China, for house affordability is extremely low in these cities and a man could rarely own a house before his marriage. Most of the negotiations focus on how much a man should pay back the down payment and with what proportion of a down payment the man can claim the sole ownership of the house (at least nominally). Usually, the answer to this question is simply a firm "no" from the bride-side: no matter how much the groom paid, the property should be shared by the couple. Although in the end, a practical solution to the purchase could be that the groom (and/or his family) contributes to the major proportion of or all the down payment, when the bride (and/or her family) pays the rest and covers the cost of the decorations and furnishing of

the house. In the end, the couple owns the house together and pay the monthly payment together, which results in many potential financial conflicts within the household in their future family life.

Women: Home Ownership as the Right, Honor, and Hope. Even though the actual amount of money that the men-side and the women-side paid may be unequal, and usually the two sides agree that women could pay less, they often have different ideas on the deserved proportion of the house which is essentially the most expensive and valuable piece of property and the living space of the newly formed family. The argument from the women-side leverages the concept of "right": homeownership is the right of the wife. As one of the posts argues,

"If the new Marriage Law says so, then a man should never use the common money of the new family to pay back the house loan, as it trespasses on the interest of his wife. If the husband chooses not to add his wife's name (to the property certificate), then only when he should cover the total payment of the house himself otherwise he is shamelessly taking advantage of his wife."

Except for making an argument from the perspective of women's rights, some of the *Weibo* posts also addressed that it was about the respect and honor of a future wife and implied the quality of the marriage she is going to step into. An appropriate marriage preparation from the husband suggests the value and virtue of the bride, that she is a woman deserves efforts and attention, that she will have a happy and respectful marriage. Even when the future wife herself may not take this as a valid point, she must consider the opinions and feelings of her family. So even when the young couple themselves understand the difficulty of homeownership in urban China and think it may be negotiable in the marriage preparation, their parents could act as a counterforce to the negotiation. One of the *Weibo* users agreed with the opinion of her friend,

"My roommate said that she would only marry a husband that could afford a house so that her parents won't feel shame in front of their relatives because regardless of what she thinks, her parents still live in a world in which people care about these things very much. She said she should let them live up-straight in their world."

A related argument is that it is stupid to trust the "true love" of a man, and agree to marry him without asking for a house, as true love is vulnerable and marrying with a woman without a serious plan of providing her a house is hardly an indication of true love. Posts on such topics often ensure young women, in the end, will regret their kindness and naiveness to say yes to such a marriage at the beginning. The true "true love" of a man could be easily tested and convincingly proved by providing his future wife a *fangzi*, even more, convincing when the housing affordability became almost impossible in many cities.

Feeling Unfair. On the other hand, men feel the unfairness and pressure in such an arrangement of marriage preparation. The main argument addresses the fairness in the arrangement as the future family is not only the family of the husband but is the family of two persons. Such an argument often goes with the argument that the traditional patriarchal family is no longer the case. For example,

"Everybody saying things for their interests! Think about that, that's the business of both sides, why just the men? It is time to change this deep-rooted traditional mindset. Sons, daughters, all the same. Understand each other, please!"

The men-side also refer to the enlarging economic inequality in the current society to support their negotiation, pointing out that they are so exploited and it is so difficult for them and

so exhausted they are to win the bread for the family, as one of the posts made the following argument to express the anger,

"If your dowry is 20 thousand yuans and your husband can be with you for 50 years, that will be 4000 yuans per year and 10.9 yuans per day, which means you just need to pay 10.9 yuan per day to let a man make money for you as a dog, buy you the clothes, buy you the house, buy you the car, and be your guard. What a bargain!"

However, they also believe, it should be very lucky to marry a woman who does not ask for a house.

Summary of feelings about marriage preparation: from Disagreement to Accusation

The disagreements between the women-side and men-side sometimes escalate to an accusation between men and women. The most radical opinion toward a man marrying a woman without providing her house is to call him a fraud, and even so, only girls with relatively fewer social and economic resources could be deceived, as the quote accused "those who have no house can only cheat the girls from other places to marry to them".

On the other side, men blame girls for being too unrealistic, material and greedy, for example,

"Nowadays girls don't want marriage and don't want children, but most of them are material. They require houses, cars, bank accounts in a relationship like they are queens. If I have all these good things, why would I date you?"

It seems that neither men or women like the negotiation on their marriage preparation and both sides seem to honestly believe that they are not taking advantage of the other side in this

exhausting game. But they, however, still have no other way out or a win-win solution except keep fighting at the negotiation table.

Implications of the Assumptions on Marriage Preparation

Marriage Market

For some single women and men in the marriage market, they may think those who can approach a negotiation table to talk about marriage preparation are already the lucky and successful few. The assumptions on marriage preparation not only affect the people at the table but also shapes the balance between the bargaining power of single men and women in the marriage market.

Arena of Men and Women and Their Families. The marriage market is an arena for single men and women to make a deal on their marriage. The parents of both sides are also active participants in the bargaining process, which is unavoidable if the future couple heavily relies on financial support from their parents. *Mabao nan* (literally, a man who is his mommy's babe) is a term frequently mentioned in many topics regarding partner selection in many posts. It refers to young men who are under a strong influence of their mothers and are not independent mentally, socially and financially from their parents. It especially emphasizes the tendency that a man weights her mother's opinion greater than the opinion of his girlfriend or wife. For example, a woman complained about how she was not trusted or respected by the parents of her boyfriend,

"Mabao nan are the worst in these days. No matter how wonderful a relationship you two have, their parents can screw up the whole thing. You want the house, just say it. But you shouldn't be too greedy, right? Think I am gonna take advantage of your family? But want the house that my family bought? Are you kidding me? If you don't marry me, where will you get a house?"

Mabao nan is hardly a new phenomenon, but it is "the worst in these days" because the parents have more to say in the marriage market "these days", the days when marriage preparation could not solely be done by the efforts of the future couple themselves. While the men and women are the fighters in the arena, their parents are the investors and guardians, precautious, criticizing, sensitive to any potential loss of family property caused by a marriage. A very harsh joke puts mothers of a man and a woman in a date in direct confrontation and lists the qualifications of an ideal husband and wife in the market. Not surprisingly, the mothers are present in the arranged dating,

"A man is dating a woman. The woman's mother asked him, do you have a fangzi? A car? Account balance of more than 500 thousand yuans? Urban hukou? Do you have the plan to run your own business in the future? The mother of the man was pissed off and asked in return, how many abortion surgeries your daughter has done? Can she give birth to a baby? Is she a natural beauty without cosmetic surgery? How many relationships she ever had? She then dragged her boy to leave."

Exchange and Match in the Marriage Market. The above joke also implies a typical expectation of exchange in the marriage market: an exchange between property and chastity. An ideal husband should be rich; a qualified husband needs to have the capability to provide his wife a home, which although is not equal to but is believed to be built on a physical *fangzi*. Whereas an ideal wife should be young, beautiful, without many experiences, loyal, and capable to carry on the pure blood of the man. However, these expectations on men and women as husbands and wives clearly show a mismatch of the life course of men and women. Women should marry young when she has not experienced much according to the requisites, men, on the other hand, should hold until he becomes rich. This also brings us back to the topics of the previous chapter

on the age difference between a married couple. When the qualifications of husband and wife are complicated with enlarged economic inequality, it seems to be a dead-end according to one post,

"Marriage is like a seesaw. It is difficult to reach a balance. Frankly speaking, women want the rich and handsome, and even are willing to be played with, but the rich and handsome won't be serious with them. And they don't care about those young guys who don't have much. But when these guys got the house, the car, the money, they don't want material women, especially those who have many relationships before him."

