Women and Work in Contemporary China

The Effect of Market Transition on Women's Employment, Earnings, and Status Attainment

Siyang Kong

Manuscript committee

Prof. dr. M. Lubbers (Utrecht University)

Prof. dr. ir. T. van der Lippe (Utrecht University)

Prof. dr. Y. Bian (University of Minnesota)

Prof. dr. H. Trappe (University of Rostock)

Prof. dr. D. J. Treiman (University of California, Los Angeles)

Women and work in contemporary China. The effect of market transition on women's employment, earnings, and status attainment.

– Siyang Kong

Cover design: Hui Huang

Printing: Ridderprint BV | www.ridderprint.nl

ISBN: 978-94-6416-632-3

Women and Work in Contemporary China

The Effect of Market Transition on Women's Employment, Earnings, and Status Attainment

Vrouwen en werk in hedendaags China

Het effect van de markttransitie op de werkgelegenheid, het inkomen en de statusverwerving van vrouwen
(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Utrecht op gezag van de rector magnificus, prof.dr. H.R.B.M. Kummeling, ingevolge het besluit van het college voor promoties in het openbaar te verdedigen op

vrijdag 9 juli 2021 des middags te 4.15 uur

door

Siyang Kong
geboren op 1 oktober 1991
te Changsha, China

Promotoren:
Prof. dr. M.H.D. van Leeuwen
Prof. dr. I. Maas

Dit proefschrift werd (mede) mogelijk gemaakt met financiële steun van de Chinese Scholarship Council (no. 201607720019).

Contents

List of Figures

List of Tables

SYNTHESIS

Chapter 1

Siyang Kong

This chapter has benefited greatly from discussions with Ineke Maas and Marco H.D. van Leeuwen.

1.1 Women and work in contemporary China[2]

Xiangqi was born in 1963, two years after the Great Famine, in a Chinese village. She lived in a rural house with her parents and her younger brother. From a young age, she shared household chores with her mother. Every day, she woke up before the sunrise, fed the pigs and the chicken, made breakfast, and prepared for school. Growing up, she remembers constantly being hungry and looking for things to eat. After primary school, she was accepted into a township-level secondary school and then a high school, where she was among the top students.

In 1980, three years after the restoration of China's higher education system, Xiangqi took the national college entrance exam. Only one student from her school passed the exam; she did not. Therefore, she started to work. As a high school graduate, she was assigned to a collectively owned department store in town working as a clerk. Ten years later, when she was 27, she got married, and one year later, her daughter was born. The department store provided Xiangqi and her family a small one-bedroom apartment. She took care of the child mostly by herself while working full-time, and it was challenging. Her husband was rarely home; he was busy riding his motorcycle from place to place, discussing business with other people. When her child was nine, the family purchased an apartment in the city. In 2001, they moved to the city and transferred her child to a better school there. Shortly thereafter, her husband and she discussed whether she should stop working. Xiangqi felt that her child needed care, that the department store was not well run, and that she would be laid off soon. She applied for early retirement with no compensation and stopped working. The department store disappeared a few years after they moved, as did the small one-bedroom apartment.

Xiangqi is my mother. Her life trajectory resembles what many Chinese women have experienced. Table 1.1 provides an overview of important historical events that have occurred in China. In 1949, the People's Republic of China was established. The era after the establishment of China can be divided into a period of high socialism and a period of reform. The period of high socialism was between 1949 and 1977, when all resources, such as land and labor, were organized and redistributed by the government. All Socialist countries, including China, interpreted women's emancipation in the same way, according to Marxism. Women's work outside of the household was thought to be essential to their liberation. Therefore, the state made great efforts to ensure gender equality in the public sphere in China. For example, policies on labor rights and "equal work, equal pay" were implemented, and gender equality propaganda was widespread. Infrastructures, such as public childcare facilities, were built to enable women to work full-time. Both men and women were assigned to jobs, and differences in wages and wealth among people were minimal. As a consequence, the labor force participation rate of women in China, as well

[2]Throughout this dissertation, China refers to People's Republic of China

Table 1.1: An overview of major events that happened in China, 1949-2018

The period of high socialism:	
1949	The Chinese Communist Party came to power; People's Republic of China was founded
1953-56	Collectivization campaign
1958	Great Leap Forward and People's Communes
1959-61	The Great Famine
1966-76	The "Cultural Revolution"
The period of reforms:	
1978	The announcement of reform policy; The start of land reform in rural China
1980	First "special economic zone" was established in Shenzhen, Guangdong. The start of marketization reform in one region of urban China. After the establishment of special economic zones in Shenzhen, similar reforms were gradually carried out in other regions.
1984	"Open doors" to foreign capital and foreign investment
1990	Decollectivization and reconstruction of state-owned enterprises (SOEs)
1992	Deng's tour to southern cities to foster a deep and wide reform in urban areas
1994	New labor law passed
2001	China joins the World Trade Organization (WTO)
2004	Slowing down of marketization reform in SOEs
2018	China celebrated the 40-year anniversary of the marketization reform

as in other socialist countries, was high.

Since 1978, a series of reform policies on marketization were implemented, which marked the start of market reform or market transition. Market rules were subsequently introduced to the central-planning economy, and many public-owned enterprises underwent downsizing and privatization. Simultaneously, state protection of women's employment was abolished. As a consequence, numerous employees of public-owned enterprises, such as my mother, were either laid off or opted out of the labor market. Along with these economic changes, Chinese society witnessed a re-emergence of patriarchal gender ideology. Women were expected to be the primary caretaker of the family. Similar to what my mother did, many married women withdrew from the labor market to fulfill their traditional gender role.

1.2 Research questions

The impacts of market transition on individuals have been widely discussed since the rash of market transition in (former) socialist countries in the late twentieth century. Much scholarship has been devoted to understanding the consequences of market transition on individual life chances, for example, the "who are the winners and who are the losers " market transition debate (Bian and Logan, 1996; Nee, 1989, 1991, 1996; Rona-Tas, 1994;

Rona-Tas and Guseva, 2001). The debate is around whether the transition from a central-planning socialist economy to a market economy causes efficiency and productivity to become more important than political affiliations for individual life chances. However, there has been more support for the power persistence argument, which claims that political resources are still key in a market economy.

Increasingly, scholars have highlighted how market transition affected women, especially women's paid work, in Eastern European societies and in China (for a review, see van der Lippe and van Dijk 2002, Entwisle and Henderson 2000). In China, the female labor force participation rate dropped substantially after the start of the reform (Wu and Zhou, 2015), and the gender earnings gap increased after the transition (He and Wu, 2018; Shu and Bian, 2003). Occupational segregation by gender also became evident (He and Wu, 2017). Scholars generally conclude that women are losing in terms of their economic situation due to the market transition.

However, the market transition is a multifaceted process that involves a direct change in the economic structure, as well as other intended and unintended socioeconomic changes, such as the re-emergence of traditional values. In general, women's employment and other labor market outcomes are influenced by both the economic and the cultural macro contexts (van der Lippe and van Dijk, 2002). Previous research on the market transition has primarily focused on the influence of economic changes on women's life chances, without considering the potential influence of cultural shifts. Moreover, previous research mainly used time-based cutoff points as proxies for market transition. The impacts of various transition processes, such as privatization, economic development, and massive internal migration, were not differentiated, and hence, it is difficult to conclude how the market transition affected women's labor market participation based on previous findings. Using time as a proxy for market transition is also problematic; although the market transition developed differently across different regions, most extant studies on market transition have ignored this heterogeneity. One exception is a study by He and Wu 2018, which relates changes in the gender earnings gap to the extent of market reform at the regional level.

In the general literature, women's employment and economic situation is related not only to macro developments, but also to household-level factors (Mincer, 1962; Mincer and Polachek, 1974; van der Lippe and van Dijk, 2002). For example, women's labor market participation is assumed to be related to the family's financial situation (Mincer, 1962). Previous research in China has found support for this notion (Wu and Zhou, 2015). During the market transition, changes in women's labor force participation rate were associated with changes in household wealth. How shifts in household characteristics mediate the impact of the market transition on women's economic situation is important for an in-depth understanding of the issue. For instance, market transition may increase household wealth (i.e., male earnings) and thus reduce women's incentive to participate in the labor force. Therefore, this dissertation aims to answer the two overarching research questions:

1) *To what extent do market transition processes affect women's economic situation in China*?

2) *To what extent do the influences of market transition processes work through changes in households*?

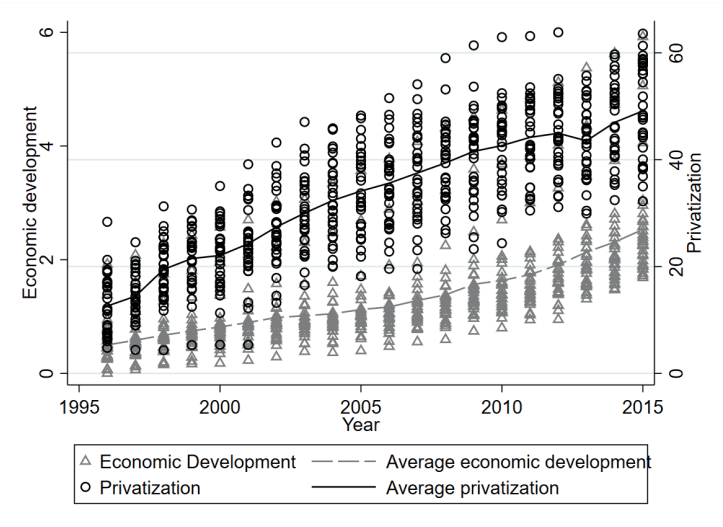
The four empirical chapters of this paper examine four aspects of women's economic situation: employment opportunity, time allocation to paid (and unpaid) work, hourly wages, and occupational status attainment. China serves as a valid case to study the underlying mechanisms of market transition on women's labor market participation. First, findings from China are likely generalizable to other transition countries. During the period of high socialism, the political and economic structures and economic reform policies in China were similar to those in other socialist countries, such as the Soviet Union. Second, although the processes of market transition in China resemble that of market transition in other (former) socialist countries to a large extent, there is one significant difference between China and those countries. China remained a socialist country after the start of the market reform, whereas other (former) socialist countries experienced a regime change along with the market transition. In China, the impacts of market transition on individual life chances are, therefore, not mixed with the influence of regime change, as is the case in other (former) socialist countries. In other words, in China, a "purer" market transition effect can be observed in comparison to other (former) socialist countries.

1.3 Theoretical background

Before giving a short overview of the theoretical background of the thesis, I first describe China's "market reform" or "market transition" in more detail. As shown in Table 1.1, in 1978, China started its economic transformation (*gaige kaifang*), first in rural areas, and in 1980, in urban areas. This economic transformation, often referred to as "market reform" (or marketization reform) aimed to transform China's central-planning economy into a market-oriented one, while maintaining a socialist political regime. "Market transition" (or marketization) describes the China's economic transformation from high socialism with a central-planning economy to socialism with Chinese characteristics and a market-oriented economy.

Market transition is a multifaceted process (He and Wu, 2017) that involves changes in property rights, or privatization. Prior to the market reform, all enterprises were publicly owned, and private ownership was prohibited. Since the start of the market reform, private ownership has developed rapidly, as have foreign- and hybrid-owned enterprises. China's economy has undergone massive growth since the start of the market reform, which can be attributed to large-scale (foreign) capital investment and the rapid growth of productivity. These two economic growth determinants are closely related to market reform policies. Economic development is thus another characteristic of China's market transition. Fig-

Figure 1.1: Economic development and privatization between 1996 and 2015



Note: 1. Observations of provinces are shown. 2. Source: author's own calculation using data from the Chinese National Bureau of Statistics

ure 1.1 presents the trends in *privatization* and *economic development* between 1996 and 2015. *Privatization* refers to the proportion of people who are employed in the private sector or self-employed. *Economic development* is measured by taking the mean of the GDP per capita, the share of added value of the tertiary sector in the GDP, average local wage, and the share of employment in the tertiary sector.[3]

Market transition in China is also characterized by a widened rural-urban discrepancy and a concomitant large-scale internal migration. Prior to the market reform, geographical movement within the country was largely restricted, especially migration from rural to urban areas, via a household registration system (*hukou* system). The system has two characteristics, i.e., the *hukou* type and the *hukou* location. Depending on one's parents' current *hukou*, they either have a rural (agricultural) hukou type or an urban (non-agricultural) one. The *hukou* location registers the place of origin. After the reform, the legal restriction on geographical movement was abolished, and a large number of rural laborers thus migrated to cities for better earning opportunities. The number of internal migrants in China increased from 6.57 million in 1982 to 21.35 million in 1990. Between 1990 and 2010, the number of internal migrants increased dramatically, with an average annual growth of approximately 12%. From 2010 to 2015, the growth in the number of internal migrants slowed, with an annual growth rate of 2%, and the number of internal migrants has decreased since then. In 2015, the number of internal migrants decreased by 6 million (i.e.,

[3]In *chapter 2*, the trend in *privatization* and *economic development* by province is shown (Figure 2.1).

to 247 million) compared to 2014 (Migrant Population Service Center, 2018). Although the legal restriction on migration based on the hukou system was abolished, internal migrants continue to face many obstacles. For example, internal migrants do not have access to the local welfare system due to their hukou status, and their children cannot attend local public schools (Wu, 2019).

The re-emergence of traditional gender values is another characteristic of China's market transition. State socialism featured policies that reinforced gender equality in the public sphere (Honig, 2000, 2015; Honig and Hershatter, 1988), which mobilized women to participate in the labor force. However, in the private sphere, traditional Confucian patriarchal values still played a primary role, for instance, in the division of domestic labor (Ji et al., 2017). After the start of the market reform, state policies on protecting women's rights in the public sphere were abolished. The long-standing influence of traditional Confucian values resurfaced, limiting women's decisions and life chances in the public sphere (Ji et al., 2017).

The following sections present the theories on which this dissertation draws, including labor economics and sociology theories. These theories describe how various aspects of the market transition affect men's and women's economic positions. It begins with a discussion on macro-level theories, followed by meso-level theories. The last section presents and discusses a conceptual model.

1.3.1 Market transition theory

A classic theory on how market reform may influence individual life chances is the market transition theory. This theory consists of three closely related theses in which the processes of market transition and related societal changes are described: the market power thesis, the market incentive thesis, and the market opportunity thesis (Nee, 1989, 1996).

The market power thesis argues that with the transition to a market economy, power—defined by control over resources—was located less in redistributive fiats and more according to market competition. The prices of labor and goods were agreed upon in an interaction between buyer and seller instead of by administrative fiat. Therefore, market transition entailed a transfer of power from favoring redistributors to favoring "direct producers," meaning that redistributors with political capital likely experienced a decline in their privileges. The market incentive thesis claims that the shift to a market economy gave individuals a stronger incentive to improve their productivity, as their efforts would be better rewarded in a market economy than in a redistributive economy. The market opportunity thesis argues that the transition to a market economy created an alternative mobility channel in terms of wealth and social status outside the redistributive sector, namely in the market sector. Together, the three theses constitute the market transition theory, depicting market transition as a transformation process involving changes in power, incentives, and opportunity

structure.

The market transition theory sparked a heated debate in the late twentieth century. Alternative theories emphasize the persistence of political power (Bian and Logan, 1996) or how political power can be converted into advantages in the market economy (Rona-Tas, 1994). Numerous studies have engaged in the market transition debate and examined changes in income or wealth inequality among men (Bian and Logan, 1996; Gerber and Hout, 1998, 2004; Verhoeven et al., 2005). In China, empirical evidence has found more support for alternative explanations than for the market transition theory (for reviews, see Wu 2019).

Previous studies have also examined changes in Chinese women's economic situation with the market transition. In general, women's economic situation has deteriorated since the start of the market reform. For example, women's labor force participation rate dropped from approximately 90% in the 1990s to 60% in 2000 (Wu and Zhou, 2015). The gender earnings gap enlarged (Shu and Bian, 2002, 2003) and occupational gender segregation increased after the start of the market reform (He and Wu, 2017). The reason why women's economic position has deteriorated with the market transition (while men seem to profit from it) and the extent to which market transition theory or its alternatives explain changes in women's economic position is still unknown.

1.3.2 Gender role theory

Gender norms and ideologies define the appropriate behaviors and roles for women and men; people often conform to such roles (West and Zimmerman, 1987). Women's economic behavior may be bounded by gender norms at the macro-level. In societies with traditional gender ideologies, (married) women prioritize their traditional gender role as caregivers within the family and may not be encouraged to achieve in the labor market. Gender roles are reinforced when children are born, and hence, the economic behavior of mothers is particularly affected by attitudes toward gender roles. Empirical evidence of this fact abounds in Western societies (Davis and Greenstein, 2009).

China has a long-standing history of Confucian patriarchal gender ideology (Ji et al., 2017), a cultural context in which is appropriate for women to take care of the family and for men to conduct paid work (Chen, 2004; Ji et al., 2017). Qualitative evidence has shown that even in socialist China, traditional gender norms played a crucial role in the division of household labor (Honig and Hershatter, 1988). In the public sphere, however, gender equality was promoted by the state. Men and women were equally encouraged to participate in labor activities, and the earnings gap by gender was restricted. With market reform, women's economic position in several newly-emerged market economies is found to be responsive to the re-emergence of traditional gender norms in Eastern European countries (van der Lippe and Fodor, 1998; van der Lippe and van Dijk, 2002). Few studies have

examined how changes in Chinese women's economic situation after the market reform may be associated with a resurfacing of Confucian patriarchal gender norms.

1.3.3 New economics theories

New home economics theory

The new home economics (NHE) theory (Becker, 1981) assumes that household tasks are divided in a way that household members devote time and energy to their specialized domain to maximize the joint household utility. It is generally assumed that in heterosexual households, husbands are more efficient in the labor market domain than wives because men usually earn more than women. Therefore, within the family, it is considered more efficient for the husband to devote his time and effort to paid work while the wife conducts unpaid household tasks. This theory partially aligns with the labor economics theory on the supply of female labor, which assumes that a women's decision to work is contingent on the family's financial situation (Mincer, 1962). In other words, women's paid work is often considered to be peripheral and additive to what the male family members earn.

The NHE theory has been applied to women's economic situation in China (Wu and Zhou, 2015; Zhang et al., 2008). For example, women from poorer families are more likely to join the labor force (Wu and Zhou, 2015). Increasing evidence has shown that women's employment and economic well-being are closely associated with family composition (Chen, 2004, 2005; Chen et al., 2011; Yu and Xie, 2018). The NHE theory mainly concerns the nuclear family, whereas various family living arrangements exist in China. According to Confucian ideology, a multigenerational household in which a married couple lives with the parents of the husband is an ideal form of family composition. The division of domestic labor is likely to differ between multigenerational families and nuclear families. On the one hand, wives can share household responsibility with other co-resident female family members and hence have more time and energy to devote to paid labor than other women (Chen, 2004). On the other hand, women may need to share more household tasks originating from co-resident elderly parents (i.e., in-laws), which may decrease their productivity or efficiency in the labor market. It is therefore important to incorporate family composition when using NHE theory to understand women's economic positions in China.

New economics of labor migration

Related to the NHE theory, new economics of labor migration (NELM) explains how changes in family composition resulting from the out-migration of family members affect women's economic position (Stark and Bloom, 1985). The fundamental assumption of this theory aligns with the NHE theory, in that the decision regarding the out-migration of

a household member is a household strategy to maximize the joint utility of all household members. The NELM pinpoints how out-migration influences the rest of the household via the lost-labor effect and the remittance effect.

The lost-labor effect is straightforward: out-migration reduces the number of laborers in a household. To compensate for this reduction of labor, the remaining members of the household increase their time investment in production activities. This argumentation has mainly been applied to the agricultural production process.

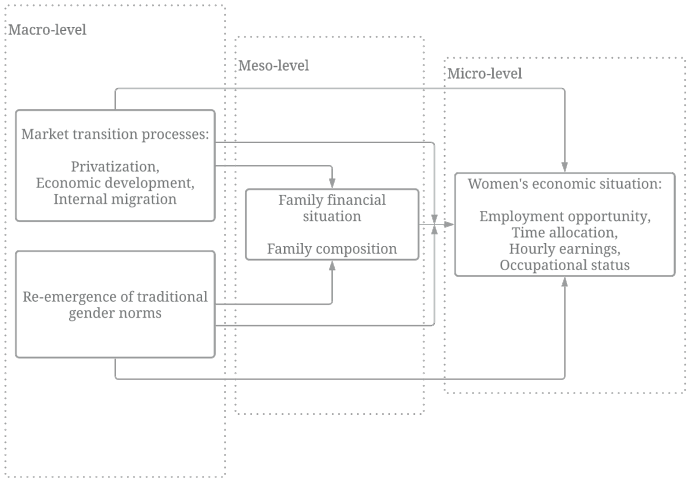
The remittance effect indicates the influence of a potential increase in household income contributed by migrants through remittances, which is assumed to have an opposite effect to the lost-labor impact. Migrants send back remittances to their "stay-behind" family members and these remittances may offset the lost-labor impact in various ways. Remittances may be used to improve the efficiency of agricultural production by enabling the purchase of better machinery, fertilizer, and pesticides (Stark, 1991; Taylor et al., 2003). Remittances can be used as an informal insurance so that households can conduct relatively risky but profitable economic activities other than farming, such as starting a small business (Stark, 1991). Therefore, the stay-behind household members do not necessarily need to spend more time on agricultural production when they can invest remittances to make farming more efficient or to move out of agriculture completely.

Several prior studies have examined the impact of lost labor or remittances on rural women's time allocation (Chang et al., 2011; Démurger and Li, 2013; Mu and van de Walle, 2011; Su et al., 2016; Xu, 2017), although the findings are inconclusive. Some found no impact of household members' out-migration on the left-behind women's time use (Su et al., 2016; Xu, 2017), while others discovered that living in a household with an out-migrant was associated with increased labor hours on the farm (Chang et al., 2011; Démurger and Li, 2013).

1.3.4 Conceptual model

Figure 1.2 presents a conceptual model depicting the paths by which market transition processes influence aspects of women's economic position. Drawing on both market transition theory and alternative explanations, we examine how market transition processes directly affect women's employment opportunity (Chapter 2) and socioeconomic status (Chapter 5). Chapter 2 further engages in the market transition debate by examining the pathways by which market transition exerts its influence, through changes in the importance of human capital, political capital, and family financial situation.

Figure 1.2: Conceptual model



Chapter 3 utilizes the new economics of labor migration theory to predict the impact of out-migration on left-behind women's time allocation. This chapter contributes to the understanding of the consequences of labor out-migration by examining the interplay between labor out-migration and family composition. Moreover, drawing on gender role theory, it examines the influence of the re-emergence of the traditional gender norms on women's response to labor out-migration and local economic opportunities.

In Chapter 4, the focus is on women who out-migrated. A new economic theory on household specialization is used to explain the influences of childbearing and childrearing on women's hourly earnings. To understand the underlying mechanisms of the influence of childrearing, this chapter investigates not only specialization within the family by examining the mediating role of family living arrangements, but also specialization outside the family at workplaces by investigating the influence of work arrangements.

1.4 Data

This dissertation utilizes several national survey datasets and supplementary contextual-level data to answer questions related to women and work in China. Table 1.2 provides an overview of the data and methods used in each empirical chapter. All datasets are publicly available and have been widely used by Chinese and other national researchers interested in social inequality, market transition, and gender issues in contemporary China (Wu and Zhou, 2015; Zhou and Xie, 2019). The richness of the information gathered in these surveys provides a prime opportunity to explore various aspects of women's economic position and the underlying mechanisms. The wide geographical coverage of all datasets allows

Table 1.2: Overview of data and methods used in each empirical chapter

Chapter	Data	Sample	Method(s)	Outcome variable
2	LHSCC	Men and women living in urban areas, aged 20-50	Multilevel linear probability models	Probability of employment
	CGSS Statistical yearbooks			
3	CHNS	Women living in rural areas (villages and towns), aged 16-6	Between-within model	Hours per week on labor activities
4	CMDS 2015	Internal migrant women, aged 16-50	Inverse probability of treatment weighting linear regressions Structural equation models	Hourly earnings
5	LHSCC	Men and women, aged 30-50	Path analysis in a structural equation framework	Socioeconomic status
	CGSS			

for the examination of subgroups based on the location of individual residence, which is important given the rural-urban divide in China.

Life Histories and Social Change in Contemporary China (LHSCC), the earliest national representative survey conducted in China, was a collaboration between researchers in the U.S. and China. It was initiated in 1994 by Donald J. Treiman and Ivan Szelenyi at UCLA, and Andrew Walder (then at Harvard and now at Stanford University). The survey was conducted in 1996 by a group of researchers in the department of sociology of Renmin University in Beijing (the same team also collected the Chinese General Social Survey [CGSS]) using a multistage stratified sampling design. One national probability sample was obtained from the rural population and one from the urban population, each comprising approximately 3000 adults, aged between 20 and 69. Details of the sampling design and its implementation can be found in the LHSCC codebook (Treiman, 1997). In total, 3087 urban residents and 3003 rural residents were surveyed via retrospective questions on respondents' education, work history, and family background.

Chinese General Social Survey (CGSS), launched in 2003, is the first national representative repeated cross-sectional survey in China. This project was initiated by Lulu Li in the department of sociology of Renmin University of China and Yanjie Bian (then at HKUST). Collaborating with researchers from the sociology departments of seven other academic institutions in China, researchers from Renmin University and HKUST conducted five sur-

veys in 2003, 2004, 2005, 2006, and 2008. Since 2010, the National Survey Research Center at Renmin University has conducted CGSS surveys in 2010, 2011, 2012, 2013, 2015, 2017, and 2018 (the 2018 data is not available yet). The targeted population of the CGSS is adults aged 18 and above. In total, approximately 10,000 individuals were examined in the 2003–2006 waves; 6,000 in the 2008 wave; and 12000 in the 2010–2015 waves. Every wave covers information on respondents' demographics, education, and family background and maintains a relatively consistent set of questions.

The China Health and Nutrition Survey (CHNS) is an ongoing panel survey that started in 1989. Subsequent waves were carried out in 1991, 1993, 1997, 2000, 2004, 2006, 2009, 2011, and 2015 in nine provinces: Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Shandong, Liaoning, and Heilongjiang. The sample selection in each province followed a multi-stage, random cluster process. Both rural and urban neighborhoods were selected. To obtain the rural sample, counties in the nine provinces were firstly stratified by income, and four counties in each province were subsequently selected using a weighted sampling scheme. Within the counties, villages and townships were randomly selected. The same households are followed as long as possible; households that out-migrate are not followed. The follow-up rate in each wave is approximately 80%. From 1997 onward, new households have been selected following the same procedure to replace households that dropped out.

The China Migrants Dynamic Survey (CMDS) is the first annually repeated cross-sectional survey project representative of the internal migrant population in China. The survey is initiated by the National Population and Family Planning Commission of China and conducted in migrant destination cities in 31 provinces. Since 2009, 200000 migrant households have been sampled in each wave. The CMDS contains rich information about migrants and their family members. In addition to information about individual demographic and socioeconomic characteristics, the survey includes detailed information about current migration characteristics, such as self-reported reason, duration, origin, and destination, which enables the identification of individuals who currently live (i.e., who have migrated) with the respondent.

The China Statistical Yearbook is an annual statistical report published by the Chinese National Bureau of Statistics that contains regional information at the provincial level (e.g., on local demographics, economy, education, cultural and social organizations). I collected several indicators that are available for all years from 1996 to 2015 in each province to measure two processes that occurred during the transition (i.e., privatization and economic development): the share of employment in the private sector, the GDP per capita, the share of tertiary sector added value in GDP, local average wage of employed persons, and the share of employment in the tertiary sector. The share of employment in the private sector was used to measure privatization, and the other variables are used to measure economic development.

1.5 Brief summaries of the empirical chapters

1.5.1 Gender disparity in employment in urban China (Chapter 2)

Since the start of the market transition, research has proliferated on changes in the rate of women's labor participation in (former) socialist countries, including China (Hare, 2016; Maurer-Fazio et al., 2011; van der Lippe and van Dijk, 2002; Wu and Zhou, 2015). Researchers generally conclude that women's working opportunity was harmed by the market reform. Yet, little is known about the gender gap in labor market entry in these countries or how it changed with the transition, since prior research focused on women's experience and implicitly assumed that men's working opportunity is unrelated to macro-level changes. Moreover, although prior research attributed the changes in women's working opportunity to market transition, few studies have measured the transition processes directly. Chapter 2 aims to fill these knowledge gaps by answering the following research questions:

1) *How did the gender gap in employment in urban China change with the market transition*?

2) *to what extent can this change be explained by the interplay between privatization, economic development, and (changes in) individual characteristics*?

Drawing on market transition theory, it is expected that with privatization and economic development, the gender gap in employment first increases and then decreases due to a growing importance of education followed by reduced gender inequality in educational attainment. At the same time, privatization may weaken the influence of political capital, which women lack, and hence, the gender gap in employment is expected to decrease with privatization. According to power persistence theory, however, the importance of political capital does not change with the transition. This indicates that gender gap in employment may remain the same with privatization.

This chapter found that first, over time, Chinese women did not have fewer working opportunities compared to Chinese men. In general, both men's and women's employment opportunity decreased at the beginning of the market transition, though women's employment suffered slightly more than men's in 2005 and 2006 specifically. The gender-labor gap generally persisted during the transition period.

The second finding is that the gender gap in employment persisted with privatization, as neither men's nor women's participation was related to the level of privatization. Contrary to what was expected, women did not leave the labor market with increasing economic development. In line with the findings of a recent study by He and Wu 2018, women profited from the economic development in terms of working opportunities. The market transition thus did not affect the gender-labor gap through privatization, although it did decrease the gender gap by creating jobs for women.

Regarding the interplay between macro-level changes and (changes in) individual characteristics, the Chinese labor market during the market transition was found to be characterized by stability, which aligns with previous findings (Shu and Bian, 2002). Although both men and women temporarily lost jobs, patterns of gender inequality, educational inequality, and inequality by political capital largely remained the same.

1.5.2 Women's time allocation in rural China (Chapter 3)

Uneven economic development between regions is widely observed in developing countries, including China after the start of the market reform. While both the rural and urban economy developed rapidly, the economic discrepancy between rural and urban regions widened. As a consequence, numerous rural laborers migrate to cities searching for off-farm earning opportunity. Much scholarship has concentrated on these internal rural-to-urban migrants, studying their earning opportunity, social integration, and well-being in their migration destinations (Fan, 2008). Rural women are often left behind by their husbands or other family members (Fan, 2008; Mu and van de Walle, 2011; Xu, 2017). The influence of family members' out-migration on women who stayed behind remains unclear. Chapter 3 contributes the literature by examining the following questions:

1) *To what extent did the out-migration of household member(s) influence the time that stay-behind women spent on farming, local wage earning, and self-employment*?

2) *How did out-migration and gender ideology at the regional level interplay with the effects of out-migration of a household member*?

According to the lost-labor hypothesis of labor migration theory, we expect that, compared to other rural women, rural women living in families with out-migrants spend more time on farming and less time on paid work or self-employment. However, it could also be the case that left-behind women increase their working hours on paid-labor and self-employment and reduce time allocated to the farm due to remittances sent by out-migrants. Out-migrants' labor activity prior to migration and household position are incorporated to further explain the impact of lost labor and remittances. Only when a male farmer out-migrated would left-behind women allocate more time to the farm. Only when a spouse or father out-migrated would left-behind women increase their time spent on paid-work and self-employment. Second, drawing on market transition theory, macro-level labor shortage resulting from labor out-migration would increase women's paid working opportunities. Lastly, women's time allocation is bounded by local gender norms. In more traditional regions, left-behind women would be more tied to (unpaid) family farms.

The out-migration of household members affects women's time allocation. The stay-behind women work more hours on local paid work when their out-migrant member was a farmer. When women are left behind by non-farmer members, however, they allocate time away from paid work to unpaid household tasks. The results suggest that, in farming fami-

lies, left-behind women do not have enough resources to leave the labor market completely, even with remittances. Instead, they improve their situation by increasing non-farm labor activities.

In places with a high level of out-migration, women with no out-migrant members benefit from the outflow of labor and move time away from farm work to off-farm paid work. The left-behind women in these places, on the contrary, are tied to family farms, probably due to the lost labor impact. In places with a more traditional gender ideology, the stay-behind women are restricted to farm labor as well, despite possible remittances sent home by migrants. Only in places with less traditional values does the impact of remittances seem to offset the impact of the loss of labor.

1.5.3 Motherhood earnings penalty among internal migrant women (Chapter 4)

Mothers tend to earn less than childless women. Previous research has often investigated populations with access to local welfare systems. Little is known regarding the potential motherhood penalty among Chinese migrant women for whom this is often not the case. Being a non-trivial part of the employed population, many internal migrants in China are disadvantaged due to institutional barriers at their destination (Fan, 2008; Wu and Treiman, 2007). Moreover, being away from their families, internal migrants often lack family support at their destination. As a result, work-family conflict is a particularly serious issue for migrant mothers since they often lack alternative caregivers when migrating with their children (Fan, 2008). Chapter 4 examines the differences in the hourly earnings of mothers and childless married women who migrated from rural to urban China. By doing so, this chapter attempts to answer the following research questions:

1) *To what extent do the hourly earnings of migrant non-mothers, mothers living without children, and mothers with children differ*?

2) *Do family living arrangements or work-schedule flexibility mediate migrant mothers' motherhood penalty of living with children*?

Based on NHE theory on household specialization, it is expected that, compared to migrant childless women, migrant mothers who do not co-reside with their children suffer a substantial loss in hourly earnings due to childbearing, and migrant mothers who co-reside with children suffer the most. This is indeed what this chapter found. The patterns of motherhood penalty remain when the factors of family living arrangements, work characteristics, and occupations are taken into consideration.

When facing childcare responsibility, mothers may opt for work-schedule flexibility or co-residing with parents or in-laws. This chapter investigates both options for internal migrant mothers. It is found that migrant mothers who live with children are more likely to co-reside with spouses and parents (i.e., in-laws), but such living arrangements do not

buffer their earnings disadvantages. This pattern is different from that found for urban residents in China, for whom multigenerational co-residence tends to reduce the motherhood penalty (Yu and Xie, 2018). The impact of work arrangements on alleviating motherhood penalty of living with children is complex. Migrant mothers with children are more likely to choose part-time work and self-employment, and such arrangements of work arrangements offer higher earnings. However, this result does not mean that part-time work and self-employment are better-off earning options for migrant mothers, but could be because we could only observe migrants who can afford the economic entry barrier of working part-time or running one's own business.

1.5.4 Status attainment and the influence of mothers' socioeconomic status (Chapter 5)

In Western societies, mothers' socioeconomic status (i.e., education and occupation) plays an important role in the status attainment process of children, along with that of the fathers (Beller, 2009; Hout, 2018). Little is known, however, about the influence of mothers on children's status attainment in (former) socialist societies. In socialist countries, women's labor force participation has traditionally been high, largely due to states' efforts to promote gender equality (Whyte and Parish, 1985). A tightened relationship between men's (and recently women's) family background and their status destination has been documented in many post-reform countries (Gerber and Hout, 2004; Jackson and Evans, 2017; Lippényi and Gerber, 2016), including China (for a review, see Bian 2002; Zhou and Xie 2019). However, most of these prior studies use the father's socioeconomic status to indicate family background, neglecting the mother's role. To fully understand whether or not state socialism and its central-planning economy facilitated equality of opportunity, as well as whether market reforms changed this opportunity structure, it is necessary to include mothers in the discussion. Chapter 5, therefore, contributes to the understanding of status attainment in socialist countries after market reforms by examining the following questions:

1) *To what extent did mothers' education and occupational status (on top of that of fathers) affect their sons' and daughters' status attainment in socialist China*?

2) *How did the influences of mothers' education and occupational status change during the market transition*?

Because socialist countries protected women's labor force participation and economic position (Whyte and Parish, 1985), it is conceivable that in socialist China, the influences of mothers' education and occupational status on children's socioeconomic status attainment were comparable to fathers' influences. After the start of the market reform, two possible trends in the influence of mothers' socioeconomic status could be expected. On the one hand, according to market transition theory, the importance of family background,

including mothers' status, is likely to increase. On the other hand, with the re-emergence of traditional gender values, the importance of mothers' status may decrease.

This chapter has two main findings. Firstly, in the period of high socialism, mothers' education was indeed as important as fathers' education for their daughters' education, and it also mattered, though less, for their sons' education. This finding corresponds to what previous research has found for Western societies (e.g., Kalmijn 1994; Korupp, Ganzeboom, and van der Lippe 2002). With regard to daughters' occupational status, mothers' occupational status had a significant direct influence that was comparable to that of fathers. But for sons' occupational status, only fathers' occupational status mattered. The second main finding is that with the market transition, influence of mothers' education on both sons' and daughters' education has increased. In addition, daughters' educational attainment profited more from fathers' education after the economic transition than before it. The importance of mothers' occupational status has decreased for both sons' and daughters' occupational status with the market transition. The decrease in the influence of mothers' occupational status aligns with the re-emergence of traditional gender norms.

1.6 Conclusion and discussion

1.6.1 The impacts of market transition on women's economic situation

This dissertation set out to answer two general questions regarding the influence of market transition on women's economic situation in China. The first question concerns the extent to which market transition processes affect women's economic situation. The second question pertains to the interplay between market transition and household characteristics and how it may affect women. In practice, the dissertation examined the influences of privatization, economic development, internal migration, and the re-emergence of traditional gender norms on women's economic situation. Moreover, it investigated the interplay of market transition processes, re-emergence of traditional gender norms, and two household characteristics (i.e., family financial situation and family composition) on women's economic situation.