However, the force of match is a more powerful criterion in the market as those who have better conditions are always considered first. Usually, those good conditions are directly provided by their parents. In other words, the children from the different classes are likely to have different age-difference patterns between husband and wife and the timing of marriage as well. Some of them can afford the criterion of matching in the market and marry "on time", while some of them or most of them will need to hold for until an acceptable deal emerges. For instance,

"The father and mother-in-law of my neighbor's son are 'gongwuyuan' (namely, civil servant) from a middle-level city and only have one child, their daughter. The dowry is 500 thousand yuan and a 30-thousand-yuan car. So the current market for boys and girls is that the boy needs to have a house, and the girl needs to have dowry."

Bargaining Power. When the exchange in the marriage market is between youth/beauty and property, the bargaining power of men and women is thus asymmetric, because youth or the so-called "no-experience" is a more perishable property compared to financial capability. A

hotly debated post shared an experience of how a girl lost her bargaining power when she accidentally got pregnant,

"A girl had a relationship with her boyfriend for a couple of months and decided to get married. Her boyfriend went to see her family and agreed to buy a house and a car in full payment. But when the girl accidentally got pregnant, the boyfriend texted her and said that his family could only afford the 'caili' (namely, a 'gift' that the groom paid to the family of his bride) of 30 thousand yuan and let the girl's parents take care of the house and car…"

Facing the asymmetry of bargaining power, some women become less motivated in the marriage market and actively reject the unfair game. For example,

"With the rocketing housing price in Beijing…Now the girls who are 22-24 are willing to consider all men below 38. Looking at the market at Baihe.com (a dating website), I am now not in a hurry to get married anymore."

Timing of Marriage: The Later the Better?

Another related consequence of the basic assumptions on marriage preparation is its impact on the timing of marriage for these urban young men and women. The timeline for marriage is not only about the development of the relationship between the future husband and wife per se but is also related to the stage of marriage preparation.

"I want to marry him in one and a half years, but I'm afraid I will give him too many pressures, like the house, like the down payment (of the house)…"

However, the barrier of homeownership for a potential marriage is perhaps very different from other items in the list of marriage preparation (for example, a car), because the possibility of buying a house seems to be diminishing as time goes by for many young women and men in

Chinese tier-1 city when housing prices keep rising. As one post lamented the deadlock that "if (you and your boyfriend) cannot afford a house (in Beijing) now, it will become more and more impossible in the future". It could result in a postpone of a marriage, or even an end of a serious relationship, particularly for those who are not locals in the tier-1 cities and facing with pressures from the parents of both sides, "the options in front of the girl (in such a relationship) are: a. break up with her boyfriend and find a more suitable partner; b. get married to him anyway and rent an apartment. c. push back the marriage and wait."

Summary of the feelings about marriage itself: Pressures

Marriage is no doubt a major source of pressure for young urban Chinese. They are facing the pressures of competition in the marriage market and the pressures from their family as well. The pressure from family is so common that those who did not experience the push from their parents appreciated their supports and understanding:

"My dad said you just need to improve yourself, that's my only requirement for you. Can you understand that? Can you see how big this support is? Being single and 25, that's the greatest love I've ever got. More than the support of buying me a house or a car."

The pressure from the family is closely related to the pressure to follow the "pace" in the life course. Single women themselves may or may not agree with the norms of getting married by a certain age. But more than often, their parents could express their worries and push them in a very blunt manner. When it is an exhausting negotiation between the groom-side and the bride-side about the marriage preparation, the big business of finding someone to marry itself could be enough to set a fuse of war within the family of a single man and especially single woman that turns a place of support to a place of pressure.

The Dilemma of Single Women: Time to Get Married or Marry Well?

The tension between a limited time window of marriage in the life course of a woman and the uncertainty of finishing marriage preparation in the future brings many women to a dilemma: should they marry to a man that is "OK" now or should they wait for a "better man"? There is even a new term to categorize such kind of men: *Jingji shiyong nan*, namely, "economy" men. Waiting could be very expensive and risky as it means getting older and losing bargaining power in the marriage market. The time-to-get-married-rule is still the dominant rule for many parents and seems to be the only counter-force of non-negotiable marriage preparation as this post suggested,

"My cousin is 32 and single. My cousin asked her mom today at our family party: what if I get married to a guy who can only afford to rent an apartment? Will you accept that? Her mom responded quickly, well if there is a guy who wants you, I don't care about anything."

A deeper dilemma for single women is the eager for independence from their parents and the ironic paradox of gaining "independence" through dependence. "My friend asked me why I didn't have a plan to purchase a *fangzi*. I said it was simply too difficult to afford a house only by myself, not even the down payment." It appears that the solution to getting a house could be either relying on the support from the parents or to do it together with their partners. Yet either one pushes single women to a marriage, with which they may not satisfy.

Hard to Be Single: (In)Dependence and the Pressure from the Natal Family

Parents can actively push their daughters to a marriage or at least express their eager of seeing a marriage happen very clearly and sometimes determinedly. The financial independence from the natal family seems to be the only possible way to release the young women from the intervention of their parents on the pace of their marriage. Yet, the current house affordability makes a

reasonable degree of financial independence very difficult and so thus their resistance to the time-to-get-married rule. As one post expressed,

"I am a marriage-phobia, but age is always the ultimate rule. When my parents start pushing me, I think the only way to fight back is to have my own house! And without any supports from my parents. Only then I can say"no"! But is it realistic?"

First, regardless of the user's own reluctance toward the getting-married-by-certain-age rule, she and her parents still have a basic and perhaps implicit agreement that marriage is not the own business of hers. She is the daughter of the family. Second, the daughter, instead of trying to arguing with her parents and fighting for her own control on the pace of her marriage by persuading her family, she chose to use a more straight forward and unbeatable weapon - "financial independence" - to win her fight, which indicates that she did not believe any communication with her parents on this topic will turn out to be successful. Third, she already foresaw the failure of her fight, because her financial independence is not "realistic".

Another post pointed out a paradox when a friend of the poster asked her why she did not move out from her parents' home and buy her own house,

"A hilarious logic from one of my friends: I said it is simply too difficult to afford a house only by myself, not even the down payment. He said that your parents could help you. I said I could stay with my parents for now. He said, but that is your parents' home, not yours. I was like, is there any difference? Stay with my parents or use my parents' money to buy a house to call my home?"

Hard to Be Single: Buying House Together with the Partners

If single women choose not to rely on the support of their family, or if that is not even an option available to them, which is the case for many non-locals and lower-income, another realistic option is to buy a house together with their partners.

"Trying to find a suitable apartment to rent in the hot summer, hot like a dog. One get-away: it is a bargain to get married and live together. Being single broke my heart and my bank account."

For migrants like the posters above, the value of marriage is obvious. Getting an ally in the big cities at least brings them some stabilities. Affording a house together with a partner surely greatly reduces the financial burden. The benefits of marriage are not only limited to non-locals or migrants but are more general,

"My friend is 30. Just bought a house in Wuhan. The monthly payment is 5000 yuan. Said if there are two persons to pay the loan that will be much better. Hahahahaha! who would like to get married if they enjoy their current life."

Who Need a Fangzi(house)?

So we can now see who would put *fangzi* in the list of marriage preparation: those who do not want the supports from their family and more often, those who cannot rely the support from the family, such as non-locals in the big cities where house affordability is extremely low, women from lower-income family, women from rural area, etc. In the end, it seems that they will have to seriously consider the dilemma in front of them: should they trade one kind of dependence with another? The following post threw a very negative expectation on the future of single women,

"The future of single women is frightening. If they get married, there is 80% of the possibility that she will marry a family that worships boys more than anything. She will need to devote her whole life to her kids. If they don't get married, her own family will diss her. Cannot afford a house, and no one will take care of them when they grow old…"

For the singles themselves, they have to trade one dependency with another. For their natal family, it is the critical moment to hand over the dependence of their children to someone else. That is why housing became the focal point upon marriage negotiation. The natal family can hold their investment and wait to see if the future son-in-law (or daughter-in-law) will come with a house. If that is the case, they succeed in keeping their family property and hand over the dependence. If that is not quite likely, they then consider making an investment in housing. Any investment before the negation on marriage preparation between the men-side and the women-side may be an unwise deal and let the other side take advantage of them by escaping from the responsibility of house purchase, since other future contributions to the new family from both sides are likely to be either hard to measure and/or without explicit market price, or not distinguishable enough. For example, the household labor is hard to measure, whereas the wage income the couple brings to the new home could not distinguish the contributions between the husband and wife as the income gap between the couple is almost negligible compared to the total value of a *fangzi*. Just as one post said, "rich guys could buy houses anytime, but the poor wait until they get married.".