The first overall conclusion is that women's economic situation is not directly harmed by market transition processes, nor by privatization, economic development, or internal migration. Through the investigation on whether market transition processes indeed worsened women's opportunity to find paid work in urban (Chapter 2) and rural areas (Chapter 3), it was found that in cities, women's employment opportunity decreased after the start of the market reform, but it was not worse than what men experienced. Moreover, privatization and economic development cannot explain the decline in women's employment opportunity. On the contrary, women profited from the economic development, likely because

more working opportunities emerged along with it.

In rural areas, women also benefited from market transition. In places with a high level of labor out-migration, women with no out-migrant members in their household allocated more time to off-farm paid work, which is more lucrative than farming. This is likely because labor out-migration creates a labor shortage in a region and, correspondingly, increases off-farm working opportunity for women in rural areas. It is noteworthy that left-behind women (i.e., women living in households with out-migrants) in these places did not benefit; instead, they were tied to the family farm.

Previous research suggested that women's economic situation fared poorly due to market transition (Bian, 2002; He and Wu, 2017, 2018; Wu and Zhou, 2015). Preliminary studies have emphasized the removal of state protection of women's paid work and women's disadvantaged position in a market-oriented economy, where efficiency and productivity play a central role. In fact, even among these early studies, specific evidence has hinted toward a different direction of the influence of market transition. For example, He and Wu (2018) found that economic development increased women's earnings, likely because economic development creates lucrative earnings opportunities for women. Our conclusion is contradictory to most previous research, which is not surprising, as previous research did not separate the influences of market transition from the impacts of cultural change.

The second main conclusion concerns the re-emergence of traditional gender norms and its consequences. During the high socialism period, traditional gender norms shaped the private sphere of people' lives, whereas socialist gender egalitarian ideology was dominant in the public sphere (Ji et al., 2017). After the start of market transition, traditional gender norms re-emerged in the public sphere. This may be a main reason for the deterioration of women's position in the labor market. We found strong indications that traditional gender norms and the male-breadwinner model played a role in women's opportunity to obtain off-farm work (Chapter 3), women's hourly-earnings (Chapter 4), and women's role in the status-attainment process (Chapter 5). In villages with a more traditional gender ideology, left-behind rural women are restricted to farm labor despite possible remittances sent home by migrants (Chapter 3). Internal migrant women who migrated from villages to cities for better employment opportunities suffered from a substantial earnings loss due to childbearing and childrearing activities (Chapter 4). The re-emergence of traditional gender norms also shifted the status attainment process. Mothers' cultural resources, as indicated by their education, became more important for their children's status attainment. Meanwhile, the economic resources that working mothers bring to the family became peripheral to children's status attainment (Chapter 5).

The third conclusion is that the influence of market transition processes on women's economic situation is contingent on household characteristics. The household is a primary unit of analyses in many sociological studies. It is well-established that the household's financial situation plays an important role in shaping women's economic behavior (Juhn

and Murphy, 1997; Mincer, 1962), and empirical evidence for this abounds in China (Ding et al., 2009; Wu and Zhou, 2015). In China, literature has also highlighted the influence of family composition on women's economic situation (Chen, 2004, 2005; Li et al., 2020; Yu and Xie, 2018). This dissertation explored the interplay of market transition processes and household characteristics on women's economic situation. While other women benefit from a regional labor shortage resulting from labor out-migration, women living in households with out-migrants are tied to family farms (Chapter 3). When focusing on internal migrants themselves, compared to internal migrant mothers who do not live with their children, those who do live with their children suffer from a substantial earnings loss (Chapter 4). Women's employment was negatively associated with the family's financial situation, but this association did not explain the influence of economic development, nor did it change with economic development. This finding suggests that there is no interplay between economic development and family financial situation, and that economic development seems to improve women's economic situation independent of their family financial situation.

1.6.2 Theoretical implications

Market transition debate

Market transition theory emphasizes changes in power dynamics, individual incentives, and opportunity structure with a transition to a market economy, whereas alternative explanations focus on stability. We found more support for the alternative explanations than for market transition theory. The Chinese labor market during the market transition was characterized by stability. Patterns of gender inequality in employment largely remained the same, as did educational inequality and inequality by political capital. These findings align with previous research on income inequality, social stratification, and mobility patterns in a (former) socialist society under transition (Verhoeven et al., 2005; Wu, 2019).

Both market transition theory and alternative explanations present an economic framework of understanding changes in men's and women's position in a transitional society. They emphasize how a market-oriented economy values certain individual attributes (i.e., either political capital or human capital) and that women's deteriorating economic position with the transition is mainly a result of women lacking those attributes. According to our findings, the latter statement is false. The economic framework of the market transition debate lacks consideration of how cultural currents may affect women's economic position. It is necessary to incorporate a broader framework in which the cultural context is considered (Ji et al., 2017). The continuity or discontinuity in gender ideologies and norms may be crucial for a better understanding of gender dynamics in a market transition.

The role of family composition

The NHE theory and new labor economics of migration emphasize how individual economic behavior is bounded by family characteristics. Both of the theories, however, mainly draw on experiences of the nuclear family, namely married couples with or without children. In China, family composition is more complex. Multigenerational families commonly exist, and adults tend to stay in the parental house at least until marriage; some continue to live with parents after marriage. We extended these theories to families with various compositions.

The NHE theory predicts how husband and wife divide tasks between paid and unpaid labor according to their specializations. However, the division of household labor is likely contingent on family composition. We made a start with applying multigenerational family composition to internal migrants. Previous studies have examined how living with parents or in-laws may affect local women's labor force participation and earnings in China (Chen, 2004; Maurer-Fazio et al., 2011; Yu and Xie, 2018). The direction of such influence, however, is mixed. On the one hand, co-resident parents (-in-law) share part of the household tasks that would otherwise be performed only by the wives (Chen, 2004). Therefore, living with parents (-in-law) may enable women to devote more time and energy in the labor market and compete for higher earnings. On the other hand, living with parents (-in-law) increased the amount of caring tasks for women (Zhan and Montgomery, 2003), and women's decision power in the family may be hampered by living with parents or in-laws (Cheng, 2018).

An underlying assumption of these past studies is that people can choose whether or not to live with their parents (-in-law), which may not be true. Living with parents (-in-law) may be costly and hence not affordable for some people, even if they need the family support. We extended the discussion on the influence of family composition to internal migrants whose living arrangements likely entail a selection process. We found that, for internal migrant mothers, living with children is related to a substantial earnings loss. Because migrants have limited access to the local welfare system that offers parental leave and public childcare services, migrant mothers living with children are in need of family support. However, living with other family members entails a nontrivial economic barrier that not all internal migrants can afford. We found that, indeed, only urban migrant women, who are more educated and have a higher occupational status than rural migrant women, profit from living with parents (-in-law). This finding indicates that a multigenerational living arrangement may entail a selection process based on the family's economic situation. Taking this possible selection into account may help provide a better understanding of how family living arrangements affect women's economic behavior.

In addition to family living arrangements, another key characteristic of family composition is the economic behavior of the family members. New labor economics of migration

theory emphasizes how the amount of labor and income in a household may affect women's economic situation. The theory suggests that out-migration of a family member changes women's economic situation via loss-of-labor impact or remittances. However, this theory overlooks the role of the type of labor. We extended this theory by specifying how the labor activity of the out-migrants prior to out-migration may affect women's time allocation. We found that farmers' wives increased their off-farm labor, whereas non-farmers' wives turned away from the labor market.

1.7 Limitations and future research

This dissertation is not without limitations. First, although we aimed to study Chinese women's economic situation, we did not systematically investigate all aspects of women's economic situation uniformly throughout this dissertation. We chose not to focus on a single aspect of women's economic situation for two reasons. Firstly, because women and work is a complex research theme, it would be difficult to reach a general conclusion regarding women's economic situation with market transition using a single indicator for women's economic behavior. Secondly, due to rural-urban discrepancy in market transition processes, there is a practical need to investigate rural, urban, and internal migrant women separately. We therefore examined the most relevant economic behavior for each group. Drawing on the previous litereature on women and work, we started by exploring employment opportunity among women in urban areas. For rural women, however, employment may be less relevant, given that the majority of them work on family farms. Hence, we investigated their time allocation to various labor activities. For internal migrants, employment may not be as relevant as it is for local urban residents because migrants tend to move in search of better employment opportunities. Therefore, we focused on earnings among internal migrant women.

However, it would be interesting to investigate the issues that this dissertation does not cover. For instance, as women's rate of labor force participation is generally high in China, future research could ask how working women divide their time among tasks. While this dissertation examined the time allocation of labor activities among rural women, it would be useful to investigate the same issue for other groups of women in China.

Second, although the aim of this dissertation is to examine the influence of market transition processes on women's economic situation, it does not provide a consistent measure of market transition processes. The main reason that we applied different measures of market transition is due to its complexity. In Chapter 2, we focus on women living in urban areas. We gathered provincial information (e.g., on the share of employees in private-owned enterprises, GDP per capita, and local wages) to measure privatization and economic development directly. Privatization and economic development are two crucial processes that have also been examined in prior studies (He and Wu 2017; 2018). However, the same

measurement cannot be applied to Chapter 3, which investigates women living in rural areas. Privatization is not as relevant for the rural economy. Moreover, provincial-level information on economic development may not reveal the economic situation in villages since economic development in a province is mostly driven by economic growth in cities. Therefore, in Chapter 3, we focused on how the average rate of out-migration at the village level may affect women's economic situation. In Chapter 5, we pooled men and women living in rural and urban areas together. Therefore, we adopted a relatively simple measure of market transition, namely birth cohorts. However, to better understand how market transition processes influence different aspects of women's economic situation, future research should look into possible ways to directly measure the market transition. For example, He and Wu (2017, 2018) examined regional variation in economic development and privatization in China in one year and how regional variation is associated with women's occupational status and earnings.

Third, the findings on the influence of the re-emergence of gender norms are suggestive rather than conclusive. This dissertation lacks a direct measure of gender role attitudes. In Chapter 3, the average spousal age gap is used to indicate gender norms in a region. Spousal age gap is found to reflect the power dynamics within the family (Carmichael, 2011; Crandall et al., 2016), and it is closely related to women's well-being, mortality, and marital violence (Crandall et al., 2016; Drefahl, 2010). However, because the spousal age gap usually remains relatively stable over time (Drefahl, 2010), it may not reflect a shift in the cultural context with market transition.

The influence of changes in gender norms on women's economic position merits further research. In the literature, gender ideology is typically measured at the individual level using a series of questions on gender-related issues, such as the division of household labor (Davis and Greenstein, 2009). Information on individual gender ideology is available in two waves (2006 and 2012) of the Chinese General Social Survey. In addition, the World Value Survey has collected information on gender attitudes for several waves in China. Future research may investigate changes in people's gender role attitudes with the market transition and how these changes affect women's economic situation.

Moreover, although China is an interesting case to study, it is unclear whether it helps enable a better understanding of economic transitions and gender inequality in societies in transition. In Eastern European countries, women's employment did not suffer from the economic transitions (Gerber and Mayorova, 2006; van der Lippe and Fodor, 1998; van der Lippe and van Dijk, 2002), which is similar to what we found for China. However, since China did not experience a regime change, whereas Eastern European countries did, a comparison between China and Eastern European societies may not shed more light on the understanding of the market transition.

There are two ways to carry out cross-country comparative research in the future to improve our understanding of gender dynamics with market transition. One way is to

compare China to countries that underwent a similar transition without a regime change, such as Vietnam (Woo et al., 1997). Another way is to compare China to societies that share similar cultural values but did not experience market transitions, such as Taiwan, South Korea, and Japan. The comparison among East Asian societies could illuminate the role of Confucian gender ideology in women's economic behavior. The Chinese General Social Survey collaborated with the General Social Surveys in Taiwan, South Korea, and Japan to develop the same module to measure gender ideology and family roles in two waves (i.e., 2006 and 2012), which could be used for a comparison study.

1.8 Final notes

At the 2011 National Committee of the Chinese People's Political Consultative Conference (CPPCC), a congresswoman proposed that the state should encourage women with relatively low earnings to withdraw from the labor market and return to their traditional gender role as caregivers in the family. In the 1990s when the market reform began, this type of proposal echoed a heated debate on whether or not women should leave the labor market as a solution to the rising unemployment rate and a way to rebuild the "proper" gender norms (Liu, 1994; Sun, 1994). At that time, the socialist gender equality ideology was still influential, and the argument for women to stay home was heavily criticized. A similar scale of critique on that congresswoman's proposal is no longer occurring today. There are many supporters for "women going back home" on social media. Additionally, researchers have recently discovered that younger generations in China hold more conservative gender views on the division of domestic tasks than their parents do (Ji et al., 2017). It is important to be aware of the recent phenomenon that women's work is again assumed to be peripheral and disposable according to familial and societal needs, similar to what happened to my mother.

DID WOMEN PAY THE PRICE OF MARKETIZATION? EXPLAINING THE GENDER DISPARITY IN EMPLOYMENT IN URBAN CHINA

Chapter 2

Siyang Kong, Ineke Maas, Marco H.D. van Leeuwen

This chapter was co-authored by Ineke Maas and Marco H.D. van Leeuwen. Kong wrote the main part of the manuscript and conducted the analyses. Maas and van Leeuwen contributed substantially to the manuscript. The authors jointly developed the idea and research design. An earlier version of this chapter was presented at the European Consortium For Social Research Spring School in Turin, Italy (20 April 2018), at the Annual Meeting of Labor Economics in Hangzhou, China (3 December 2017), at the Social Stratification and Mobility Winter Forum in Xi'an, China (9 December 2017), and at the Migration and Social Stratification Seminar at Utrecht University (17 November 2017).

Abstract

Market transition has led to profound societal changes in many countries. Social scientists have been intrigued by the possible social consequences of this economic transformation. In this study, we focus on the influence of privatization and economic development on the gender gap in employment in urban China. We study the changes in employment from 1996 to 2015 of 23168 men and women residing in the urban areas of 25 provinces using harmonized survey data. We collected provincial level data in each year from 1996 to 2015 to measure privatization and economic development. Over time women's and men's employment developed in a similar way, leading to a persisting gender gap. Also with privatization, the gender gap in employment persisted, because neither women's nor men's working opportunities changed with privatization. However, only women's employment benefited from economic development, leading to a narrowing gender gap along with economic development. Hypotheses on changing importance of human and political capital and family income were not supported.

2.1 Introduction

Since the late twentieth century, economic transformation including market transition has swept through a wide range of countries, including Eastern European countries, China, and Latin American countries. Individual's life chances are inevitably influenced by these societal changes. Being one of the first countries to experience the transformation, numerous studies emerged on how economic transformation in China altered its income distribution (Bian and Zhang, 2002; He and Wu, 2017; Verhoeven et al., 2005), occupational or class stratification and mobility (Walder, 2003; Wu, 2010), and welfare (Chen and Standing, 2007; Chen and Jin, 2012). These studies aimed to answer the question, "Who are the winners and who are the losers during the transformation process?". In previous research, women were usually portrayed as those who lose. A stagnant and, in some cases, widening gender gap, with women being disadvantaged, was found for wage earnings (He and Wu, 2017, 2018; Shu and Bian, 2002, 2003), job mobility (Cao and Hu, 2007), access to health care (Chen and Standing, 2007), and other aspects of life chances such as land rights (Berik et al., 2007) during the economic transformation. What has rarely been discussed is the possible change in the gender gap in labor market participation during the transformation.

For a change in the gender gap in labor market outcomes, it is crucial that men and women are equally able to participate in the labor force in the first place. The gender gap in employment is thus a crucial indicator of gender inequality. Work affects many aspects of life: it is closely related to an individual's bargaining power in decision-making processes within households (Brines, 1994); women's employment affects their fertility behavior (Brewster and Rindfuss, 2000; Brinton and Oh, 2019), child's cognitive development (Brooks–Gunn et al., 2002; Waldfogel et al., 2002), and family relations (Goldscheider et al., 2015).

Research on changes in women's labor force participation during the transition proliferated since the 1980s (e.g., Hare 2016; Wu and Zhou 2015). Women's labor force participation in urban China decreased dramatically after the transition started, from the 1990s to the early 2000s (Maurer-Fazio et al., 2011; Wu and Zhou, 2015). The transition and its consequences did not progress linearly (e.g. He and Wu 2017). With the continuation of economic transformation after 2000 women's participation increased again (Wu and Zhou, 2015). But, we still know little about changes in the gender gap in employment. Men's employment was often implicitly assumed to be less influenced by macro-level changes. Changes in the gender gap in employment were more or less equated with what happened to women. The first aim of this study is to investigate whether this was correct by comparing changes in women's and men's employment during the transformation in China.

It is well known that micro and macro level factors shape men's and women's employment differently. At the micro level, family responsibilities and the family's financial

situation mainly influence women's employment but not men's. For China it was found that changes in the family's financial situation substantially changed the employment of married women (Wu, 2010; Wu and Zhou, 2015). At the macro level, women's working opportunity is likely to be more harmed by the transition than men's, because female workers are more likely to be dismissed with the shrinkage in size and number of state-owned enterprises (Liu, 2007; Summerfield, 1994). The interplay between micro and macro level factors may also explain changes in the gender gap in working opportunity. According to the market transition theory (Nee, 1989, 1996; Nee and Matthews, 1996), the gender gap in job entrance decreased with the transition because individual achievements—such as educational attainment—became more important in getting a job than ascribed characteristics such as gender and personal ties to local officials, which women lack.

Although many studies attributed the changes in women's working opportunity to the transformation, few of them have measured the transition processes directly. Many prior studies used "time" as the sole proxy for all the transitions that happened in China. The large differences within Chinese society in the speed and the extent of transformation into a market economy (Nee and Matthews, 1996) are largely neglected. A few recent studies acknowledged that the economic transformation in China cannot be uniformly described as a nation-wide change that happened to all regions simultaneously. They show that regional variation in privatization and economic development, two elements of the economic transformation, explain partially the gender wage gap during the transition (He and Wu, 2017, 2018). It is reasonable to assume that privatization and economic development do not only differ between regions but also progress differently over time. The second aim of this study is to contribute to the literature by measuring regional levels of privatization and economic development in a long run and investigate how these two processes explain changes in the gender gap in employment.

Therefore, we ask the following questions in this study: 1) *How did the gender gap in employment in urban China change with the market transition*? 2) *To what extent can a change be explained by the interplay between privatization, economic development, and (changes in) individual characteristics*?