When Women is Officially Old?

And who needs the house the most? The answer from the posts suggests the old woman. And who are these old women?

"When a woman becomes an old woman? When she is looking for someone to marry her and that person needs to have houses and cars."

This is a very interesting sarcasm that tells some truths. "When a girl grows old, she is forced to choose between a good marriage and *fangzi*. And she needs to be grateful to any of the two choices." When a woman grows "old", she loses her bargaining power drastically in the marriage market not from the eyes of the potential suitors, but first from the brokers in the market:

"Sometimes I arranged some dates for my acquaintances. Multiple unsuccessful experiences. Now I understand why there are some many left-over women in the big cities. What they are asking for: good-looking, educated in prestigious colleges, good jobs, houses, cars, decent family background, age difference within 5 years, born in a well-developed city…And all these conditions are summarized as the word 'serendipity'. Miss any of the above points? No way. But here is the thing, you are already 26!"

Summary on the emotion toward marital decision: Anxiety

The clock is ticking, and the anxiety arises. Single women need a marriage, but not only marrying to a guy. This one-shot try carries many tasks, unfortunately, they often cannot get all of them done in one time.

The anxiety against over-due or "old" is so real but it is noteworthy that "old" is a relative concept. If a single woman has very specific and rigid conditions for the suitors to qualify, she is more quickly to become "old", for example, at the time when she is 26. If a woman has a more flexible list of marriage preparation, time also shows mercy to her. The singles who want more from a marriage ironically have few things other than youth that interests

the suitors in the market, and thus make them have little time to stay in the market. For those who need less, they already have more and can afford to wait longer. In the end, who needs a *fangzi* the most, is ironical, the least possible one to get it.

Aftermath: Power Dynamics in the New Family

The relationship between women and their mother-in-law is an everlasting topic on and beyond social media, which is not surprising, as it is the focal point of power distribution within a newly formed family, especially when the parents of the husband live with the couple. The combining powers of changing the living arrangement of the family, one-child policy, and enlarging economic inequality (with decreasing house affordability as its representation) further complicate this power distribution. When the parents of both the husband and wife play as significant investors of the new family, their influences cannot be shut out of the door of the home of the young couple. When the rocketing housing prices severely compromise the economic independence of many women in urban China, after they choose their side in the dilemma and choose marriage and form their family, they still have the battle to fight for.

Who is the Lady?

An interesting finding from the social media data is that many posts regarding the topics on daughter-in-law and mother-in-law were narrated on *Weibo* in a way like telling stories to a tree-hole. Instead of posting to invite discussions, or share their experiences with their followers, people told the stories like telling them to the air. These stories tend to belong, compared to other relative short posts which are consisted of just a couple of sentences or even a few words. They usually include very specific details from their everyday interactions with their family members. Although there were complaints about the husband, he is just a small role or even absent in the story. The first story I gathered is about an awkward living arrangement of a new couple:

"His father divorced with her mother, and rented an apartment near his home and hooked up with a new woman. His mother stayed with us, with her daughter, the older sister of my boyfriend, who hasn't got married. That is what I can see – when we get married, we have to live with her mother and her sister. Our house is not bought for our marriage but an old one, not large, 3 bedrooms, 90 square meters. We didn't buy any new furniture for our marriage. I feel a little bit uncomfortable that her mother still occupies the main bedroom, and let us stay in the second bedroom. I feel really uncomfortable. OK, no new house, and let us use the second bedroom? Only the main bedroom has a balcony. Our bedroom is so small. And without a balcony, I don't even have a place to do our laundry. In a few months, we will have our baby. She didn't even think about let us move into the main bedroom. My boyfriend said nothing about this. I don't know how to talk about this with my boyfriend either. I really think we deserve the main bedroom. This is not too much, right? His father treated us pretty well, his mother is just OK. I don't like his mother. I am pregnant. She didn't buy food for me, no fruits, made lame dinner, everything was so sloppy. Anyway, I don't like his mother. But I can tolerate this for the sake of my boyfriend. Don't want to harm our relationship. She didn't give me any red-pocket (money) or bought new clothes for me. She made dinner that only suits her daughter's taste but never asked me. I really don't know how to get along with them."

First, the tune of this post is not angry but rather worried. Second, the father-in-law is absent in the story (and the family), and perhaps gave the justification for the narrator to propose a different living arrangement from that status quo. Should the father-in-law be present, her boyfriend and future husband and herself would have been in the role of children rather than the master and lady of the family. The potential contradiction, which is not yet realized as the marriage is not yet realized, between the narrator and the further mother-in-law is from their

different understandings on the question of who are the key members of their family. The narrator felt that she was not respected and has been marginalized in the family, even when she was actually carrying a baby for this family. But the mother-in-law obviously held her status as the lady in the family firmly and giving priority to her daughter over her daughter-in-law as a strategy to show her authority. Should the young couple could afford a new house, the power distribution would have been very different.

The second story is about a woman who lived in an apartment purchased by her husband and his parents.

"Can't sleep. In my mind is all the bad things about my mother-in-law. Didn't put my name on the property certificate of the house they bought. Didn't buy any clothes for my sons, prepared nothing for the birth of my son. Said that they would install an air conditioner for the house but nothing happened. Stayed in my house this long time but didn't pay a penny for the electricity and water fee. Their daughter stayed with us too, paid nothing either of course. She acted like she is a princess, finished her dinner and then just laid down on the couch every night. Hate it!" - ** 414807627070647**

Note that the house was bought for the marriage of the couple, i.e. it is a *hunfang* (house for marriage). But the parents and the daughter of them stayed with the couple. The narrator referred to this apartment as "my" house, which is no doubt at all from the point of view of the narrator herself, as the apartment is a part of the deal in her marriage preparation. She was not happy with the current situation and complained that the father- and mother-in-law did not pay their bills. For her, they are not the investors and the house is a gift to the new family which she deserved justly. The parents are merely viewed as the guests of this house.

Who are the Members of the New Family?

So who are the members of the new family? From the story above, the narrator did not take the parents of her husband as legitimate family members, even though they were sharing the same living space and they were the legal owners of the house. Once a house is purchased as a *hunfang*, a house purchased as an item in marriage preparation, the actual investors of this property are no longer legitimate participants in the family affairs. And their daughter and other family members of the investors, are not family members as well. Another story described a similar conflict between the wife and the mother-in-law, but this time the narrator, the wife, has a very different attitude towards the mother-in-law:

"When we got engaged, she promised us to take care of the down payment of our house, but then totally refused to realize her promise. My mother-in-law is a piece of trash! Even though we pay for the house loan and money from somebody else for the down payment, we still save a bedroom for her. I tolerated her only because I was pregnant and need extra hands to help. At the most hopeless moment, it was my parents who helped us to find the candidate houses and lent us money to buy the house. Now my mother is sick and will stay in the hospital for half of a month, I invited my father to stay with us so that he wouldn't be alone. My mother-in-law gave me a bad face. My husband wanted to open a bottle of XO to let my father taste it. She said she and my father-in-law can't drink and didn't let my husband drink either. Said for the sake of his heath! She used her loud voice of rural women to repeat the words so many times! I was so impatient with her and she said these words in front of my father. I said, OK, OK, got it. She became even madder and stared at me and said, you don't like what I said? I was like, XXXX, really want to get her out of my house. I never asked her to make dinner for us when my father

was here. I basically just ordered delivery. Who does she think she is! She told my father that she looked after my son all day long, from 6 am to 11 pm. Liar! (Emoji: Angry)"

The anger of the wife is obvious. "Who does she think she is" is probably the words the narrator wanted to say for a long time. The parents of the husband were not even the investors of the new family but they stayed with the couple. The mother-in-law tried to uphold her authority in the family, but unlike the "main bedroom" story, her daughter-in-law did not try to hide her discontent with her. Even so, it is noteworthy that the narrator did not view her parents as family members of their home, even when they were the ones who helped them purchased their *hunfang*.