In this study, we focus on urban China because reform policies differed between rural and urban areas (see the Background section) and the economic transformation was more substantial in urban areas. Previous research also usually focused either on rural or urban China (Matthews and Nee, 2000; Shu and Bian, 2003; Wu and Zhou, 2015). We combine two national representative survey datasets, the Life Histories and Social Change in Contemporary China (LHSCC) survey and the Chinese General Social Survey (CGSS), with contextual information obtained from the yearbooks of the National Bureau of Statistics in China (NBS). This study examines 23168 men and women residing in the urban areas of 25 (out of a total of 34) provincial-level provinces in China from 1996 to 2015[5]. These data cover a relatively long period and capture the ongoing transformation in China. The

wide geographical coverage of the data allows this research to investigate not only temporal change, but also regional and temporal variations in the extent of market transition and concomitant processes.

2.2 Background: Economic transformation in China

A brief review of relevant policies and events will be given to facilitate understanding of the marketization reform in China. The period after the Chinese Communist Party took power in 1949 can be divided into two stages: the period of high socialism and that of reforms (Table 1.1).

In the pre-reform period, all resources in urban areas were controlled and redistributed by the political powers. Jobs were assigned by government agencies, and workers were tied to their work-units. According to Mao's interpretation of Marxist theory, paid work outside the home was crucial to women's liberation (Honig and Hershatter, 1988, page 243). Women were, therefore, mobilized to participate in the labor force (Honig, 2000, 2015). The labor force participation rate of married women in urban areas was 86.7% in 1982 (Maurer-Fazio et al., 2011). Although the marketization reform in urban areas had commenced two years prior, in 1982 this reform was still being established and was restricted to only one region, and hence it is assumed that at the national level the rate of women's employment was approximately 87% before the reform. The pursuit of building a "new China" in urban areas under the sway of redistributive economy triggered a series of problems. The efficiency of public-owned enterprises was low, many workers were redundant, and large urban unemployment was imminent because of the gap between the numbers of graduating urban youth and jobs that could be assigned to them.

In 1980 China started its economic transformation (*gaige kaifang*) in urban areas, which is also often referred to as 'market transition' or 'marketization reform'. The purpose of the marketization reform was to transform China's redistributive economy to a market-oriented one, in order to solve the problems generated during the period of high socialism. Unlike reforms in Eastern Europe, the Chinese reform aimed at a gradual development without regime change (Nee and Matthews, 1996). It began with the establishment of "special economic zones" in the city of Shenzhen, in the province of Guangdong. In these special zones, market-oriented economic policies and flexible governmental regulations were introduced. At the beginning of the reform, the state still tried to maintain their

[5]The provincial-level prefecture is the highest level of administrative regions in China. China has 34 provincial-level prefectures, including 23 provinces, 4 municipalities (Beijing, Tianjing, Shanghai, and Chongqin), 5 autonomous regions (Guangxi Zhuang, Inner Mongolia, Tibet, Xinjiang Uygur, and Ningxia Hui), and 2 special administrative regions (Hong Kong and Macau). In our study, we refer to provincial-level prefecture as province. Before 1997 China had 33 provinces; after 1997, Chongqin, which used to a city in Sichuan province, became a municipality. Hong Kong, Macau, Tibet, and Taiwan are not in the data. We excluded 5 additional provinces because they were not sampled in the LHSCC (Zhejiang, Hainan, Qinhai, Ningxia, and Xinjiang Uyghur).

share of public ownership, while encouraging the development of new private ownership (Lau et al., 2000). From 1993 onward, a more comprehensive reform of state-owned enterprises (SOEs) began, and of other public-owned enterprises somewhat later. Employers of public-owned enterprises were allowed to lay off workers after the reform. This reform in SOEs slowed down after 2004. In the meantime, China has worked hard to attract foreign investment and to encourage the development of foreign-owned and hybrid-owned enterprises. A significant milestone was China joining the World Trade Organization in 2001.

In addition to reforms of property rights, the market transition reshaped the labor market. In 1994 a new labor law was passed. This law gave employers the autonomy to dismiss employees who were redundant so that the enterprises' efficiency could be improved. In 1997 the government started a labor retrenchment program in SOEs. The number of employees in SOEs fell from 109.6 million in 1995 to 69.2 million in 2002 (Du and Dong, 2009). The increase in the number of retrenched workers however slowed down over the years. In 2018, China celebrated its 40 year anniversary of the marketization reform, and the top leader reaffirmed the importance and the country's dedication to further continue the reform.

2.3 Theoretical background

Since China's reform started in the 1980s, scholars have debated its possible social consequences. The institutional approach suggested that the "losers" in the transition were to be found among the former political elite, such as communist party members, while the "winners" were "direct producers" in the market, such as entrepreneurs (e.g. Nee 1989); in other words, the importance of political capital in determining individual social status declined, whereas human capital became increasingly important. The state-centered approach, conversely, emphasized how the market transition was carried out by a series of state-initiated reform policies; this meant that the state still controlled the market (Bian and Logan, 1996; Rona-Tas, 1994) . Accordingly, the political elite was able to take advantage of the market transition since it could transform their political resources into something profitable in the market.

Although the institutional and the state-centered approach differ in how they defined the market transition, they point out the same core processes within the economic domain. After all, the market transition aimed at transforming China's state socialist economy to a market-oriented one. Two processes were crucial to the market transition: privatization and economic development (He and Wu, 2017, 2018). In the following sections, we hypothesize how these processes affected the gender gap in employment.

2.3.1 Change in the gender gap in employment with privatization

The institutional approach

The market transition theory consists of three closely related theses: the "market incentive", the "market power", and the "market opportunity" thesis (Nee, 1989). The first two thesis will be used to derive hypotheses on the gender gap in employment.

The market incentive thesis claims that, with the shift to a market-oriented economy, individuals have a greater incentive to improve their productivity since their effort is rewarded more. With market transition, the returns to human capital, a prominent predictor of individual productivity, increase (Nee, 1991). Employability should therefore be more closely linked to an individual's educational attainment. Before the market transition and in the first years after its start, the gender gap in educational attainment was substantial, due to the long-standing Confucian patriarchal ideology that favors boys over girls (Bauer et al., 1992; Wu, 2012). Before the market transition, however, women's lack of human capital did not affect their employment because women's participation was promoted and protected by the state (Ji et al., 2017). After the transition, with diminishing administrative control in hiring processes, the demand for labor became more responsive to market rules. Since women on average were less educated than men at the start of the transition they were more likely to be fired. The gender gap in employment might increase because of privatization.

With the privatization proceeding, the growing returns for individual productivity incentivized women to acquire more human capital (Verhoeven et al., 2005). The gender gap in educational attainment gradually decreased after the market transition started (Wu, 2012). This narrowing educational gap in later phases of the transition may have decreased the gender-labor gap.

In summary we hypothesize: *with privatization, the gender gap in employment first increased and then decreased* (H1). In line with the market incentive thesis we also expect that (H1a) *if we control for men's and women's educational attainment, the association between privatization and the gender gap in employment decreases*, and (H1b) *the positive effect of education on men's and women's employment increases with privatization*.

The market power thesis argues that, with the transition to a market economy, power (defined as control over resources) is located less in the redistributive sector and more in the market sector. The prices of labor and goods are agreed upon in interactions between buyers and sellers instead of by administrative fiat. Therefore, market transition transfers power from redistributors to "direct producers"; this means that redistributors and people having political capital experience a decline of their privileges (Nee, 1989, 1991). In a socialist country, one's political resources are often closely related to membership of a communist party. In China, women have been underrepresented among members of the Chinese Communist Party, while a negligible number have been party cadres at the local

or national level (Howell, 2006; Yao and You, 2018). Although there were possible advantages associated with political capital and these may have been an incentive for people to accumulate this capital, becoming a member of the communist party—or even a party cadre—was not easy. For women the obstacles to political participation were greater. They were confronted with a traditional gender ideology that claimed that they lacked the qualities needed in politics (Yao and You, 2018). According to the market power thesis, political resources became less important because of privatization, and hence men's labor opportunities likely declined, while women's opportunities remained the same: *with privatization, the gender gap in employment decreased* (H2). We also expect that *if we control for men's and women's political capital, the association between privatization and the gender gap in employment decreases* (H2a), and *the positive effect of political capital on men and women's employment decreases with privatization* (H2b).

The state-centered approach

Rona-Tas (1994) argued that communist cadres converted their political capital into economic advantage. This argument is known as the "power conversion" theory. It is in line with the "power persistence theory", which states that the political elite was able to profit from the transition by directly using their political capital (such as rent-seeking) (Bian and Logan, 1996).

In several Eastern European countries (for example, Hungary) former communist party members prospered as entrepreneurs (Rona-Tas, 1994) and the same has been found for urban China (Wu, 2010). Chinese party members also had higher wages than non-party members after the start of the transition (Bian and Logan, 1996), and more decision-making power in local companies (Opper, Wong, and Hu, 2002).

As we previously discussed, women's political participation was not common in China. If political capital is a key to market advantages, then the existence of gender inequality in political capital may have prevented women from having the same employment opportunities as men during the transition. This implies that contrary to H1 and H2, it is expected that *with privatization, the gender gap in employment remained the same* (H3). To the contrary of H2b which assumes that political capital became less important with privatization, it should be the case that *with privatization, the positive effect of political capital on men's and women's employment remained the same* (H3a).

2.3.2 Change in the gender gap in employment with economic development

The institutional and the state-centered approach primarily focus on the consequences of the economic transformation for the demand for labor. It is, however, also important to consider changes in the supply of male and female labor.

Labor economists have pointed out that the employment of married women is often not a matter of choice but of necessity, because the income of the husband negatively influences the likelihood of the wife to participate in the labor market (Juhn and Murphy, 1997; Mincer, 1962). This is known as the "negative income effect". When the income of the husband is not sufficient for family survival, women's employment becomes essential. China's market transition enabled rapid economic development. With economic development, the husband usually can earn more, and it is less necessary for women to work.

According to Goldin (1994), however, with continuing economic development, more attractive jobs for women become available—for instance, white-collar work. At the same time, women's education increases so that they are able to work in these jobs and earn a relatively high wage. Accordingly, the income effect weakens, and women's employment starts to rise again. The pattern of women's employment with economic development is, therefore, U-shaped.

In China, a similar U-shaped pattern of women's employment likely appeared with the market transition. Despite decades of the practice of "equal work, equal pay" during the period of state socialism, after the market transition the gender wage gap widened (He and Wu, 2017; Wu, 2019). With the rise in (male) income and the reemergence of traditional gender norms, the "male-breadwinner" family model spread in urban areas (Song 2011). Theoretically these developments should lead to a decline of women's employment (Wu and Zhou, 2015). With continuing economic development, the number of well-paid jobs in the market, such as white-collar jobs in foreign-capital companies increased. Concurrently, the gender gap in educational attainment decreased substantially (Wu, 2012). According to Goldin (1994), well-educated women have an incentive to enter the labor market when there are lucrative jobs. At the same time, as pointed out by Wu and Zhou (2015), the living expenses (for example, health care, housing, and education fees) increased drastically with economic development. One wage became insufficient for family survival in regions with high economic development, such as Beijing and Shanghai. This also created incentives for women to participate in the labor market.

We thus assume that: *with economic development, the gender gap in employment first increased and then decreased* (H4). It should also be the case that *if we control for a family's income the association between economic development and the gender wage gap in employment decreases* (H4a), and *the higher the level of economic development, the weaker the negative effect of a family's income on women's employment* (H4b). An overview of the hypotheses and their labels can be found in Table 2.1.

Table 2.1: An overview of all hypotheses

Privatization		
H1	Educational inequality hypothesis	With privatization, the gender gap in employment first increased and then decreased
H1a	Educational composition hypothesis	If we control for men's and women's educational attainment, the association between privatization and the gender gap in employment decreases
H1b	Educational effect hypothesis	The higher the level of privatization, the stronger the positive effect of education on men and women's employment
H2	Political inequality hypothesis	With privatization, the gender gap in employment decreased
H2a	Political composition hypothesis	If we control for men's and women's political capital , the association between privatization and the gender gap in employment decreases
H2b	Declining political effect hypothesis	The higher the level of privatization, the weaker the positive effect of political capital on men and women's employment
H3	Power persistence hypothesis	With privatization, the gender gap in employment remained H3a Lasting political effect hypothesis With privatization, the positive effect of political capital on men and women's employment remained
Economic development		
H4	Economic development hypothesis	With economic growth, the gender gap in employment first increased, and then decreased
H4a	Family income composition hypothesis	If we control for a family's income the association between economic development and the gender wage gap in employment decreases
H4b	Family income effect hypothesis	The higher the level of economic growth, the weaker the negative effect of family income on women's employment

2.4 Data and operationalization

2.4.1 Data

Individual-level data

We combined survey data from two sources: the LHSCC, conducted in 1996 (Treiman, 1997), and the CGSS, from 2003 to 2015 (Bian and Li, 2012)[6]. The two surveys are very comparable in their survey designs and implementation. They used the same multistage stratified sampling design and the surveys were conducted by the same institution—Department of Sociology of the People's University in Beijing. The questions asked in the two datasets were identical most of the time. In the Operationalization section we will elaborate on the few cases where this was not the case. Researchers have combined the two datasets to study similar topics before (Wu and Zhou, 2015; Zhou and Xie, 2019).

We did a robustness check with only CGSS data (see Robustness check section for more information).

The LHSCC survey was conducted in 1996 in rural and urban China. One national probability sample was obtained of the rural and one of the urban population, each comprising 4,000 adults, aged between 20 to 69. Details of the sampling design and its implementation can be found in the codebook of the LHSCC[7]. In total 3,087 interviews of urban residents and 3,003 of rural residents were collected.

We supplemented the LHSCC data with 8 waves of the CGSS data (2003, 2005, 2006, 2008, 2011, 2012, 2013, and 2015). The CGSS, launched in 2003, is one of the earliest national representative surveys in China. The targeted population of the CGSS is adults aged 18 and above. In total approximately 10,000 individuals were examined in the 2003–2006 waves, 6,000 in the 2008 wave, and 12,000 in the 2010–2015 waves. Further details of the sampling design can be found on the CGSS website. By combining the two datasets, they not only cover a long period of time from 1996 to 2015 but also have a wide geographical coverage.

Contextual-level data

In order to study the direct influence of regional and temporal variations in the market transition on individuals' employment, we supplemented the individual-level data with contextual-level information that was gathered from the online yearbooks of the NBS[8]. Each book contains information for each province that refers to the end of the previous year. Inspired by He and Wu (2017, 2018), we collected several indicators that are available for all the years from 1996 to 2015 in each province to measure two processes that occurred during the transition: privatization and economic development. The indicators are: the share of employment in private sector, the GDP per capita, the share of tertiary sector added value in GDP, local average wage of employed persons, and the share of employment in the tertiary sector. The share of employment in the private sector was used to measure privatization and the other variables are used to measure economic development.

Previous research (He and Wu, 2017, 2018) included more items than we did, such as the gross industrial output value (GIOV) or the share of the GIOV by state-owned industrial enterprises, and identified two different processes in the transition. We did not follow this procedure because the measurement of some items in the statistical yearbooks is inconsistent over years. For instance, starting from 1998, instead of including statistics about all industrial enterprises, the yearbooks included only the information of the industrial enterprises that were above a certain size, and the size used to classify industrial enterprises also

[6]CGSS website: `http://cgss.ruc.edu.cn/English/Home.htm`

[7]Codebook of the LHSCC is available on `https://doi.org/10.7910/DVN/33PMXL`, see file DTA900.file2685.CHINA_1996.PDF, Appendix D.

[8]For all online yearbooks of NBS, see: `http://www.stats.gov.cn/english/Statisticaldata/AnnualData/`.

changed across years. The inconsistency in the measurement of the statistical yearbooks may not be very problematic if researchers are only interested in changes across regions at one time point, such as He and Wu (2017). In our case, however, we also want to study trends over time, therefore the inconsistency in the yearbooks of some items is problematic.

2.4.2 Selections

We restricted our sample to individuals living in urban areas and selected individuals aged 20 to 50. People younger than 20 were excluded because they could still be in school. The upper age limit was chosen because the youngest official retirement age is 50 (for women; 60 for men). Even after the age restriction there were still people in our data who were studying or early-retired[9]. We excluded people whose current activity was schooling (0.08% in the LHSCC, 0.02% in the CGSS) and those who were retired (7.72% in the LHSCC, 0.02% in the CGSS). We also excluded people who were not working because of disability (0.31% in the LHSCC, 0.006% in the CGSS). Finally, some cases were lost (8.9%) after list-wise deletion of missing values. In total, we examined 23168 individuals (11193 men, 11975 women) living in the urban areas of 25 provinces between 1996 and 2015.

2.4.3 Operationalization

Dependent variable

Employment is the dependent variable. It was obtained from answers given to questions regarding respondents' current main activity and reasons for unemployment[10]. We generated a dichotomous variable of "1" for those currently performing paid work—including those who were employed, and self-employed—and "0" for those not performing paid work—including those who were unemployed and performing domestic tasks (see Table 2.2 for descriptive statistics for all variables).

We decided to combine the unemployed and those performing domestic tasks in one category for two reasons. The first reason is theoretical. In a society with strong traditional gender norms the border between these two subcategories may be blurred because

[9]Some people retired before the official retirement age, especially during the radical "decollectivization" and reconstruction of SOEs from 1990 to 2004.

[10]In the LHSCC, the possible answers to the question regarding current activities are: "laboring", "working", "waiting for jobs", "attending schools", "keeping houses", "maternity leave", "retired", "on leave", "disabled", and "other". In CGSS 2003 and 2005, the answers to the same question are: "working", "retired", "no job", "study in schools", and "other". In wave 2006 and 2008, the answer categories are "having a job currently"; "used to work, but not now", and "never worked". A follow-up question was asked about the reasons for unemployment and they are: "attending schools", "lost job", "stay at home to take care of the family", "disabled", "laid-off", "retired". In wave 2011, 12, 13 and 15, a distinction was made between working on a farm or not. Reasons on why a person is not working are "Studying", "Lost labor ability", "No job after graduation", "Lost job because of the work-unit", "Lost job because of oneself", "Land acquisition", "Retired", "Stay at home taking care of the family", and "Other".

Table 2.2: Descriptive statistics of all variables, separate for men and women

	Men				Women				Diff.
	Mean	SD	Min	Max	Mean	SD	Min	Max	
Employment	0.89		0	1	0.71		0	1	0.18***
									(34.78)
Schooling	11.59	3.37	0	21	10.96	3.68	0	19	0.63***
									(13.51)
Political capital	0.16		0	1	0.07		0	1	0.09***
									(22.83)
Family income	18.94	164.24	0	9902	28.33	169.19	0	9883	−9.39***
									(−4.28)
Privatization	37.34	11.55	4.79	63.84	37.48	11.69	4.79	63.84	−0.14
									(−0.92)
Economic development	1.75	1.19	0	5.92	1.72	1.19	0	5.92	0.02
									(1.50)
Age	36.14	8.23	20	50	35.67	8.08	20	50	0.47***
									(4.42)
Married	0.78		0	1	0.83		0	1	−0.05***
									(−9.75)
Urban hukou	0.76		0	1	0.74		0	1	0.02***
									(3.79)
Co-residence	0.27		0	1	0.23		0	1	0.04***
									(7.02)
Preschool children	0.19		0	1	0.20		0	1	−0.01
									(−1.63)
Observations	11193				11975				

Notes 1. One unit in Family income is 1,000 RMB yuan
2. t statistics in parentheses
3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

unemployed women give the socially desirable answer of performing domestic tasks. The second is a practical reason. We did not have information on why a person was not working in 2003 and 2005, and hence, we cannot differentiate the unemployed and those who were performing domestic tasks in these two years.

Independent variables at the individual level

Human capital was measured by respondents' *years of schooling*. In the CGSS, this was recorded from the highest level of education completed. Based on previous research (Wu, 2012), illiteracy was coded as "0" years of schooling, primary school education as "6", secondary school education as "9", technical high school and formal academic high school education as "12", technical college education as "15", an academic college education as "16", and master's education and above as "19". In the LHSCC data, respondents' *years of schooling* is measured directly.

Party membership of the respondents is a dichotomous variable measuring political capital. In the LHSCC survey, "are you a party member" was asked with a very clear context in which the "party" referred to the CCP. In the CGSS survey, questions about political affiliation were asked. We recoded being a member of the CCP as "1". People who were members of another political party or had no political affiliation were coded as "0".

The financial situation of families was measured by the amount of *family income*. This is the total amount of household yearly income minus the yearly income of the respondent (in RMB yuan). In both datasets, questions on the annual income of all household members and of the respondent are asked. In order to be able to compare family income over time, we recalculated the real *family income* by considering the inflation rate.9 We divided the value of *family income* by 1,000.

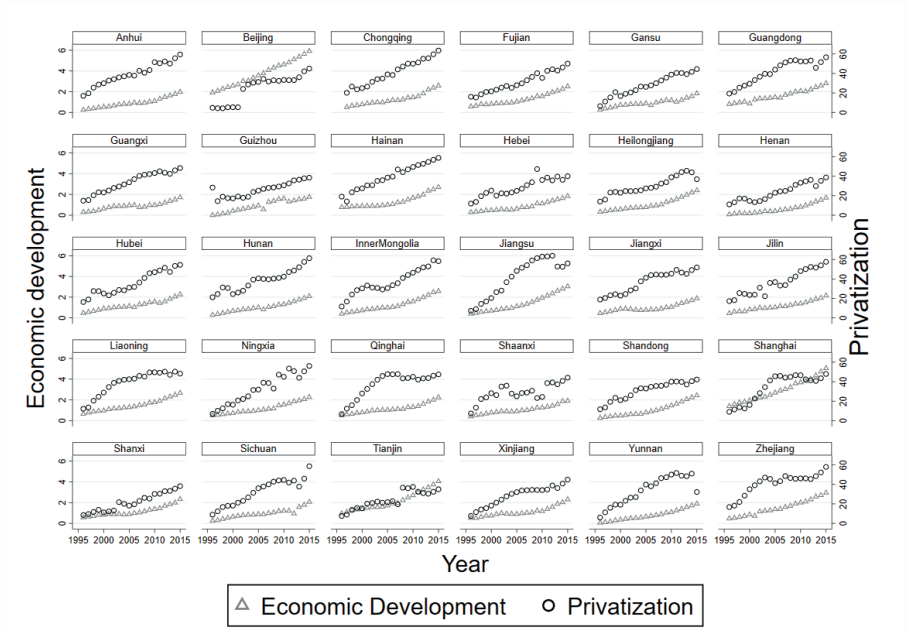
Independent variables at the contextual level

Privatization is measured by the proportion of people employed in private sector and self-employment in a province in a year.

Economic development is measured by the GDP per capita, the share of tertiary sector added values in GDP, local average wage, and the share of employment in the tertiary sector. To create a scale to measure economic development using the four indicators, we first standardized the indicators and took the mean of all four indicators. We then right-shifted the value of economic development so its minimum value is zero, because negative values of economic development are not meaningful.

The correlation between privatization and economic development is 0.49, which is reasonable considering that the goal of privatization policies involves increasing the economic situation in the country. Figure 2.1 depicts the trends of privatization and economic devel-

Figure 2.1: Privatization and economic development by province from 1996 to 2015



Note: 1. Privatization is the proportion of people employed in private sector and self-employment in a province in a year. Economic development is the mean of the GDP per capita, the share of tertiary sector added values in GDP, local average wage, and the share of employment in the tertiary sector. We right-shifted the value of economic development so its minimum value is zero. 2. Data source: yearbooks of the National Bureau of Statistics of People's Republic of China.

opment in each province in our data. The figure shows the importance of not only studying changes over time, but also taking regional differences into account. The correlations of all indicators are shown in Table A.1.

Control variables

At the individual level we control for age because it is correlated with the likelihood of having a job. Hukou type (household registration type) is a dummy variable: "1" denotes the possession of an urban hukou. The employment opportunities in urban areas could be different for people with different hukou types (Wu and Zheng, 2018). Moreover, hukou type takes into account the possible influence of being a rural-to-urban migrant on our dependent variable. Married is a dummy variable: "1" denotes being married; "0" denotes singles, divorcees and widow[er]s. The presence of pre-school children is a dummy variable with "1" indicating the presence of children younger than 7. Taking care of preschool children can be demanding for parents (especially the mother), and decrease the likelihood to be employed. In addition, we controlled for whether a person is co-resident with the parents or parents-in-law by means of one dummy variable—Co-residence.

All continuous variables were centered using the "grand-mean centering method" (Enders and Tofighi, 2007). This means, for example, that a certain individual's years of schooling is a deviation from the average years of schooling of all persons in our data.

2.5 Analytical Strategy

We performed multilevel linear probability regressions with robust standard errors to predict the probability of participating in the labor force for men and women separately. Linear probability models (LPMs) use a regular OLS regression on a dichotomous variable. LPMs are a well-performing alternative to logistic regressions when the distribution of the probability is not too skewed, i.e., between 0.2 and 0.8 (Hellevik, 2009). Linear probability models have several advantages compared to logistic models. First, coefficients of LPMs can be directly interpreted as the probability of the dependent variable being 1 (Hellevik, 2009; Mood, 2010). Second, coefficients of LPMs can be compared across models whereas this is problematic in logistic regressions (Mood, 2010). Third, the magnitude of interaction terms and related statistical significances are problematic in logistic regressions (Ai and Norton, 2003), but not in LPMs.

The multilevel structure takes into account the interdependence of observations within the same context. In this study, individuals are nested within a combination of year and province, i.e., province-year level. Province-year combinations are nested within provinces. We used the "mixed" command in StataSE 14 with the robust variance estimator (i.e., option vce(robust)).

For practical reasons, the sequence of the analyses is not entirely commensurate with the order of the hypotheses. We did separate analyses for men and women because we want to take into account possible differences between men and women in the effects of not only our explanatory variables but also the control variables. We started with an intercept-only model as a baseline model for men and women separately. In the second model we added control variables at the individual level. To test the significance of the gender gap, we used multilevel structural equation models ("gsem" in StataSE 14) that are identical to the multilevel linear probability regressions. The gender gap in employment after controlling for individual characteristics is the difference in the constant value between the two groups, i.e., male and female. In the third step, we added year dummies sequentially. Here, the difference between the constants reflects the gender gap in employment in 1996. The difference between the effect of year dummies is then the difference in the change in employment between men and women.

Since we are interested in how the gender gap changed with market transition processes, in the following steps we first added *privatization* and *economic development* separately in two models and then combined these variables in one model. In the penultimate step, we added the interaction terms *privatization* with *years of schooling*, and *privatization* with *political capital*. In the last step, we investigate how the changes in the income effect with *economic development* influence the changes in the gender gap in employment, with an interaction term of *economic development* and *family income*.

2.6 Results

2.6.1 Descriptive results

Table 2.2 shows summary statistics of all our variables for men and women separately and the comparison between the two. The results are in line with our theoretical argumentation. On average women have less schooling than men and are less likely to be a communist party member. The average family income of other family members of men is less than that of women, which is reasonable considering that in most Chinese families, the husband's income is higher than the wife's (if the wife works). With regards to the control variables, in our data, on average, men are older than women. Women are more likely to be married than men and are less likely to have urban *hukou*.

Men co-reside with their parents (or parents-in-law) slightly more often than women, which is in line with the Chinese tradition that couples live with the husband's parents after marriage. Men and women do not differ in whether or not having pre-school children nor the privatization and economic development level of the province in which they live. In total, we have slightly more female observations (11975) than male (11193), which means that the sex-ratio in our sample is different from that in the general population.

Figure 2.2 shows the general trend of men's and women's employment in urban China, unadjusted for control variables. Both men's and women's employment dropped substantially and at the same speed from 1996 to 2003. For men the rate of employment dropped from 97% to 79%; for women from 80% to 60%. From 2003 to 2012, men's employment showed a gradual increase. Women's participation fluctuated but with an increasing trend. After 2012 both men's and women's participation dropped marginally until 2015. As Figure 2.2 illustrates, the gender gap in employment persisted over time.

Figure 2.2: Rate of employment by gender from 1996 to 2015

Note: 1. Authors' calculation based on data from the *Life Histories and Social Change in Contemporary China* 1996; *China General Social Survey* 2003, 2005, 2006, 2008, 2011, 2012, 2013, and 2015.

2.6.2 Analytical results

Model 1 in Table 2.3 is the baseline model, from which we can see that the variance at the province level is small. For both men and women, only 1% of the total variance is at the province level10 and 7% at the province-year level for men and 5% for women.

Women had significantly lower probability of employment than men (χ^2 = 15.87, p-2s $<$ 0.001, Model 2), controlling for individual-level characteristics such as age and household situation. In 1996, women's participation was lower than men's but not significantly (χ^2 = 2.14, p-2s = 0.14, Model 3). In the first few years after 1996, men's and women's employment both decreased, with a decreasing pace (Model 3). Between 1996 and 2003, the probability of men's and women's participation dropped by 0.16 and 0.21, respectively, with no significant gender difference (χ^2 = 2.24, p-2s = 0.13). In 2005, the probability had dropped by 0.09 for men and 0.17 for women compared to 1996. The decrease in

Table 2.3: Multilevel linear regressions: trends of employment for men (N = 11193) and women (N = 11975)

	Model 1		Model 2		Model 3	
	Men	Women	Men	Women	Men	Women
Year (ref: 1996)						
2003					−0.163***	−0.214***
					(0.026)	(0.035)
2005					−0.094***	−0.170***
					(0.017)	(0.027)
2006					−0.082***	−0.164***
					(0.016)	(0.028)
2008					−0.052**	−0.088***
					(0.018)	(0.031)
2011					−0.008	−0.011
					(0.015)	(0.029)
2012					0.011	−0.015
					(0.013)	(0.027)
2013					0.005	−0.031
					(0.013)	(0.029)
2015					−0.024	−0.041
					(0.018)	(0.023)
Age			−0.003***	−0.003***	−0.003***	−0.003***
			(0.000)	(0.000)	(0.001)	(0.001)
Age^2			−0.000***	−0.001***	−0.000***	−0.001***
			(0.000)	(0.000)	(0.000)	(0.000)
Married			0.075***	−0.096***	0.075***	−0.096***
			(0.014)	(0.017)	(0.014)	(0.018)
Urban *hukou*			−0.028***	0.052***	−0.019**	0.065***
			(0.006)	(0.013)	(0.006)	(0.014)
Preschool children			−0.011	−0.114***	−0.012	−0.116***
			(0.007)	(0.012)	(0.007)	(0.012)
Coresidence			−0.061***	−0.016	−0.062***	−0.017
			(0.010)	(0.010)	(0.010)	(0.010)
Mean/intercept	0.886***	0.699***	0.894***	0.811***	0.936***	0.889***
	(0.009)	(0.014)	(0.017)	(0.024)	(0.018)	(0.033)
$\sigma^2_{province}$	0.001***	0.003***	0.001***	0.003***	0.001***	0.004***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
$\sigma^2_{province-year}$	0.007***	0.010***	0.006***	0.011***	0.002***	0.004***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.099***	0.203***	0.091***	0.190***	0.091***	0.190***
	(0.006)	(0.007)	(0.005)	(0.006)	(0.005)	(0.006)
AIC	5966.312	15020.589	5260.812	14424.315	5173.357	14329.390
BIC	5988.299	15042.776	5334.043	14498.221	5305.172	14462.420
LL	−2980.156	−7507.294	−2620.406	−7202.158	−2568.678	−7146.695

Notes 1. All continuous variables are centered around their means.
2. Robust standard errors are in parentheses.
3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

women's participation is significantly larger than that in men's (χ^2 = 7.84, p-2s < 0.01), so was the situation in 2006 where women's participation had decreased more than men's (χ^2 = 7.73, p-2s < 0.001). Both men's and women's participation decreased in 2008 compared to 1996, but with no gender difference. With a decreasing negative influence of year, both men's and women's probability of employment ceased declining in 2011. Since 2011, neither men's nor women's employment differed from that in the year 1996.

In summary, the results indicate that after 1996, the working opportunities of both men and women first dropped but later recovered. Women did not suffer more than men in terms of working opportunities, except in 2005 and 2006. The trend of employment of men and women after controlling for several individual characteristics are very similar to what Figure 2.2 depicts.

In Table 2.4, we show the influence of the privatization and economic development on men's and women's employment in China controlling for years and some individual characteristics. In Model 1 the focus is on privatization. It shows that neither men's nor women's employment changed with privatization. Therefore, with privatization, the gender gap in employment remained.

Model 2 shows that economic development had no effect on men's but did have an effect on women's probability of participating in the labor force (b = 0.039, p-2s < 0.05). The probability of women's employment increased with economic development while men's remained constant. This means that the gender gap in employment narrowed with economic development. By comparing the effect sizes of the year-variables in Model 3 in Table 2.3 with those in this model, we can see whether controlling for economic development explained the changes in women's employment over years. In contrast to what we expected, after controlling for economic development, the magnitude of the negative trend over time in women's participation became larger. This indicates that the drop in the probability of women's participation in the first few years after 1996 was so severe that even the positive influence of economic development on women's participation could not remedy it.

Table 2.4: Multilevel mixed-effects linear regressions: men's and women's employment on market transition indicators

	Model 1		Model 2		Model 3	
	Men	Women	Men	Women	Men	Women
Privatization	−0.000	0.001			−0.000	0.001
	(0.001)	(0.001)			(0.001)	(0.001)
Privatiztaion^2	0.000	−0.000			0.000	−0.000
	(0.000)	(0.000)			(0.000)	(0.000)
Economic Development			0.013	0.039*	0.013	0.038*
			(0.009)	(0.019)	(0.009)	(0.018)

Continued on next page

Table 2.4: (continued)

Economic Development^2			−0.003	−0.004	−0.002	−0.003
			(0.002)	(0.004)	(0.002)	(0.004)
Year (ref: 1996)						
2003	−0.151***	−0.273***	−0.172***	−0.236***	−0.162***	−0.292***
	(0.043)	(0.049)	(0.030)	(0.037)	(0.044)	(0.049)
2005	−0.076	−0.238***	−0.106***	−0.198***	−0.095*	−0.262***
	(0.041)	(0.055)	(0.021)	(0.031)	(0.042)	(0.055)
2006	−0.065	−0.235***	−0.094***	−0.194***	−0.083*	−0.260***
	(0.041)	(0.058)	(0.020)	(0.030)	(0.042)	(0.057)
2008	−0.035	−0.166**	−0.067**	−0.128***	−0.056	−0.200**
	(0.047)	(0.063)	(0.023)	(0.038)	(0.048)	(0.064)
2011	0.008	−0.092	−0.028	−0.064	−0.017	−0.139*
	(0.044)	(0.061)	(0.022)	(0.039)	(0.047)	(0.065)
2012	0.026	−0.097	−0.011	−0.074	−0.001	−0.150*
	(0.042)	(0.056)	(0.020)	(0.039)	(0.045)	(0.061)
2013	0.020	−0.113*	−0.018	−0.099*	−0.008	−0.174**
	(0.043)	(0.055)	(0.020)	(0.043)	(0.045)	(0.062)
2015	−0.009	−0.124*	−0.051	−0.122**	−0.043	−0.197**
	(0.045)	(0.057)	(0.029)	(0.043)	(0.050)	(0.065)
Age	−0.002***	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Age^2	−0.000***	−0.001***	−0.000***	−0.001***	−0.000***	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.089***	−0.093***	0.075***	−0.096***	0.075***	−0.096***
	(0.014)	(0.017)	(0.014)	(0.018)	(0.014)	(0.018)
Urban *hukou*	−0.028***	0.063***	−0.020**	0.064***	−0.020**	0.065***
	(0.006)	(0.015)	(0.006)	(0.014)	(0.006)	(0.014)
Preschool children	−0.015*	−0.116***	−0.012	−0.115***	−0.012	−0.115***
	(0.007)	(0.012)	(0.007)	(0.012)	(0.007)	(0.012)
Coresidence	−0.002***	−0.003***	−0.062***	−0.016	−0.062***	−0.016
	(0.001)	(0.001)	(0.010)	(0.010)	(0.010)	(0.010)
Mean/intercept	0.899***	0.964***	0.957***	0.943***	0.945***	1.016***
	(0.040)	(0.059)	(0.025)	(0.040)	(0.049)	(0.061)
$\sigma^2_{province}$	0.001***	0.004***	0.001***	0.003***	0.001***	0.003***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{province-year}$	0.003***	0.004***	0.002***	0.004***	0.002***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.092***	0.190***	0.091***	0.190***	0.091***	0.190***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)
AIC	5253.557	14331.207	5176.283	14328.732	5180.057	14330.153
BIC	5392.695	14471.628	5322.744	14476.543	5341.164	14492.746
LL	−2607.779	−7146.603	−2568.142	−7144.366	−2568.028	−7143.077

Notes: 1. All continuous variables are centered around their means.
2. Robust standard errors are in parentheses.
3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Model 3 includes the effect of privatization and economic development simultaneously, and the results are similar to adding the two processes separately. The model fit statistics

(AIC and BIC) suggest that the best model for both men and women is Model 2, in which only economic development was added.

Taken all together, regarding the influence of privatization, we found support for H3, which argues that with privatization, the gender gap in participation remained, whereas, H1 and H2 predicting other changes in the gender gap with privatization are refuted. Regarding economic development, H4 suggests a curvilinear effect of economic development on the gender gap (first increasing, then decreasing), which we did not find. We found that with economic development, the gender gap narrowed, and therefore H4 is refuted.

So far we investigated the changes in the gender gap in employment with the transition processes. In Table 2.5 and 2.6, we included several individual characteristics to further examine mechanisms through which the privatization and economic development could affect the gender gap in employment.

In Table 2.5, we focus on privatization. Model 1 shows that years of schooling had a positive influence on both men's and women's employment. Privatization had no influence on men's or women's participation, and controlling for one's schooling did not change this. Model 2 shows that the positive influence of schooling on both men's and women's participation decreased with privatization, which is in contrast to the market transition theory. Model 3 shows that political capital had a positive influence on both men's and women's participation, however, with privatization, the influence of political capital on women's participation decreased (Model 4), which is in line with the "market power thesis" and therefore in contrast to the power persistence theory.