This following post summarizes the boundary of a nuclear family:

"My goal is to fight with my future husband and buy our house together! So that when my parents come to visit and stay with us, they won't be treated as a guest!"

Summary of the emotion toward the power in the new family: Anger

For the women in her marriage, regardless of the living arrangement and actual investors, if a house is purchased as a *hunfang*, then the master and lady of the house is the young couple and young couple only. But this view is very often not shared by the parents of her husband, especially when they are the actual investors of the *hunfang*, which is then the consequence of the norm in marriage preparation stating that the man should provide the house. At best the parents of the husband take them all as the members of the family, or in some cases still insist that they are the masters of the family. The women feel angry as they trespass the boundary of the new family and have deprived the last place that they dreamed they could control.

Conclusions

This chapter investigated the words and emotions social media users expressed about the relationship between housing price and marriage, and the consequences of increased housing costs on partner selection of urban Chinese. I found that when the barrier or cost of family formation increased, the emotional support one can receive from family is compromised: the trust between a groom and a bride, the understandings from the natal family, and the well-being in the extended family of a married couple are all impacted as a consequence of a more expensive family formation. A single woman who is in a dilemma between staying in her original family and stepping into a marriage: it is not enjoyable for her to keep her single too long when faced with the push from her parents who value the norm of get-married-on-time highly and the less-than-satisfactory living standard when she affords an independent living space, nor does she embrace marriage whole-heartedly as she has not yet found her ideal groom or she does not desire a marriage.

From the qualitative analysis we found that despite the increased housing prices in today's China, the house is still a widely expected or even assumed item in the list of marriage preparation, which is termed as *hunfang*. Usually, men are expected to pay a larger sum in buying the *hunfang*. It is not only viewed as a physical foundation of a new family but also related to the sincerity of the groom and the right and honor of the bride. Such finding supports the identity theory of marriage we discussed in the previous chapter of the quantitative investigation on house affordability and partner selection. However, even though there is an agreement in the preparation of the house for the new family and an expectation on who should pay for it, there are still different opinions on how to actually implement it. The disagreement usually happens between the groom-side and bride-side in a negotiation on the marriage

preparation and could develop into accusations between the two sides. The women accused the men of being a fraud if he failed to provide a house, while the men accused the women to be unrealistic, material and greedy. Both sides believe their opinion is justifiable, although perhaps neither of them truly enjoy the negotiation.

When a house is still more or less a must for marriage but the young men and women in urban China can barely afford a house only by themselves, the influence from their more financially capable parents finds its easy way into their children's marital decision. One finding is the pressure felt by the singles from their parents who push them entering marriage "on-time", especially for single women. The topic of finding someone to marry could trigger a fight between the children and their parents, which turns family from a place of support to a place of pressure.

A single woman is in the dilemma between get-married-on-time and "wait for a better man", meanwhile they are anxious as they are "getting old". If a single woman has rigid conditions for the suitors to qualify (for instance, a man should have a house), she becomes "old" quicker. The singles who need more from a marriage happen to be those who have few things other than youth to offer in the marriage market, and thus they cannot afford to stay in the market too long and prone to choose get-married-on-time. In the end, those who need more from marriage is ironically the least possible one to get them all.

We did find a new trend in the purchase of *hunfang*. It has become more popular for the parents of girls to purchase a house for their single daughter to release the girls from the constraint in partner selection as they now do not need to narrow down their search for a man with a house. But this finding does not contradict to the pattern we found above but provides further evidence to show how women who have fewer supports from their natal family

(e.g. women from a lower-income family, non-local women in big cities) are affected the most in their partner selection in the context of decreased house affordability.

Appendix: Hukou and Marriage in Urban China: What Do They Think?

Real Residents in Chinese Megacities

In order to be considered as a real resident instead of merely someone who is seeking a better life in Chinese megacities, for instance, the Capital Beijing, or the economically most developed city Shanghai, one needs to have both the local *hukou* and a house. Although for young men and women, the criteria may be less restrict that a house is not always on the list given it is rather difficult to become homeowners in these cities,*hukou* is usually a must regardless of one's income level, occupation, or age. However, more than often, the discrimination based on local *hukou* itself is one of the factors that hinders many well-educated young men and women from staying in these tier-1 cities:

"It is very difficult for those who don't have Beijing hukou to stay in 'didu' (literally, the capital of the empire, a nickname of Beijing). Unless for those very elite few who have doctorate degrees, most of the job openings prioritize applicants with local hukou. Some schoolmates graduated last year with us but haven't got their Beijing hukou done. I once thought I was the worst since I should have graduated two years earlier and housing prices in Beijing doubled in these two years. But now I think I am lucky, at least I got a job and the hukou. If I need another two years to graduate, then I definitely have no other choice but just go home."

The *hukou* and the house are two intertwined barriers for the well-educated migrants to stay. New graduates need to have the local *hukou* to be considered as competitive applicants in hiring. Those without local *hukou* have far fewer options and should better target their job

hunting to the few state-owned enterprises (SOEs) as only the employment in SOEs can increase their chances to secure local *hukou*. Without a local *hukou* in these megacities, one is not even permitted to purchase the local house and a car with local registrations (a car without local registrations is typically not allowed to drive on street in Beijing and Shanghai), according to the policies.

Hence, the reasons to have such a standard of real residents in tier-1 cities are obvious. Both *hukou* and house are fundamental material preparation for a future family, especially a family in which the children could grow up with secured access to quality education and respects. As this post suggests,

"From time to time, I just can't figure out why I would need a Beijing hukou. At first, I thought I would stay in Beijing, so I better get one which just made me feel safe. But other people need hukou as they need to buy houses or have children, why would I need that anyway? I don't have money to buy a house, I won't have children."

Criteria of A Competitive Pursuer: Real City Residents

It is thus no wonder why the standard of a competitive pursuer in tier-1 cities always includes not only the house but also the *hukou*, which is even more important than the house.

Ideally, the pursuer should be born and raised in the local cities, which is called "tuzhu" (literally, tribal men). Two local born-and-raised getting together is believed to be the most compelling and prospective match that they are able to form a superior family which could many games at the starting line. The combination of resources of two local families in megacities is of significant values:

"Look at the current housing price in Beijing, a marriage between two 'tuzhu' is like two listed companies merging; Non-locals marrying to local is like back-door listing. Marrying your local friends is a real bargain. They have hukou, houses in the communities with a high-quality education, and sorts of things. Everything are an intangible dowry for this marriage. Although the locals also have their annoyance, if they fell for a non-local that have no houses, their parents probably will never say yes to their marriage."

However, a perfect match between two *"tuzhu"* (literally "tribal men", nickname of local Bejinger) of privileged economic and social status is not always easy. A less than ideal but still acceptable deal often involves evaluation of the *hukou* status of the pursuers. Local *hukou* of tier-1 cities has a considerable value in the marriage market which can even compensate some of the disadvantages in the financial capability of a local and make the person a reasonable candidate in the partner selection, particularly when the factor of exchange (e.g. exchange with beauty) dominates the deal:

"The union of two strong persons may produce conflicts, the union of strong and weak leads to inequality. So in the end, the most often cases are unions between two weak persons. Equally poor, no one can contempt the other. So my idea is getting married when you are young and poor: you have your family supports you, I have a young and healthy body; you are beautiful, I have Shanghai hukou. What a good match!"