In summary, H1a and H2a on the composition effects of schooling and political capital are refuted, as we found no influence of privatization on men's or women's participation to begin with. According to the market transition theory, with privatization, the influence of education would become more important, i.e., H1b, and the influence of political capital would become less important, i.e., H2b. We only found partial support for the second half of the theory: with privatization, the importance of political capital became less important, but it was only true for women. Therefore, H2b is partially supported and H1b is refuted. In contrast to the market transition theory, the power persistence theory emphasizes the persisting importance of political capital on working opportunities, i.e., H3a. We only found support for this for men, because the importance of political capital on men's employment did not change with privatization.

In Table 2.6, the focus is on economic development. Model 1 shows that family income had a positive influence on men's participation, while having a negative influence on women's participation. This is in line with the "negative income effect" hypothesis, indicating that women's employment in China is likely to be out of necessity instead of by choice. However, controlling for one's family income did not change the influence of economic development on employment. Model 2 shows that there is no moderation effect of economic development on the effect of family income on men's or women's participation.

Table 2.5: Multilevel mixed-effects linear regressions: men's and women's employment on individual resources and privatization

	Model 1		Model 2		Model 3		Model 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Privatization	0.000	0.002	0.000	0.001	0.000	0.002	0.000	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Privatization^2	0.000	−0.000	0.000	−0.000	0.000	−0.000	0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Schooling	0.012***	0.029***	0.013***	0.030***				
	(0.001)	(0.002)	(0.002)	(0.002)				
× Privatization			−0.000***	−0.001***				
			(0.000)	(0.000)				
Political capital					0.072***	0.204***	0.072***	0.205***
					(0.009)	(0.020)	(0.008)	(0.019)
× Privatization							−0.000	−0.003*
							(0.001)	(0.001)
Year controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age	−0.002***	0.001	−0.002***	0.001	−0.003***	−0.003***	−0.003***	−0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)
Age^2	−0.000∗***	−0.001***	−0.000***	−0.001***	−0.000***	−0.001***	−0.000***	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.074***	−0.081***	0.075***	−0.080***	0.070***	−0.098***	0.070***	−0.098***
	(0.014)	(0.017)	(0.014)	(0.017)	(0.014)	(0.018)	(0.014)	(0.018)
Urban *hukou*	−0.054***	−0.029**	−0.052***	−0.027*	−0.028***	0.054**	−0.028***	0.054***
	(0.009)	(0.011)	(0.009)	(0.011)	(0.006)	(0.014)	(0.006)	(0.014)
Preschool children	−0.008	−0.113***	−0.009	−0.113***	−0.010	−0.114***	−0.010	−0.113***
	(0.007)	(0.012)	(0.007)	(0.012)	(0.007)	(0.012)	(0.007)	(0.012)
Coresidence	−0.055***	−0.018	−0.056***	−0.019	−0.060***	−0.015	−0.060***	−0.015

Continued on next page

Table 2.5: (continued)

	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)	(0.011)
Mean/intercept	0.959***	1.067***	0.967***	1.082***	0.922***	0.964***	0.922***	0.966***
	(0.043)	(0.054)	(0.045)	(0.056)	(0.045)	(0.058)	(0.045)	(0.058)
$\sigma^2_{province}$	0.001***	0.002***	0.001***	0.002***	0.001***	0.003***	0.001***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{province-year}$	0.003***	0.003***	0.003***	0.003***	0.002***	0.004***	0.003***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.090***	0.183***	0.090***	0.182***	0.090***	0.188***	0.090***	0.188***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)
AIC	5021.238	13828.788	5007.115	13800.578	5097.929	14175.494	5099.429	14174.360
BIC	5175.022	13983.990	5168.222	13963.171	5251.713	14330.696	5260.536	14336.952
LL	−2489.619	−6893.394	−2481.557	−6878.289	−2527.965	−7066.747	−2527.714	−7065.180

Notes: 1. All continuous variables are centered around their means.
2. Robust standard errors are in parentheses.
3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Therefore, H4a on the composition effect of family income is refuted, and so is H4b the family income effect hypothesis.

For the control variables, we found that age had a negative influence on men's and women's probability of participating in the labor force. Being married had a positive influence on men's participation but the effect was negative for women's participation. This indicates that China is a patriarchal society that enforces the "male bread-winner" family model. The possession of an urban *hukou* was negative for men's participation but positive for women's. Only in models where we included the effect of schooling, the position of an urban *hukou* became negative on women's participation, indicating that the positive influence of having an urban *hukou* on women's working opportunities is very likely due to that urban *hukou* women have much higher educational attainment than women with rural *hukou*. Having preschool children had no effect on men's participation but was significantly negative for women's. This is in line with the findings about marriage, which indicates that Chinese women take on most of the household responsibility, which is an obstacle for them to perform paid work. Co-residence with parents or parents-in-law only had a significantly negative influence on men's probability of participation but had no influence on women's.

Table 2.6: Multilevel mixed-effects linear regressions: men's and women's employment on individual resources and economic development

	Model 1		Model 2	
	Men	Women	Men	Women
Economic Development	0.013	0.039*	0.013	0.039*
	(0.009)	(0.019)	(0.009)	(0.019)
Economic Development^2	−0.003	−0.004	−0.003	−0.004
	(0.002)	(0.004)	(0.002)	(0.004)
Family income	0.000*	−0.000***	0.000*	−0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
× Economic Development			−0.000	0.000
			(0.000)	(0.000)
Year controlled	Yes	Yes	Yes	Yes
Age	−0.003***	−0.003***	−0.003***	−0.003***
	(0.000)	(0.001)	(0.000)	(0.001)
Age^2	−0.000***	−0.001***	−0.000***	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.075***	−0.093***	0.075***	−0.093***
	(0.014)	(0.017)	(0.014)	(0.017)
Urban *hukou*	−0.020**	0.065***	−0.020**	0.065***
	(0.006)	(0.014)	(0.006)	(0.014)
Preschool children	−0.012	−0.115***	−0.012	−0.115***
	(0.007)	(0.012)	(0.007)	(0.012)
Coresidence	−0.062***	−0.016	−0.062***	−0.016
	(0.010)	(0.010)	(0.010)	(0.011)
Mean/intercept	0.958***	0.940***	0.958***	0.940***
	(0.025)	(0.039)	(0.025)	(0.039)
$\sigma^2_{province}$	0.001***	0.003***	0.001***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{province-year}$	0.002***	0.004***	0.002***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.091***	0.190***	0.091***	0.190***
	(0.005)	(0.006)	(0.005)	(0.006)
AIC	5177.303	14325.210	5179.189	14327.093
BIC	5331.087	14480.412	5340.296	14489.686
LL	−2567.652	−7141.605	−2567.594	−7141.547

Notes 1. All continuous variables are centered around their means.
2. Robust standard errors are in parentheses.
3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

2.6.3 Robustness checks and post-hoc results

To check the robustness of our results, we performed several additional analyses (main results are shown in the appendix Table A.5 and Table A.6). Firstly, we did a robustness

check with only people with urban *hukou*. The results are very similar to our main results (see). Secondly, we rerun all our analyses with only CGSS data, i.e., 2003-2015. After excluding data of 1996, our main results remained the same: privatization had no influence on either men's or women's employment; and economic development had a positive influence only on women's participation. The only difference is that "year" had a positive influence on both men's and women's participation. This is in line with findings in past research: women's labor force participation increased after 2003 (Wu and Zhou, 2015). After including economic development, the positive influence of year on women's participation decreased, meaning that economic development partially explained the increase in women's participation.

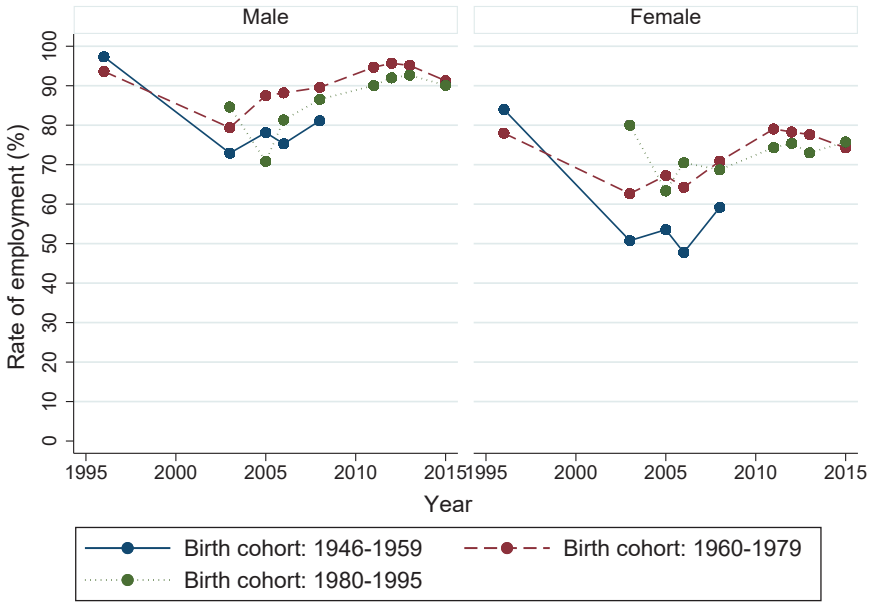
Taken together, our results are quite robust. The crucial decrease in both men's and women's employment occurred between 1996 and 2003, and after 2003, both men's and women's participation recovered. We can only partially explain the increase in women's participation after 2003 with economic development, but we cannot explain either the decrease in both men's and women's participation after 1996, nor the increase in men's participation after 2003 with privatization or economic development.

A possible explanation for not being able to explain changes in men's or women's participation with market transition processes may be the existence of a cohort effect (Qian and Hodson, 2011), which we cannot observe by pooling all men or women born in different years together. With the rapid changing economy in China, the timing of an individual's entry in the labor market is likely to play a crucial role in determining his or her working opportunity (Verhoeven et al., 2005). Therefore, we conducted a series of post-hoc analyses. We first assumed that the time an individual is about to enter the labor market is at age 20, and then divided our sample into three cohorts: those who entered the labor market before 1980, i.e., before the market transition started; those who entered during the rapid transition period: between 1980 and 2000; and those who entered after 2000. We expect the experience of each cohort in terms of working opportunity with the market transition to be the same as our hypotheses predict, because there is no clear theoretical reasoning to assume otherwise. Nevertheless, it is likely that some cohort(s) benefited or were harmed more by privatization and economic development.

Figure 2.3 depicts the trend in employment of men and women for the three cohorts separately. The three cohorts had very similar experiences with respect to their employment over time: first decreasing and later recovering. Women in the oldest cohort were harmed the most in terms of working opportunities.

Table A.2 shows that the change of the employment of the three cohorts is different over time. Men and women in the oldest cohort mainly experienced a decrease in their employment during the short period of our observation, from 1996 to 2008. For the middle cohort, i.e., those who were about to enter the labor market during the rapid reform period, both men's and women's participation dropped immediately after 1996, but soon started

Figure 2.3: Rate of employment by gender and birth cohort from 1996 to 2015



to recover. From 2011 onward, the participation of men in the middle cohort became higher than the participation rate in 1996. The participation of men and women in the youngest cohort both decreased after 2003, but women's participation soon recovered while men's participation kept decreasing until 2013. These results indicate that changes in the participation of the middle cohort men are likely to drive what we observe in the overall trend of the employment of men.

Our main conclusions regarding the influence of market transition remained the same. First, privatization had no influence on men's nor women's employment, except for the latest cohort, but the effect size is small (for men: b = -0.002, $p < 0.05$; for women: b = -0.000, $p < 0.05$, Table A.3). Second, economic development had a positive influence only on women's employment, except for the latest cohort, which resembles our conclusion from the main analysis (Table A.4). The only difference between the main analyses and the cohort specific analyses is that in the latter after controlling for privatization, the influence of year on the participation of men in the youngest cohort became smaller, indicating that the decrease in these men's participation over years was partially due to privatization.

2.7 Conclusion and discussion

In this study, we examined changes in the gender gap in employment in urban China during market transition. Previous research debated whether women are the "losers" of transition. This study shows that Chinese women were not the losers in terms of working opportunities, at least not more so than men. In general, opportunities for both men and women were harmed at the beginning of the market transition, though women's employment suffered slightly more than men's in 2005 and 2006 specifically. The gender-labor gap more or less persisted in the transition period.

We examined how privatization and economic development affected the gender gap in employment. Based on the market transition theory we expected that women would be increasingly disadvantaged with privatization because of their relatively low educational attainment and the growing importance of education in the labor market. With further privatization we expected the gender gap in educational attainment to close and subsequently also the gap in employment. We did not find this curvilinear relationship of privatization with the gender gap in employment, nor a growing importance of educational attainment. The gender gap in employment persisted, as neither men's nor women's participation changed with privatization. Therefore, this part of market transition theory was not supported.

Market transition theory also has implications for political resources. We expected the gender gap in employment to decrease with privatization because women's smaller political resources would matter less in a more privatized economy. We did not find the expected decrease in the gender gap. The importance of political resources did decrease, but only for women. This expectation from market transition theory is thus partly supported.

The same findings also partly support the state-centered approach. According to this theory the importance of political resources did not change with privatization – which is what we found for men - and consequently also the gender gap in employment would remain – which was found.

All in all, the state-centered approach received more support than the market transition theory. The Chinese labor market during the market transition was characterized by stability. Although men and women temporary lost jobs, patterns of gender inequality, educational inequality, and inequality by political capital largely remained the same.

Finally, economic theory led us expect that economic growth would allow households to survive on one income and as a consequence women would leave the labor market. With further economic growth, however, costs of living and consumption would increase as well as the number of attractive jobs for women, resulting in growing numbers of women returning to the labor market. Contrary to what we expected, women did not leave the labor market, but they profited from the economic development in terms of working opportunities. We did find the expected negative influence of family income on women's employment, but this relationship did not explain the influence of economic development nor did it change with economic development. What remains is a positive effect of economic growth on women's employment. The market transition thus did not affect the gender gap through privatization, but it did decrease the gender gap by creating jobs for women.

We are left with two puzzles after our main analyses. First, why did employment of both men and women first decrease and then recover. We could not explain these changes with the growing privatization and economic development, because neither of them are curvilinearly related with employment, and economic development affects women's employment positively. After excluding the data of 1996, we found that economic development explained partially the increase in women's participation after 2003, but why there were decreases in men's and women's employment in the period before 2003 remained unsolved.

A possible explanation is that there might be a cohort effect, which is indeed what we found some indication for. The time of entry into the labor market was influential for one's working opportunities. The middle cohort men, i.e., men who were 20 years old when the reform started, experienced dramatic fluctuations in their working opportunities. Their employment was first hit after the transition but soon recovered. In later period, their employment was even higher than at the beginning of the transition. In contrast with the middle cohort, the youngest cohort, consisting of men who entered the labor market when the reform was slowing down, mainly experienced a decrease in their working opportunity. We found that the decrease in employment of this youngest cohort can be partially explained by the growing privatization. The radical reform in state-owned enterprise started from 1994 until 2004, which led to a massive reduction of the labor force. During that period, male workers who used to work in state-owned enterprises might have joined the

private sector, either voluntarily or involuntarily. The growing privatization during that period was likely driven by the job mobility of the same men from state-owned enterprises to the private sector. This might be the reason why we did not observe a general influence of privatization on all men, but only for young men who were about to enter the labor force when the reform was slowing down. For these men, to find a job in either the public or private sector was difficult.

The decrease in women's participation (in all cohorts) at the beginning of the transition, however, cannot be explained by economic transformation. We think that the reemergence of traditional gender norms that restrict women's employment can be a possible explanation for it. Researchers have argued that in China, there has been a separation between the public, i.e., labor market, and private sphere, i.e., domestic household before the market transition (Ji et al., 2017). Before the transition, gender egalitarian policies were introduced, but only in the public sphere, such as promoting women's employment. Meanwhile, in the private sphere, traditional gender norms persisted. Scholars therefore argued that before the transition, a double exploitation of female labor existed, because women were expected to be a "good worker" and at the same time a "good wife". After the transition, it is likely that some women would choose to withdraw from the labor force, not only because the protection in the labor market disappeared, but also because of the long-existing traditional gender norms.

Second, we need an explanation for the persistent gender gap with privatization. We expected this pattern on the basis of power persistence theory, but only found support for the underlying mechanism for men: a remaining importance of political resources. For women, political resources became less important with privatization. This is in line with the reemergence of traditional gender norms in the public domain so that women's political resources mattered less for their employment.

We examined in detail the employment of men and women in urban China during the transition. Our findings may however still be tentative in certain respects. Firstly, because we use repeated cross-sectional data and not panel data, we cannot test the causal relationships at the individual level. For example, we do not know which individuals worked in private companies and whether their labor market participation developed differently from that of individuals working in the public sector.

Secondly, we assumed that individual opportunities in the labor market depend on an individual's education, party membership, and family income. But we do not know whether the decline in the employment of women actually was a matter of choice. Future research could scrutinize women's and men's preferences with regards to work and how these preferences changed with market transition.

Thirdly, social network resources have been found to be important in the Chinese labor market: knowing the "right" person and establishing a relationship, also known as Guanxi, improve one's working opportunities (Bian, 1997). There may be gender differences in the

possession of social network resources that explain the gender inequality in labor market outcomes.

Notwithstanding the limitations of our study, we contributed to the literature by systematically comparing men's and women's employment in a society under transition, and by directly measuring and examining the changes in the development of the processes of the transition both regionally and over time. Unlike previous research, which assumed that men's employment was relatively stable during the transition, we found that men's employment changed in a rather similar way as women's. Women are often portrayed as the "losers" during economic transformation, but our study show that women's working opportunities actually improved with economic development while men's did not.

LEFT BEHIND TO PLOUGH? TIME ALLOCATION OF WOMEN ON LABOR ACTIVITIES IN RURAL CHINA

Chapter 3

Siyang Kong, Ineke Maas, Marco H.D. van Leeuwen

This chapter was co-authored by Ineke Maas and Marco H.D. van Leeuwen. Kong wrote the main part of the manuscript and conducted the analyses. Maas and van Leeuwen contributed substantially to the manuscript. An earlier version of this chapter was presented at the World Congress of Sociology in Toronto (20 July 2018) and at the Dag van de Sociologie at Erasmus University Rotterdam (14 June 2018).

Abstract

Concerns exist that social inequality increased during the economic transition in China, and that especially women would be disadvantaged. Researchers, however, have focused mainly on urban areas. Using longitudinal survey data and the between-within method, we studied the time allocation of 2892 rural women from 1997 to 2015. We found that whether or not they were harmed by the out-migration of a family member depends on the prior labor activity of the out-migrant. Whereas farmers' wives increased their off-farm labor, non-farmers' wives turned away from the labor market. Also, regional circumstances determine how rural women are affected by the out-migration of a family member. A high regional out-migration level pushes left-behind famers' wives to family farms, whereas other rural women are taking advantage of the labor shortage in local enterprises. In regions with a traditional gender ideology, the left-behind women are tied more strongly to farm labor.

3.1 Introduction

In 1978, China started its economic reform, first in rural areas and later expanding to urban areas. Changing from a socialist central-planning economy to a market-oriented economy, China achieved great economic success. Many people also prospered with the transition. Yet women are considered to be on the losing team (Honig and Hershatter, 1988; Wu, 2019). After the start of the reform, many women lost their working opportunities (Wu and Zhou, 2015). Compared to their male counterparts who have mostly prospered with the transition, women are disadvantaged in obtaining lucrative jobs (He and Wu, 2018; Shu and Bian, 2003) and achieving high occupational status (He and Wu, 2017). These prior studies mainly focus on women in urban areas. Less is known regarding the socioeconomic consequences of the transition for women in rural areas.

The Chinese rural economy experienced rapid development and expansion after the start of the reform. Off-farm working opportunities, such as paid work in local enterprises and factories and self-employment, emerged (de Brauw et al., 2002). The better earning opportunities led to many women opting out from farm in favor of off-farm work (de Brauw et al., 2002). However, not all women had the opportunity to move away from agricultural work. With the transition, many people in rural areas migrated within China, mostly from villages to cities, for better life opportunities. There were around 240 million internal migrants in China in 2018 (National Bureau of Statistics of China, 2019). But women were largely left behind in rural areas by their male household members (Zhang et al., 2004). These left-behind women may be especially disadvantaged by the transition. The out-migration of a household member may have pushed women to agricultural work, thereby lowering their income (de Brauw et al., 2008). Being left behind may have also been detrimental to women's well-being, because they needed to carry out more tasks both inside and outside the household (Chen, 2005; Mu and van de Walle, 2011).

Changes in the time that the left-behind women allocated to different labor activities are a good indicator for the consequences of the massive out-migration. If the out-migration of a household member tied women to farm work, then the left-behind women accordingly increased hours working on the farm and reduced hours spent on off-farm activities. A few prior studies have investigated the existence of such an impact (Chang et al., 2011; Démurger and Li, 2013; Su et al., 2016; Xu, 2017). The findings are inconclusive. Some found no impact of household members' out-migration on the left-behind women's time use (Su et al., 2016; Xu, 2017), while others discovered that living in a household with an out-migrant was associated with more hours working on the farm (Chang et al., 2011; Démurger and Li, 2013).

In our view, there are three possible explanations for the inconsistency in previous findings. First, it may stem from the intertwined mechanisms underlying the possible impacts of out-migration of household members, namely the loss of labor impact and the influence

of (potential) remittances (Stark and Bloom, 1985). On one hand, the stay-behind women needed to compensate for the loss of male labor by working more hours on the farm. On the other hand, the remittances internal migrants sent back could help reduce the workload of the stay-behind women, because remittances could be invested to increase the efficiency of production. Therefore, women may even have decreased their working hours on the farm. The inconsistency in previous findings may be a product of variation in the relative impact of the loss of labor effect and the remittance effect.

Second, in previous studies, the interplay between macro-level changes in rural areas and whether a household experienced out-migration was largely neglected. The level of out-migration in a village was found to be positively related to women's off-farm labor force participation in that village (Chang et al., 2011). However, whereas the out-migration at the village level may have increased off-farm working opportunities for women, living in a migrant-sending household may have suppressed them, leading to inconsistent results in studies on rural women's time allocation.

Third, regional variation in gender ideology may have also influenced women's time allocation. China has a long-standing history of patriarchal Confucian ideology that restricted women to the household domain. During the period of high socialism, gender egalitarian ideology was largely supported and promoted by the state. Women were expected to join paid work, just like men. Arguably, gender equality was only stressed in the work domain. Women were still considered to be the main caregiver in the household (Ji et al., 2017). After the economic transition, gender egalitarian ideology was no longer stressed by the state. Just as happened in Eastern European countries after the collapse of socialism (van der Lippe and Fodor, 1998), traditional gender norms likely reemerged in China. Women's off-farm working opportunities may have been limited by the out-migration of a household member, and the re-appearance of traditional gender norms in a region may have amplified such an influence.

This study, therefore, aims to fill this void in the literature by studying the following questions: 1) *To what extent did the out-migration of household member(s) influence the time that stay-behind women spent on farming, local wage earning, and self-employment*?; and 2) *How did out-migration and gender ideology at the regional level interplay with the effects of out-migration of a household member*?

Building on previous research (Mu and van de Walle, 2011; Xu, 2017), we used data from an on-going panel survey, the Chinese Health and Nutrition Survey (CHNS). The CHNS data have a longitudinal structure and are rich in information on individual time use on different activities. We investigated 2892 women living in 145 rural communities of nine Chinese provinces during the period from 1997 to 2015.

3.2 Theoretical background

An often-used theory in studies on the dynamics in households from which a member out-migrated is the New Economics of Labor Migration Theory (NELM) (Stark and Bloom, 1985). This theory assumes that the decision on the out-migration of a household member is a household strategy. The aim is to maximize the joint utility of all members. It pinpoints two mechanisms of labor migration that can influence the rest of the household: the lost-labor effect and the potential increase in the household income contributed by migrants through remittances (hereafter, the remittances effect). It is often implicitly assumed that the out-migration of any household member has these two effects. We, however, argue that whether these effects occur depends on the labor activities and household position of migrants before they migrated. The heterogeneity in these two characteristics is crucial for our understanding of how the two mechanisms affect the time allocation of the stay-behind women.

We will first discuss the loss of labor mechanism and possible variation in the impact of this mechanism that is associated with the migrant's prior labor activities. We will then discuss the mechanism of remittances and its possible consequences, differentiating by the household position of migrants. In the third and last part of the theory section, we will introduce the contextual factors and discuss how they affect women's time allocation.

3.2.1 The loss of labor impact

It is straightforward that the out-migration of a household member leads to a reduction in the total supply of labor in a household. When the loss of a household member cannot be easily compensated by hiring additional labor, the remaining household members are likely to allocate more time on production activities than before, in order to compensate for the reduction of household labor. This argumentation has mainly been applied to the agricultural production process. Worldwide, scholars are concerned that the out-flow of male labor in response to urban labor market demand is likely to result in an increasing share of women in agricultural work (Da Corta and Venkateshwarlu, 1999; Pattnaik et al., 2018).

In China, before the economic reform, all rural laborers were assigned to work on collective farms under the central-planning system. All individuals were tied to agricultural work in rural areas, and migration to cities was largely prohibited. In 1978, the economic reform in rural areas started. The Household Responsibility System was introduced to replace the central-planning system in rural areas. This new system decollectivized the agricultural production process and brought households to the center of that process (Bian, 2002). Households were given the authority and decision-making power regarding, for instance, which crop to plant (de Brauw et al., 2004).

Along with the decollectivization process of agricultural activity, the off-farm sector grew tremendously. Private-owned enterprises and factories emerged. Self-employment, such as running a small shop or family business, also became common (Mohapatra et al., 2007). The off-farm sector provided rural households with better earning opportunities than farming. Many households in rural areas diversified their economic activity, with some household members plotting the family farms and others doing local off-farm work or out-migrating for off-farm employment Chen and Korinek (2010). It is, however, likely that the women who stayed behind in households with out-migrants could not profit from the emerging rural labor market and off-farm working opportunities due to the lost-labor impact. They were pushed to do unpaid farm labor and had no time and energy to diversify their earning activities. We therefore expect that *women living in households with out-migrants spend more hours on agricultural work and fewer hours on paid labor or self-employment than other women* (H1).

However, the impact of lost labor may be different depending on the prior role of the migrant. If the migrant member was a farmer before migration, then the fact that he migrated directly increases the amount of agricultural work to be done by the remaining household members. If the migrant was doing paid work or not working at all, then the lost-labor impact of this member would not be substantial. Hence, we expect that the loss of labor impact only applies to the left-behind women whose out-migrant household member was a farmer before migration: *only the left-behind women living in a household from which a farmer out-migrated (not the left-behind women in other households) spend more hours on agricultural work and fewer hours on paid labor or self-employment than other women* (H2).

3.2.2 The role of remittances

The NELM also specified another mechanism for what happens to the division of labor when a member of the family migrates; this mechanism has opposite effects compared to the loss of labor impact. It stipulates that migrants send back remittances to their stay-behind family members and that this has several beneficial impacts on the stay-behinds that may offset the lost-labor impact (Stark and Bloom, 1985). Remittances can be used as an informal form of insurance so that households can conduct relatively more risky but more profitable investments, such as starting a small business as a self-employed person (Stark, 1991). Remittances may also be used to improve the efficiency of agricultural production by enabling the purchase of machinery, better fertilizer, or pesticides (Rozelle et al., 1999; Stark, 1991). Therefore, the stay-behind women do not necessarily need to spend more time on farming when they can invest remittances in making farming more efficient or use the remittances to move out of agriculture completely. It has been found in rural China that receiving remittances directly contributed to the increase in household income, and this

also indirectly improved the agricultural productivity in these households (Taylor, Rozelle, and De Brauw 2003). We therefore formulate a competing hypothesis to H1: *women living in households with out-migrants work fewer hours on agricultural work and more hours on paid labor or self-employment than other women* (H3).

The possibility of receiving remittances is very likely dependent on the prior position of the migrant in the household. Young adult children who migrate may be less likely to send back the money they earned, whereas elder migrants who left their spouses and children behind in the rural areas are more likely to send back money (Mu and van de Walle, 2011). Hence, the remittance impact may only work for women who are left behind by their spouse or father: *only the left-behind women living in households with an out-migrant spouse or father (not the left-behind women with out-migrant children) work fewer hours on agricultural work and more hours on paid labor or self-employment than other women* (H4).

3.2.3 Migration at the regional level

Market transition theory links socioeconomic changes at the macro level to the life opportunities of individuals in societies under transition. Its main argument is that when a society transforms to be market-oriented, market rules would overtake political power in controlling and redistributing resources (Nee, 1989, 1996). This process is argued to be beneficial for women's off-farm working opportunities in rural China (Matthews and Nee, 2000). In the period of high socialism and central-planning, there were public-owned rural industries that could provide off-farm working opportunities for women. However, these opportunities were allocated by local officials, and rural women lacked the ties to these officials that could be used to secure off-farm employment (Matthews and Nee, 2000). As a consequence, the majority of rural women were doing agricultural work on collective farms even though there were off-farm working opportunities in the local area. After the reform, a rural labor market gradually developed, and ties to local officials should no longer matter in finding off-farm employment. Hence, rural women should have more chances to work off-farm (Matthews and Nee, 2000).

However, after the development of a rural labor market, employers in rural areas in China might still prefer men over women. This was mainly because rural men were on average better educated than women as rural families invested more in the education of sons compared to daughters (Matthews and Nee, 2000; Wu, 2012). Therefore, it is argued that under the transition, women's off-farm working opportunities only increased with the exodus of male labor to cities (Matthews and Nee, 2000). With the out-migration of labor from villages to cities, local enterprises faced a labor shortage. When it became difficult to hire a man, these enterprises are expected to have recruited women, whom they might not have hired before.

Thus, we expect, in line with previous research, that in places with a high level of out-migration, relatively many women work for local enterprises. However, according to the loss-of-labor assumption, women living in households with out-migrant members were not able to move out of agriculture because they needed to compensate for the lack of male labor by working more hours on their farm. The difference between women with and without an out-migrant member can thus be expected to be larger in these places. In other words, we expect that H1, which assumes that *the left-behind women work more hours on agricultural work and fewer hours on paid labor or self-employment than other women*, is more true in regions with a high level of out-migration. Therefore, *the loss-of-labor impact of living in households with out-migrants is stronger in villages with a higher out-migration level* (H5).

The remittances hypothesis states that women living in households with out-migrants are more able to join off-farm work than others because of the remittances migrants send back. In communities with a higher level of out-migration, the left-behind women, therefore, may be more able to switch to local off-farm work, including self-employment, using remittances. Hence, we expect that H3, stating that *women living in households with out-migrants work fewer hours on agricultural work and more hours on paid labor or self-employment than other women*, is more true in communities with a high level of out-migration. Hence, *the remittance impact of living in households with out-migrants is stronger in villages with a higher out-migration level* (H6).

3.2.4 Traditional gender values at the regional level

China has a long-standing history of patriarchal gender ideology Ji et al. (2017). In this cultural context, the "right" behavior is for women to focus on the household and for men to work outside Chen (2004); Ji et al. (2017). For example, though weakening, it is still common that a married woman moves into her husband's family to take care of the parents-in-law (Cheng, 2018; Yu and Xie, 2018). If the primary role of a (married) woman is that of an informal caregiver in the household, then her incentive to diversify her earning opportunities may not be strong nor supported by society. The strength of patriarchal values, however, differs between regions (as will be shown later). Some regions are more conservative than others.

In a patriarchal village, an allocation of household labor in which the man does paid labor outside the household and the woman works at home is considered conventional and proper. When men out-migrated, however, it is the responsibility of the left-behind women to maintain the family farm (Fan, 2008). Maintaining the family farm is not seen as working outside the household, but as part of the household chores that women should do. Therefore, the left-behind women living in patriarchal communities are more likely to be restricted to working on family farms. Combining gender ideology theory with the

loss-of-labor impact, we expect that *the loss-of-labor impact of living in households with out-migrants is stronger for women in villages with stronger patriarchal values* (H7).

The magnitude of the impact of remittances may also depend on the regional gender ideology. Beforehand, we argued that remittances can improve the household agricultural productivity and hence help women diversify their earning opportunity. In communities with traditional gender norms, however, women are encouraged to work less in the market and focus primarily on household labor and care. Therefore, even with an extra amount of income received from the out-migrant, the stay-behind women may still follow the traditional norms and mainly perform unpaid household and farm work. We therefore expect that *the remittance impact of living in households with out-migrants is weaker for women in villages with a higher level of patriarchal values* (H8).

It has also been argued that remittances may have a negative income effect on women if women's labor force participation takes place out of necessity and not of choice. With remittances, the left-behind women may withdraw from the labor market completely, because it is no longer necessary for them to work Amuedo-Dorantes and Pozo (2006); Taylor et al. (2003). We, however, argue that such an impact of remittances may not apply to rural China. Due to the household registration (*hukou*) system, it is difficult for rural migrants to permanently settle in cities (Duan et al., 2013). This means that the income source from out-migrants may be only short-term. Sooner or later, the out-migrants return to rural areas. Hence, we expect the left-behind women to stay in the labor force even with remittances. An overview of our hypotheses can be found in Table3.1.

Table 3.1: An overview of all hypotheses

Loss of labor hypotheses:	
H1	Women living in households with out-migrants spend more hours on agricultural work and less hours on paid-labor or self-employment than other women.
H2	Only the left-behind women living in a household from which a farmer out-migrated (not the left-behind women in other households) spend more hours on agricultural work and less hours on paid-labor or self-employment than other women.
Remittances hypotheses:	
H3	Women living in households with out-migrants work less hours on agricultural work and more hours on paid-labor or self-employment than other women .
H4	Only the left-behind women living in households with an out-migrant spouse or father (not the left-behind women with out-migrant children), work less hours on agricultural work and more hours on paid-labor or self-employment than other women.
Economic transition hypotheses:	
H5	The loss labor impact of living in households with out-migrants is stronger in villages with a higher out-migration level.
H6	The remittance impact of living in households with out-migrants is stronger in villages with a higher out-migration level.
Gender ideology hypotheses:	
H7	The loss of labor impact of living in households with out-migrants is stronger for women in villages with stronger of patriarchal value.
H8	The remittance impact of living in households with out-migrants is weaker for women in villages with stronger patriarchal value.

3.3 Data and operationalization

3.3.1 Data

We used data from the China Health and Nutrition Survey (CHNS). It is an ongoing panel survey that started in 1989. Subsequent waves were carried out in 1991, 1993, 1997, 2000, 2004, 2006, 2009, 2011, and 2015 (the latest available) in nine provinces: Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Shandong, Liaoning, and Heilongjiang. The sample selection in each province followed a multi-stage, random cluster process. Both rural and urban neighborhoods were selected. To obtain the rural sample, counties in the nine provinces were firstly stratified by income, and then four counties in each province were selected using a weighted sampling scheme. Within the counties, villages and townships were selected randomly. The same households are followed as long as possible, but households that out-migrate are not followed. The follow-up rate is around eighty percent in each wave . From 1997 onward, new households were selected following the same procedure to replace households that dropped out.

The CHNS collected detailed information on different levels. For each household member, the instrument asked for basic demographic information and time use on several activ-

ities. Although the CHNS data contain rich information at both the individual and household level, the survey is not originally designed to study labor migration. Information on individuals' current living situation is available in all waves ("whether or not a household member is currently living at home"), but only from wave 1997 onward is detailed information on why a household member is not at home asked. We therefore selected members who were at home in wave 1993 and examined the influence of living in a migrant household starting from wave 1997.

We started with 123041 observations and 36691 individuals, and we subsequently did several more selections. First, we restricted our analyses to observations in rural areas (villages and towns; hereafter: villages), which left us with 77033 observations and 21383 individuals. Second, because our topic is labor activity, we restricted our sample to observations of people aged 16 to 65 in each wave (56699 observations and 16743 individuals remained). We then removed people not at home for educational or other reasons (0.35% and 0.2% of the remaining observations, respectively), and people who are not core household members, i.e., not head of the household, spouse, parents, children, and children-in-law (3.9% of the remaining observations). Third, in order to study the lagged influence of living in a migrant household on women's time allocation accounting for the migrant member's labor activity prior to migration, we select individuals who are followed at least in three waves, which left us with 35526 observations and 6123 individuals. In the final step, we kept only female observations. We are left with 15301 observations and 2892 individuals, who lived in 145 villages.

3.3.2 Operationalization

Dependent variable

Our aim is to examine the time allocation of non-migrants on three labor activities: agriculture, local off-farm paid work (hereafter: paid work), and self-employment or family business (hereafter: self-employment). In each survey, it is asked for every household member how many hours per day and how many days per week they spent on average on each specific production activity in the last year. Agricultural activities include gardening, farming, fishing, and livestock raising. Paid work includes all occupations that are neither agricultural nor self-employed. Self-employment includes running a family or individual business in commerce, service, manufacturing, paddler, construction, and other sectors except farming. We summed all the hours each individual worked within a certain category of labor activity. For example, if an individual reports hours working on gardening and farming, we add these hours together as the average weekly hours this person worked in agriculture. We excluded observations with extreme values that are 1.5 interquartile above the third quartile of the distribution (i.e., 105 hours per week on the farm; 101 hours per week on local paid work; 154 hours per week on self-employment). Descriptive statistics

of all our variables for the left-behind women and women who never lived in households with out-migrant are shown separately in Table 3.2.