An even radical strategy of partner selection is to set up a club of singles that excludes anyone who does not have local *hukou*, who do not even worthy of consideration, as this advertisement implies:

"This week's theme party: Meeting Beijing Singles. In cities like Beijing, no matter now or in the past, no matter men or women, if you have Beijing hukou, it is definitely a plus (a huge plus!) (in finding partners). If you are Beijing locals or you have Beijing hukou, come and join us!"

A joke about the rank of pursers in the marriage market summarizes the criteria of partner selection in Chinese megacities, the least favorable group being those with neither the house nor the *hukou*: "Single men are ranked as six levels: Level one are those who have houses in the centra areas and monthly income more than 50,000 yuan, usually with oversea education background and a doctoral degree, or the 'most worthy'. The bottom ones are those who have neither house nor local *hukou*, simply 'not worthy'."

Figures and Tables

Figure 4.1. Heat map showing the geo pattern of keywords co-occurrence

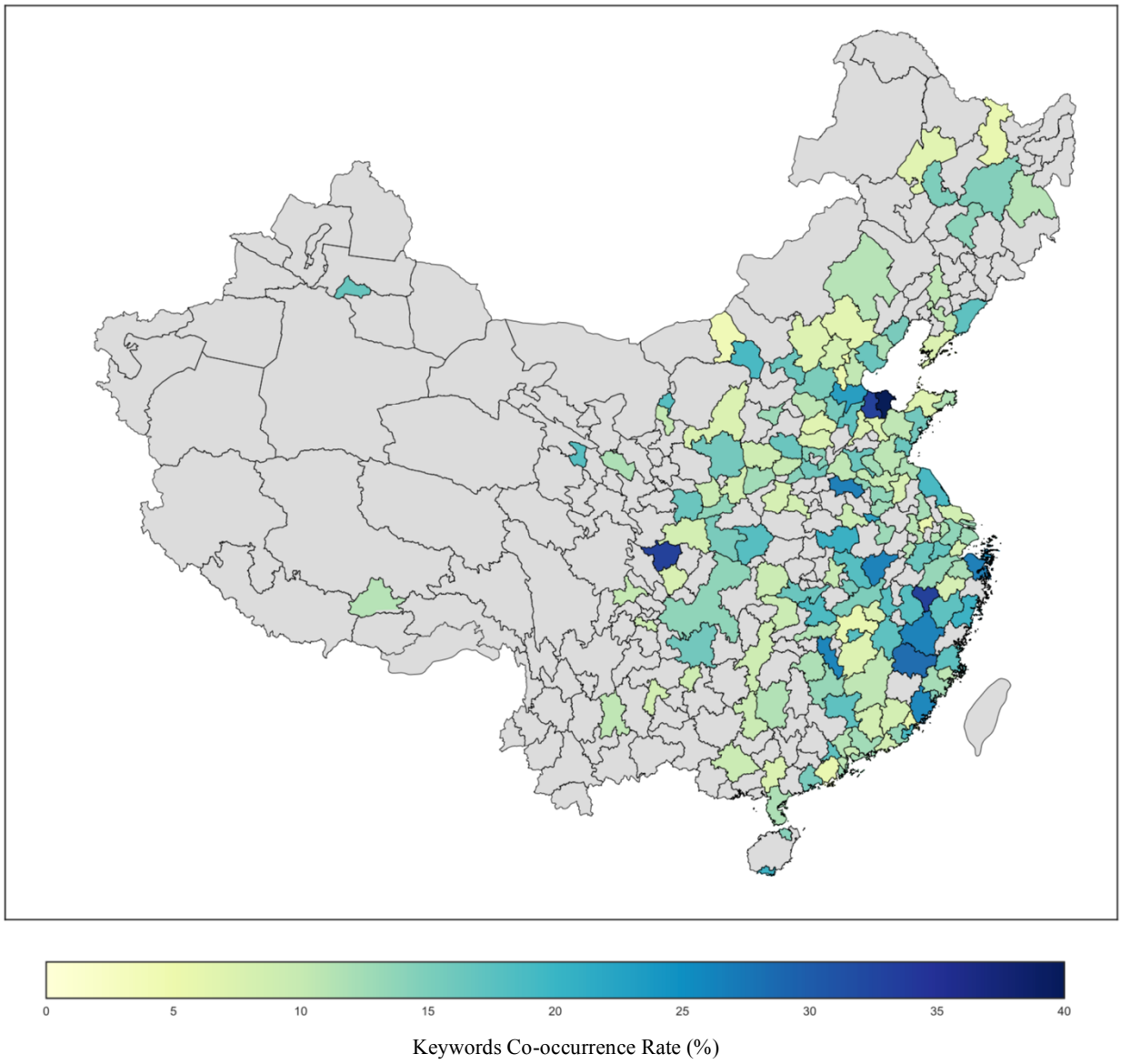


Figure 4.2. Distribution of Top 10 Identified Topics from Topic Modeling

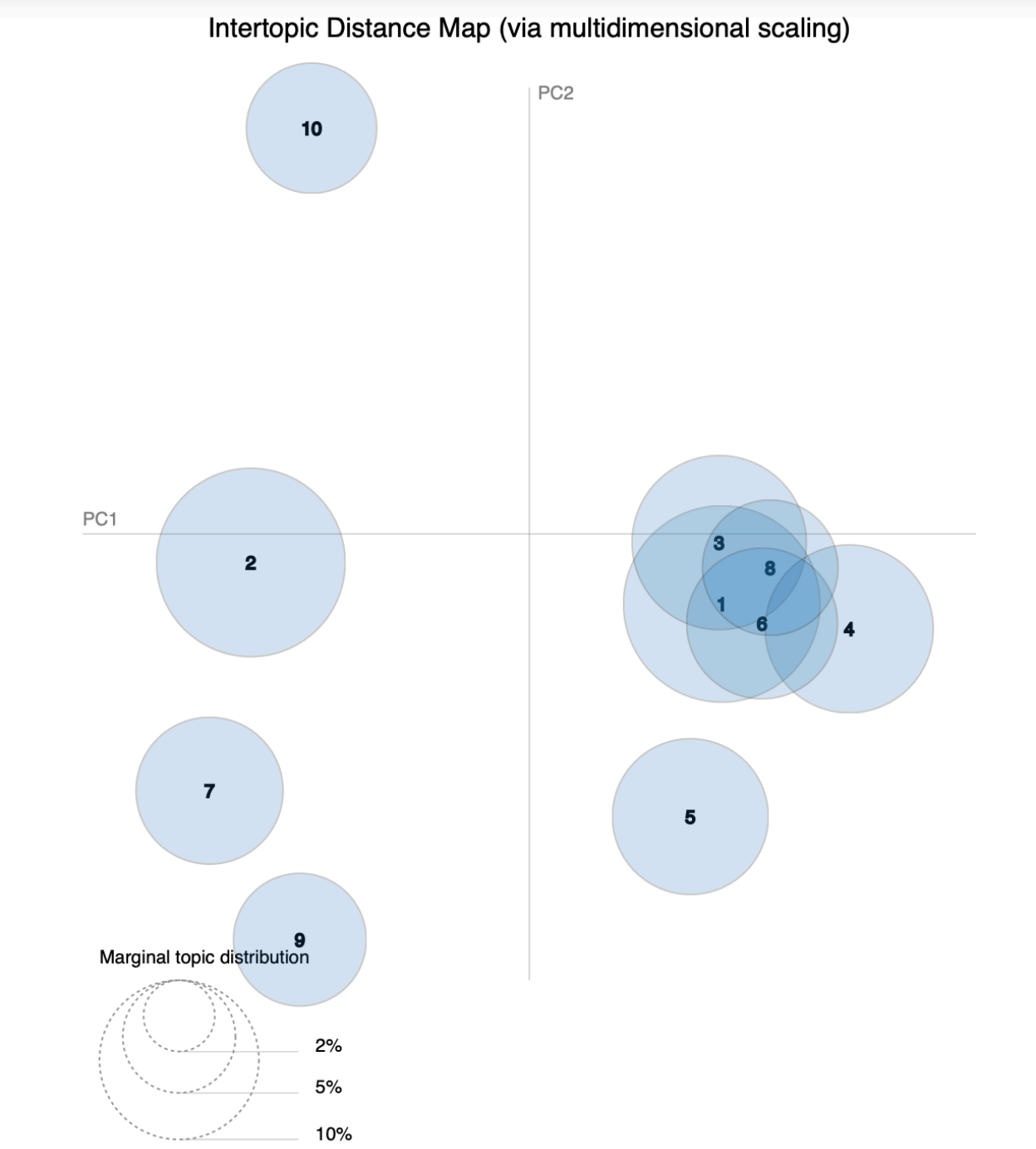


Figure 4.3. Word Cloud Generated From 88,892 Posts Collected

Table 4.1. Keywords Used in Weibo Post Search

Category	Chinese	*Pinyin*	English Translation
Partner Selection			
	结婚	*jiehun*	Getting married
	单身	*danshen*	Being single
	婚姻	*hunyin*	Marriage
	找对象	*zhaoduixiang*	Finding partner
	相亲	*xiangqin*	Arranged dating
Housing Price			
	房价	*fangjia*	Housing price
	房子	*fangzi*	House (apartment)
	买房	*maifang*	Buying house
	租房	*zufang*	Renting house
	限购	*xiangou*	Restriction on house purchase
Partner Selection and Housing Price			
	女方+买房	*nvfang+maifang*	The woman (in a relationship) + Buying house
	女方+有房	*nvfang+youfang*	The woman (in a relationship) + Has a house
	女方+没房	*nvfang+youfang*	The woman (in a relationship) + Has no house
	男方+买房	*nanfang+maifang*	The man (in a relationship) + Buying house
	男方+有房	*nanfang+youfang*	The man (in a relationship) + Has a house
	男方+没房	*nanfang+meifang*	The man (in a relationship) + Has no house

Table 4.2. Summary of Post Sets

Name	Collection Procedure	All posts contain keywords?	Range of posting time	*N*
post set (a)	from a daily keyword search on all newly created *Weibo* posts	yes	June, 2017 – Feb, 2018	86,266
post set (b)	all the posts of 100,000 *Weibo* users	no	September, 2009 – Feb, 2018	1,198,881
post set (c)	filtered *posts set (b)* by keywords	yes	September, 2009 – Feb, 2018	2,627
post set (d)	combined *posts set (a) and set (c)*, keep one post per user	yes	September, 2009 – Feb, 2018	88,892
post set (e)	randomly sampled from *set (d)*	yes	September, 2009 – Feb, 2018	1,000

Table 4.3 Most Relevant Terms of the Top 10 Identified Topics from Topic Modeling

Topic	Top 15 Most Relevant Terms (English Translation)	Top 15 Most Relevant Terms (Original Chinese Text)
1	daily life, getting married, kids, job, two (persons), parents, issue, family, stuff, son, gal, boyfriend, mom, graduate, classmate	生活, 结婚, 孩子, 工作, 两个, 父母, 事情, 家庭, 东西, 儿子, 女生, 男朋友, 妈妈, 毕业, 同学
2	housing price, cities, Beijing, China, house, buy a house, Shanghai, restriction in house purchase, rising, real estate, economy, Shenzhen, one suit, market, house market	房价, 城市, 北京, 中国, 房子, 买房, 上海, 限购, 上涨, 房地产, 经济, 深圳, 一套, 市场, 楼市
3	marriage, romance, men, women, getting married, divorce, boyfriend/girlfriend, fall in love, happy, hahaha, everyday life, break-up, movie, reason	婚姻 爱情 男人 女人 结婚 离婚 对象 恋爱 幸福 哈哈哈 日子 老婆 分手 电影 原因
4	getting married, like, around (me), happy, discover, place, give birth, wish, one year, joyful, I want, age, hope, story, feeling	结婚, 喜欢, 身边, 幸福, 发现, 地方, 生子, 祝福, 一年, 开心, 我要, 年纪, 希望, 故事, 感觉
5	don't want, getting married, husband, want, house, have a lot of money, no need, work hard, afraid, perhaps, like (verb), like so, teacher, think about, not working	不想, 结婚, 老公, 想要, 房子, 有钱, 不用, 努力, 害怕, 也许, 喜欢, 样子, 老师, 想想, 不行
6	single, time, wedding, choose, getting married, going home, friend, love, not good, happy, look at, jealous, participate, career, think of	单身, 时间, 婚礼, 选择, 结婚, 回家, 朋友, 感情, 不好, 快乐, 看着, 羡慕, 参加, 事业, 想起

Table 4.3. (cont.)

7	rent, value, fall in love, the women's side, the men's side, Sicong Wang, single apartment, age, accept, Dad, cellphone, community, a few days, share rent	租房, 价值, 谈恋爱, 女方, 男方, 王思聪, 单身公寓, 年龄, 接受, 爸爸, 手机, 小区, 几天, 合租
8	life, hope, well, getting married, single, tomorrow, eating, surely, own, freedom, more and more, next year, first, love each other, pain	人生, 希望, 好好, 结婚, 单身, 明天, 吃饭, 肯定, 拥有, 自由, 越来越, 明年, 第一, 相亲相爱, 痛苦
9	find a partner, house, somebody, the whole life, decoration and furnishing, suitable, world, parents, my mom, the first time, understand, beautiful, there is one, evening, a lot	找对象, 房子, 有人, 一辈子, 装修, 适合, 世界, 爸妈, 我妈, 第一次, 明白, 漂亮, 有个, 晚上, 好多
10	xiangqin (Arranged Dating), buy a house, tell, come back, buy a house (similar word), no money, yesterday, introduce, life, buy a car, tv show, netizen, care about, husband, became	相亲, 买房, 告诉, 回来, 买房子, 没钱, 昨天, 介绍, 生命, 买车, 节目, 网友, 关心, 丈夫, 变得

Table 4.4. Most similar words to selected keywords suggested by Word2Vec Models

Keyword	Most similar words (English Translation)	Most similar word (Original Chinese Text)	Cosine Similarity
Getting married (jiehun)	come out of the closet	出柜	0.60
	sign (the marriage certificate)	扯证	0.60
	finished the wedding	完婚	0.59
	just get married	就结	0.59
	have a second baby	生二胎	0.58
	baby	娃儿	0.58
	breakdown (of negotiation)	谈崩	0.58
	marry to (someone)	嫁人	0.58
	change name	改名	0.58
	want to give birth to	想生	0.58
Housing price (fangjia)	housing price[a]	楼价	0.67
	price of commodities	物价	0.65
	house market	房市	0.64
	drastically increased	暴涨	0.63
	land price	地价	0.63
	rising	上涨	0.63
	not rising	不涨	0.63
	break the 10,000 (yuan per square meters) line	破万	0.62
	adjust (the housing price) back to	回调	0.62
	rise and fall	涨跌	0.62
Buy a house (maifang)	buy a car	买车	0.66
	buy a house[a]	买楼	0.58
	buy a house[a]	买房子	0.57
	add a name (to the property certificate)	加名	0.56
	down payment	首付	0.55
	pay in total	全款	0.55

Table 4.4. (cont.)

	pay back the loan	还贷	0.54
	gather together	扎堆	0.54
	raise a kid	养娃	0.53
House for marriage (hunfang)	only daughter	独生女	0.73
	alone	单独	0.70
	invest together	合资	0.64
	invest	出资	0.62
	personal asset	个人财产	0.61
	notarization	公证	0.60
	under one's name	名下	0.60

a. Shares the same English translation.

References

Berg, B. L. (n.d.). *Qualitative Research Methods for the Social Sciences*. Boston, MA: Allyn; Bacon.

Blei, D. M., Ng, A. Y., & Jordan, M. I. (2003). Latent dirichlet allocation. *Journal of Machine Learning Research*, *3*, 993–1022.

Börsch-Supan, A. (1986). Household formation, housing prices, and public policy impacts. *Journal of Public Economics*, *30*, 145–164.

Brett, M. R. (2012). Topic modeling: a basic introduction. *Journal of Digital Humanities*, *2*, 2–1.

Chiang, S.-Y. (2018). The Narrative Construction of Fang-Nu: An Urban Identity in Post-Modern China. In *Dynamics of community formation* (pp. 119–133). Springer.

Clark, W. A. V. (2012). Do women delay family formation in expensive housing markets? *Demographic Research*, *27*, 1–24.

Fincher, L. H. (2016). *Leftover women: The resurgence of gender inequality in China*. Zed Books Ltd.

Gholipour, H. F., & Farzanegan, M. R. (2015). Marriage crisis and housing costs: Empirical evidence from provinces of Iran. *Journal of Policy Modeling*, *37*, 107–123.

Golder, S. A., & Macy, M. W. (2014). Digital footprints: Opportunities and challenges for online social research. *Annual Review of Sociology*, *40*.

Google Code Archive. (2013). *Word2Vec*. Retrieved from https://code.google.com/archive/p/word2vec/

Haurin, D. R., Hendershott, P. H., & Kim, D. (1993). The Impact of Real Rents and Wages on Household Formation. *The Review of Economics and Statistics*, *75*, 284–293.

Hughes, M. E. (2003). Home Economics: Metropolitan Labor and Housing Markets and Domestic Arrangements in Young Adulthood. *Social Forces*, *81*, 1399–1429.

Hui, E. C., Zheng, X., & Hu, J. (2012). Housing price, elderly dependency and fertility behaviour. *Habitat International*, *36*, 304–311.

Lauster, N. T. (2006). A room of one's own or room enough for two? Access to housing and new household formation in Sweden, 1968-1992. *Population Research and Policy Review*, *25*, 329–351.

Li, P., & Song, S. (2016). What pushes up Chinas Urban housing price so high? *Chinese Economy*, *49*, 128–141.

Lin, P. S., Chang, C. O., & Sing, T. F. (2016). Do housing options affect child birth decisions? Evidence from Taiwan. *Urban Studies*, *53*, 3527–3546.

Lindbeck, A. (1997). Incentives and social norms in household behavior. *The American Economic Review*, *87*, 370–377.

Martins, N., & Villanueva, E. (2009). Does high cost of mortgage debt explain why young adults live with their parents? *Journal of the European Economic Association*, *7*, 974–1010.

Martínez-Granado, M., & Ruiz-Castillo, J. (2002). The decisions of Spanish youth: A cross-section study. *Journal of Population Economics*, *15*, 305–330.

McIntyre, L. J. (2014). The practical skeptic: Core concepts in sociology. In *The practical skeptic: Core concepts in sociology* (pp. 104–105). McGraw-Hill.

Mulder, C. H., & Billari, F. C. (2010). Homeownership regimes and low fertility. *Housing Studies*, *25*, 527–541.

Posner. (2012). *Very basic strategies for interpreting results from the Topic Modeling Tool*. Retrieved from http://miriamposner.com/blog/very-basic-strategies-for-interpreting-results-from-the-topic-modeling-tool/

Sina Data Center. (2016). *Annual report of development of Sina Weibo users*. Retrieved from http://data.weibo.com/report/reportDetail?id=346

Strauss, A. L. (1987). *Qualitative Analysis for Social Scientist*. New York, NY: Cambridge University Press.

Yu, J., & Xie, Y. (2013). Social change and trends in determinants of entry to first marriage (She hui bian qian yu chu hun ying xiang yin su de bian hua). *Sociological Research (She Hui Xue Yan Jiu)*, *1406*.

Zhang, C., An, G., & Yu, X. (2012). What Drives China's House Prices: Marriage or Money? *China and World Economy*, *20*, 19–36.

Zhou, F. (2015). *A huge burden for men seeking marriage*. Beijing.

Zhu, J. (2000). The Changing Mode of Housing Provision in Transitional China. *Urban Affairs Review*, *35*.

CHAPTER 5: CONCLUSIONS

In this concluding chapter, I discuss the main themes and patterns discovered in the previous empirical chapters, relate them to the overall framework and the general research questions, and discuss their implications for the marriage and partner selection in China.

Power in Partner Selection in Post-Reform China: Loss and Gain

In order to answer the research questions arises with "the shift from hierarchies to market in a socialist economy"(Nee, 1989), specifically the question of how individuals embedded in a society of strong state influence respond to new opportunities, incentives, and constraints that seemly emphasizes individualism and the question of who gained and who lost power in partner selection since the Reform, I investigated the heterogamy of urban Chinese after 1978 guided by the social exchange theory. The findings from Chapter 2 and 3 suggest that dynamics of power and privileges in the marriage market shifted along with the shift of access to the economic and social resources, which, after 1978, were mainly determined by the coupling of market and state. Individuals who detached from their local communities of origin utilized "personal assets" such as beauty or educational attainment via marriage to seek social mobility in response to new opportunities and constraints brought by the introduction of the market.

As economic and social resources are more abundant in urban China particularly after the Reform, who could provide access to these resources concentrated in cities are those who gained power in the marriage market. This is particularly true when a large scale of rural-to-urban migration became possible and highly demanded in post-Reform China. The large scale of the rural population has migrated to Chinese cities as a labor force to satisfy the demands in the urban labor market whereas their full residentships as persons living in the cities are still

restricted by state regulation (i.e.the *hukou* system). Male locals with urban *hukou* become attractive suitors to female migrants originated from the rural area, even when the husband and wife do not match in their age or educational attainment.

Girls were accused to have become more "material" than their previous generations, which reflects the new reality that money now can buy much more things as there is a real market. Those who gained the most power in partner selection are the property owners and people of greater economic capability. In contrast, the cadres in SOE or *danwei* who once have direct control of many resources experienced a relative loss of power.

Tasks, Meanings, and Standard of Marriage: Understanding Partner Selection in post-Reform China

The market generated new incentives and opportunities structures and set new tasks and hence new meanings to individual behaviors. Greater social mobility and financial security became the most concerned aspects of people's partner selection.

Tasks and Meanings of Marriage: Social Mobility and Economic Security

Two underlying forces, state regulation, and market impact influenced the marital decisions of contemporary Chinese. In Chapters 2 and 3, I studied the marriage of Chinese, specifically the pattern of age and educational differences between husband and wife of the Chinese married population, under the influences from state and market, respectively.

The Chinese *hukou* system, as a state-imposed policy, stops neither the temporary migration, nor the permanent migration from the countryside to the cities, but it does affect or alter the calculus of migration in terms of gain and loss, and the calculus of marriage of rural female migrants, as the study in Chapter 2 suggests. For under half a century, *hukou* conversion

has been an important means of social mobility for rural-to-urban migrants because it grants migrants' access to a large set of social welfare benefits previously enjoyed by urban citizens only. Obtaining urban *hukou* status allows rural migrants to finish the final formal step of rural-to-urban migration and cross the most crucial institutional barrier to a better life. Previous studies show that the pathways to obtaining urban *hukou* status are gendered that rural men and women realized their *hukou* conversion through different channels (Xiang, 2015). I found that *hukou* status as a critical resource also affects partner selection in a gendered way. Going through the gendered pathways of *hukou* conversion, female rural-to-urban migrants paid the "price" of an urban *hukou* in their social exchange dealings by marrying less educated or much older men. Partner selection as an evaluation process may include both attribute matching and attribute trade-off. When rural women use marriage as a means of obtaining full residentship in urban areas, they gravitate toward attribute trade-off. Underprivileged rural women realize their social mobility with a price in their marriage.

The study in Chapter 3 on the relationship between age and the educational difference between a couple and the local housing prices at the marriage in the context of decreased house affordability since 2000 revealed another layer of the barriers to the marriage of urban Chinese. In contrast to *hukou*, housing prices impact the lives of urban residents universally though differently. A general pattern identified is that the higher the local housing price at marriage, the greater the age gap between a husband and a wife. But the impact of low house affordability on partner selection is more nuanced when one considers the unbalanced resources single women and men of different social status have in the marriage market.

Both the force of exchange and the force of matching play their roles in the partner selection of the local women who are born and raised in the cities where they got married. But

which one of the two forces prevails and how strong the effect of local housing prices on their partner selection depends on the homeownership of these local women before their marriage. My findings suggest that when local housing price was high, the houseless local women have stronger willing to marry an older man, who is more likely to have a greater financial capability and hence more likely to provide the future family a house. But local women who have no worries in the house tend to marry someone similar to them in terms of age and educational attainment regardless of the level of local housing price.

Homeownership is a critical resource in the marriage market, but female migrants and locals enjoy very different levels of this resource. Compared to their born-and-raised local counterparts, significantly fewer female migrants entered a marriage with a house ready for them. I found that the partner selection of female migrants was only sensitive to the absolute level of local housing price and the homeownership before marriage played an indistinguishable role. Despite local and migrant women entering marriage at almost the same age on average (around 24 years old), migrant women always marry an older man when the absolute level of local housing prices is high. For the female migrants who have the least resources in the marriage market, the force of exchange seems to be dominant in their partner selection.

The story of female migrants in terms of educational heterogamy, however, is different. Our findings suggest such a picture: when a migrant woman could find a husband with a house in the marriage market, she is willing to sacrifice a little bit to marry a man who is less educated than herself, especially when house affordability is low. But when a migrant woman who could not find a husband with a house in the market, she will stick to the preference of educational heterogamy and married to a man who is at least as educated as herself. When house affordability is low, she is even more unlikely to give up the preference since educational

attainment is an important proxy to (future) economic capability that is crucial to the future family.

The two tensions introduced by the social transformations happened in China since 1978 – (1) the tension between the increasing volume of migrants and the barrier of migration implemented by household registration system (the *hukou* system) and (2) the tension between the decreasing house affordability and the thus the increasing cost of marriage preparation – strengthen the preference or incentives to hypergamy. The function of marriage in realizing social mobility stood out when an individual's social mobility was obstructed by state policy. The function of marriage in alleviating the financial burden of women became obvious when the cost of family formation became unfordable.

Standard of Marriage and Norm in Marriage and Double Deprivations of Single Women

Chapters 2 and 3 investigated the pattern of age and educational differences between husband and wife under the influences of state regulation and economic growth, respectively, to answer the research questions of what new choices people made in partner selection after the Reform. Chapter 4 delved into the social norms of marriage to understand the culture and thoughts of the actors in the marriage market behind the pattern of partner selection that was uncovered in the two previous chapters. In Chapter 2 and 3, I found the association between state regulation or market trend and the pattern of age and educational differentials between husband and wife, in Chapter 4, I examined the forces that potentially shaped the behaviors of actors in the marriage market that lead to this association and emotional consequences on individual participants in the marriage market when there was a mismatch between social norm and the capability to act according to the norms.

I studied the words and emotions social media users expressed about the relationship between housing price and marriage, and the consequences of increased housing costs on partner selection of urban youth in Chinese. The standard and criteria of marriage and family union or formation remained relatively unchanged. House is still a widely expected item in the list of marriage preparation, and an ideal husband should pursuit his wife with a house.

However, even though there is an agreement in the preparation of the house for the new family and an expectation on who should pay for it, there are still different opinions on how to implement it. The disagreement usually happens between the groom-side and bride-side in a negotiation on the marriage preparation and could develop into accusations between the two sides. The women accused the men of being a fraud if he failed to provide a house, while the men accused the women to be unrealistic, material and greedy.

When the house is still more or less a must for marriage but the young men and women in urban China can barely afford a house only by themselves, the influence from their more financially capable parents also finds its easy way into their children's marital decision. Single women feel great pressure from their parents who push them entering marriage "on-time" and in the end, turns the family from a place of support to a place of stress.

When the barrier or cost of family formation increased, the emotional support one can receive from family is also compromised: the trust between a groom and a bride, the understandings from the natal family, and the well-being in the extended family of a married couple are all impacted as a consequence of a more expensive family formation.

A single woman is in a dilemma between staying in her original family and stepping into a marriage: it is not enjoyable for her to keep her single too long when faced with the push from

her parents who value the norm of get-married-on-time highly and the less-than-satisfactory living standard when she can afford an independent living space, nor does she embrace marriage whole-heartedly as she has not yet found her ideal groom or she does not desire a marriage. Women who have fewer supports from their natal family (e.g. women from a lower-income family, non-local women in big cities) are affected the most in their partner selection in the context of decreased house affordability. The singles who need more from a marriage happen to be those who have few things other than youth to offer in the marriage market, and thus they cannot afford to stay in the market too long and prone to choose get-married-on-time. In the end, those who need more from marriage is ironically the least possible one to get them all. They are deprived of the emotional support from their family when they have already been deprived of the financial independence defined by the capability to afford a living standard they desire.

Limitations and recommendations for further research

Although the empirical studies presented in this dissertation capture several understudied aspects of the marriage and partner selection in China, they only covered a small share of this significant topic.

First, the coverages of time and populations in this dissertation are inconsistent among chapters and potentially limited. The populations studied in Chapter 2, Chapter 3, and Chapter were different since the data in these chapters were collected from different sources, hence the conclusions drawn from the analyses in different chapters should be understood only as conceptually related.

Since 2012, various new policies were started to be introduced into the rigid *hukou* system, but the data used in Chapter 2 on *hukou* system did not include the period after 2010,

although Chen and Fan (2016) found moderate evidence that was aligned with the conclusions in Chapter 2.

The data on housing prices are only available from 1999 to 2014, which does not include the most recent period that witnesses the drastic increase in housing prices in many Chinese major cities. The effects of housing price on partner selection may not be fully discovered and analyzed in the study.

Second, the studies in this dissertation on the Chinese internal migrants are restricted to only some critical moments (e.g.*hukou* conversion, marriage) in the life course of these migrants due to data limitations and some of the determinations of the migration status of the respondents were based on extrapolation. For example, although CGSS survey used in Chapter 2 collected relatively comprehensive information on the *hukou* conversion history of the respondent, it did not ask questions about detailed migration history, thus failing to capture the full migration dynamics, such as multiple, repeated, and circular migration as well as the duration of each migratory trip, hence it limited a more strict examination on the causal relationship between *hukou* policy and partner selection.

The CFPS panel surveys in Chapter 3 tracked the respondents since 2010 and only documented a limited number of female and male migrants. The migration history of migrants before 2010 was not available in the datasets. I have to use retrospective determination to extrapolate the migration status of these respondents, which may potentially introduce a misclassification on migrants and locals.

Finally, the qualitative content analysis on the social media data in Chapter 5 revealed their emotions and thoughts on the norm of marriage and partner selection, but without in-depth

interviews or a digital ethnography with these users, an understanding of how these emotions and thoughts are developed and evolved will not be possible.

References

Chen, C., & Fan, C. C. (2016). China's Hukou Puzzle: Why Don't Rural Migrants Want Urban Hukou? *China Review*, *16*, 9–39.

Nee, V. (1989). A theory of market transition: From redistribution to markets in state socialism. *American Sociological Review*, *54*, 663–681.

Xiang, J. (2015). Gendered pathways to hukou status mobility in China. *Chinese Journal of Sociology*, *1*, 231–253.