Table 3.2: Descriptive statistics by household migration status

Out-migration household		No	Yes
Dependent variables: average weekly hours work on			
Agriculture			
	Mean	19.20	17.40
	S.D	23.90	20.50
Paid-work			
	Mean	16.60	20.90
	S.D	23.60	23.20
Self-employment			
	Mean	5.19	3.52
	S.D	17.10	14.20
Independent variables:			
Farmer migrated		0.00	0.29
Children migrated		0.00	0.46
Regional migration level			
	Mean	0.07	0.23
	S.D	0.10	0.13
Regional patriarchy			
	Mean	1.49	1.40
	S.D	1.02	0.97
Control variables:			
Return migration		0.00	0.15
Education level			
None		0.29	0.32
Primary school		0.27	0.29
Secondary school		0.31	0.30
High school		0.09	0.06
Technical or vocational college		0.04	0.01
University or above		0.01	0.00
Married		0.93	0.93
Age			
	Mean	44.10	48.00
	S.D	10.60	10.50
Han Chinese		0.85	0.84
Rural *hukou*		0.78	0.89
Year			
1993		0.12	0.00
1997		0.14	0.00
2000		0.16	0.07
2004		0.14	0.11
2006		0.13	0.21
2009		0.12	0.24
2011		0.11	0.19
2015		0.08	0.18

Continued on next page

Table 3.2: (continued)

Province		
Liaoning	0.10	0.09
Heilongjiang	0.11	0.02
Jiangsu	0.11	0.15
Shandong	0.13	0.05
Henan	0.12	0.12
Hubei	0.10	0.17
Hunan	0.11	0.09
Guangxi	0.12	0.17
Guizhou	0.11	0.13
N.Observation	12,890	2,411
N.Individual	2892	
N.Village-Year	1160	

Notes: 1. Households with no out-migration are households that have never had any member out-migrate.

Independent variables

Our key explanatory variable is *household out-migration status*. Before determining women's household migration status, we first need to define internal migrants in our sample. The National Bureau of Statistics China (NBSC) defines an internal migrant as someone who has left the registered place of residence for employment purposes for at least six months. Following this definition, and previous studies that used the same data (Mu and van de Walle, 2011; Xu, 2017), we treat persons as out-migrants if they left home for employment reasons between two CHNS waves. The time interval between two waves is around three to four years; we, therefore, may underestimate the level of out-migration, since individuals may out-migrate and return to their households within three to four years. It is, however, increasingly the case that internal migrants stay in their destinations for a longer period. Using the 2011 Chinese census data, Duan et al. (2013) found that around forty percent of the internal migrants had been living in their place of destination for at least five years.

We used the lagged out-migration status of other household members to indicate whether or not the woman is left behind. The household out-migration status is defined as "1" if there was at least one out-migrant member in the previous wave, and "0" if there was none. Since there is no information on the exact time when the out-migration occurs, the use of lagged household out-migration can help us deal with possible reverse causal relations between the out-migration and women's time allocation—namely that changes in one's time allocation can happen simultaneously with or before the out-migration of a family member (Mu and van de Walle, 2011).

Farmer out-migrant. Out-migrant members' prior activity before migration is obtained via the information on primary labor activity in the previous wave. For example, for all

internal migrants in wave 2000, we track their activities in wave 1997. Hence, we assign "1" to households with migrant member(s) who used to be a farmer in the previous wave, and "0" to households either with no out-migration or with migrant member(s) who did non-agricultural work.

Children out-migrant is obtained via combining information on out-migration status at the household level and household position. In each survey, household members were asked to state their relationship to the head of the household. Hence, "1" is assigned to households with migrant members who are children of the head of the household, and "0" is assigned to households with either no out-migration or with out-migrant members who are not children.

Regional migration level is an aggregated value of lagged individual out-migration at the village level. In the data, a unique identification code was assigned to each village in which the respondents are living. The level of out-migration for a respondent in a certain village is calculated as the proportion of out-migrants in that village in the previous wave. It ranges from 0 to 0.68.

Regional patriarchal level is measured by the average age difference between spouses in a village. We subtracted wife's age from husband's age in each family. The age difference thus is positive when the husband is older. We then aggregated this number to the village level. This measure has been used before in cases where a direct measure on gender ideology is not available (see for example Carmichael 2011; Dilli et al. 2019. It is built on the assumption that the division of power in a household is more equal when partners are of similar age. The values of this variable range from -2 to 6.7. The larger the value, the more traditional the gender ideology is assumed to be in the village.

Control variables

Women's characteristics such as their own migration experience (return migration), level of education, age, marital status, household registration type, and ethnicity are controlled. We also controlled for the effect of time and location by adding dummy variables for year and province in our model.

3.4 Analytical strategy

We used the hybrid model or between-within method to analyze our data (Allison, 2009). Fixed-effects models are widely recognized as a superior method to analyze panel data, because they control for all observed and unobserved time-invariant heterogeneity at level two (in our case, the individual level) (Allison, 2009). However, restricted by its strength, the fixed-effects model fails in examining any variables that do not change within individuals (Schunck, 2013). This drawback is substantial in our study. If a woman always lives

in a household with out-migrants during our observation period, she would be dropped from the analysis if we used fixed-effects models, and the same is true for a woman who has no out-migrant household members at all. We aim to examine not only women who experienced the out-migration of a family member during our observation period, but also the difference between women who live in households with out-migrants and those who do not.

We therefore used the between-within method, which incorporates features of fixed-effects models in a random-effects model. In the between-within models, independent variables are decomposed into two parts: the mean of a variable of the same individual over all observations, and the deviation of the mean at each time point (Allison, 2009). The dependent variable is not transformed. As argued by Allison (2009), this decomposition method can also be used on dichotomous variables. In addition to the decomposed independent variables, we also added time-invariant individual characteristics as controls and analyzed all components in a random-effects model. The between-within method is also easy to incorporate in a cross-classified data structure. In our data, observations are nested within individuals. At the same time, each observation is also nested in the combination of the village and year.

We analyzed three labor activities separately: agriculture, paid work, and self-employment. We started with an intercept-only model as the baseline model in which we only included a random intercept. Using the baseline model, we can observe the variance at different levels and calculate the intra-class correlation. We then added year and province as dummy predictors that have the same coefficient for each individual and village-year combination. We also added controls of individual characteristics in this model. In the third model, we included household migration dynamics—out-migration at the household level (Model 3), whether the migrant was a farmer (Model 4), and whether children migrated (Model 5)—separately. Following Allison (2009) and Schunck (2013), the between-within models we examine in this step can be expressed as:

$$\begin{aligned} Hours_{ijt} = {} & \beta_{00} + \beta_{10}(HHmigration_{ijt} - \overline{HHmigration}) \\ & + \beta_{20}(FarmerMigrate_{ijt} - \overline{FarmerMigrate}) \\ & + \beta_{30}(ChildMigrate_{ijt} - \overline{ChildMigrate}) \\ & + \beta_{40}\overline{HHmigration} + \beta_{50}\overline{FarmerMigrate} + \beta_{60}\overline{ChildMigrate} \\ & + \beta_{70}Yeardummy + \beta_{80}Provincedummy \\ & + \gamma C_i + \mu_i + \mu_j + \varepsilon_{ij} \end{aligned} \tag{3.1}$$

, in which $Hours_{ijt}$ is the average weekly hours working on a labor activity (agriculture, paid work, or self-employment) for individual i living in village j at time t. β_{00} is the intercept, which is the average hours working on a labor activity over all observations. β_{10},

β_{20}, and β_{30} are the average within-individual effects of living in a migrant household, having a migrant member who was previously a farmer, and having children who migrate. These are the coefficients that capture the "causal" relation between living in a household with an out-migrant and changes in women's time allocation, which is the focus of this study. β_{40}, β_{50}, and β_{60} are the average between-individual effects of living in a migrant household, having a migrant member who was once a farmer, and having children who migrate. The between-individual effects mainly capture the selection effects that some households may be more or less likely to have an out-migrant member and that is related to women's time allocation. β_{70} and β_{80} capture the time and province effects, and γ represents the effects of time-invariant control variables. There are three error terms in the model: μ_i is the individual-level error variance that captures the correlations between observations that are nested within the same individual, μ_j is the error variance at the village-year level, and ε_{ij} is the residual variance at the observational level.

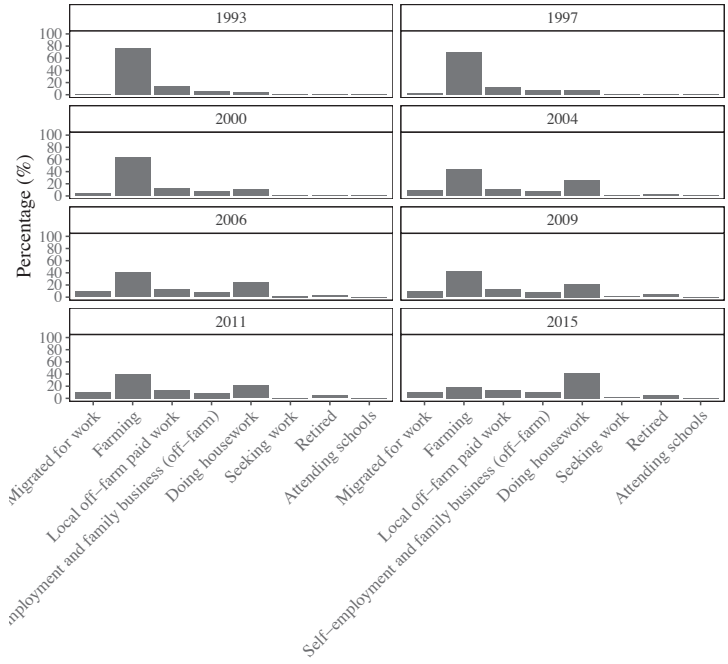
In the final steps, we added village-level characteristics and the interaction between village characteristics and household out-migration consecutively. We first created several new variables that are the interaction terms between the raw village-level characteristics and household out-migration status. We then used the same decomposition method on the village-level characteristics and the interaction terms.

3.5 Results

3.5.1 Descriptive results

Figure 3.1 depicts the percentage of each current activity that women do compared to all activities in each year for all women in our data before selection. In line with previous studies de Brauw et al. (2002), we see a pattern of women moving out of agriculture over the years. In 1993, around eighty percent of women were farming, while in 2015, the proportion of female farmers had decreased to around twenty percent. Women's participation in local wage earning and self-employment has remained at the same level over the years. Around twenty percent of women worked off-farm on paid work, and around ten percent were self-employed. The proportion of women in out-migration increased somewhat over the years, from less than five percent in 1997 (in 1993 there was no information on individual out-migration status) to ten percent in 2015. The figure also shows that rural women were increasingly doing housework. In 1993, less than ten percent of women were housewives, while in 2015, this number increased to around forty percent. These results indicate that rural women are moving away from farm work to perform domestic tasks.

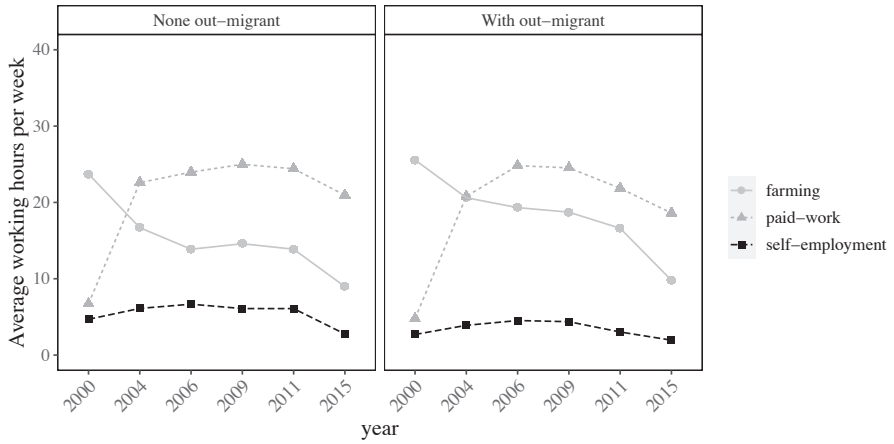
Figure 3.1: Distribution of current labor activity before data selection, for all women aged 16-65



Note: 1. Information on out-migration is available from 1997 onward. 2. The percentage of the activity that women do.

As for women's time allocation on different activities, Figure 3.2 shows the average hours per week women worked on farming, paid work, and self-employment, separately for those who lived in households with out-migrants and those who did not. Similar to the patterns we observed in Figure 3.1, the average hours all women worked on the farm decreased over the years. The decrease is steeper for women without any out-migrant family member than for the left-behind women. Both women with and without an out-migrant family member experienced a sudden increase in their time spent on local paid work after 2000. This may be due to the start of a series of reform policies encouraging private ownership in 2003 that largely increased the earning opportunity of women (and men) in local enterprises. After 2004, women's paid work experienced a bell-shaped change. For women living in households with no out-migrant, the hours they spent on paid work increased slowly after 2004 and started to decrease after 2011. For women with an out-migrant family member, their time spent on paid work started to decrease already in 2006. The time spent on self-employment did not change much over the years for women living

Figure 3.2: Time allocation of women on labor activities by household out-migration status



with and without an out-migrant.

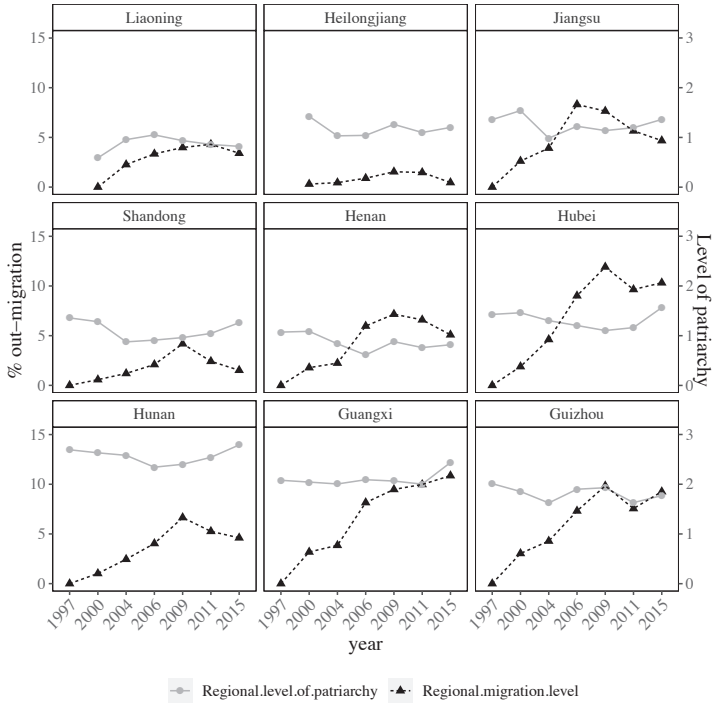
Figure 3.3 shows the distribution of regional-level out-migration and patriarchal values over the years by province. Overall, there is not much change in gender ideology over time, but the strength of patriarchal values differs between provinces. Provinces in southwest China (Hunan, Guizhou, and Guangxi; see Figure 3.3 and 3.4) have a more traditional gender ideology than the other provinces. The level of out-migration also differs substantially between provinces. Guangxi experienced the most continuous increase in the level of out-migration over the years, from around two and a half percent in 2000 (in 1997 there is no lagged migration information) to around eleven percent in 2015. It is located in the southwest of China and it is adjacent to Guangdong province, which is the province with the most internal migrants (Xu 2017). Heilongjiang is the only sampled province with a steadily low level of out-migration over the years, probably because of its distance away from more developed regions.

3.5.2 Women's time use on agriculture, paid-work, and self-employment

Table 3.3 presents the results for women's average working hours per week on the farm. Model 1 is the baseline model, from which we calculated that the intra-class correlation at individual level is 0.09 ($\sigma_{ij}/(\sigma_{ij} + \sigma_j + \sigma_{ijt})$). This means that nine percent of the total variance is between persons. Likewise, forty-one percent of the error variance is at the village-year level.

We continue with the within-individual fixed effects. Model 3 in Table 3.3 shows that household out-migration status has no influence on women's time allocation on the farm, after controlling for selection effects by separating within- and between-individual effects. This means that being left behind does not significantly change the time spent by women

Figure 3.3: Average regional out-migration level and level of patriarchy by year for each surveyed regions



on agriculture. Adding the out-migrant member's previous labor activity before migration did not change the results, either (see Model 4). After we added the household position of the out-migrant member (Model 5), the impact of living in households with out-migrants is still insignificant. This indicates that the remittances' impact on women's time allocation on the farm is also not present.

Table 3.3: Between-within model regressing weekly hours on farming as a function of household out-migration dynamics and community characteristics

Farming	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			0.566	0.609	0.609	0.094	0.642
			(0.568)	(0.638)	(0.831)	(0.717)	(0.570)
farmer migrated				−0.079			
				(0.909)			
children migrated					−0.137		
					(0.979)		

Continued on next page

Table 3.3: (continued)

regional migration level						−8.980*	
						(5.250)	
× out-migration						7.840*	
						(4.550)	
regional patriarchy							−1.290*
							(0.764)
× out-migration							0.938*
							(0.544)
Between individual:							
out-migration			1.107	0.118	−2.327	1.569	0.944
			(1.032)	(1.166)	(1.583)	(1.398)	(1.032)
farmer migrated				4.450*			
				(2.421)			
children migrated					5.052***		
					(1.769)		
regional migration level						30.848***	
						(6.740)	
× out-migration						−16.292*	
						(9.250)	
regional patriarchy							−2.207***
							(0.524)
× out-migration							−0.311
							(1.002)
Controls added	NO	YES	YES	YES	YES	YES	YES
Year dummy controlled	NO	YES	YES	YES	YES	YES	YES
Province dummy controlled	NO	YES	YES	YES	YES	YES	YES
Mean/intercept	16.664***	22.270***	22.297***	22.358***	21.921***	25.910***	21.662***
	(0.503)	(2.059)	(2.058)	(2.056)	(2.062)	(2.229)	(2.064)
Random effects							
$\sigma_{individual}$	49.770	42.987	42.914	42.966	42.492	43.545	42.869
	(7.055)	(6.556)	(6.551)	(6.555)	(6.519)	(6.599)	(6.548)
$\sigma_{village-year}$	198.91	106.295	106.201	105.666	106.373	102.244	105.083
	(14.104)	(10.310)	(10.305)	(10.279)	(10.314)	(10.112)	(10.251)
$\sigma_{residual}$	247.44	249.041	249.098	249.178	305.520	248.831	248.850
	(15.730)	(15.781)	(15.783)	(15.794)	(15.785)	(15.774)	(15.775)
Number of observations				11,974			
Number of individuals				2785			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand-mean. Full results are shown in Table B.1.
4. *p<0.1; **p<0.05; ***p<0.01 (two-sided).

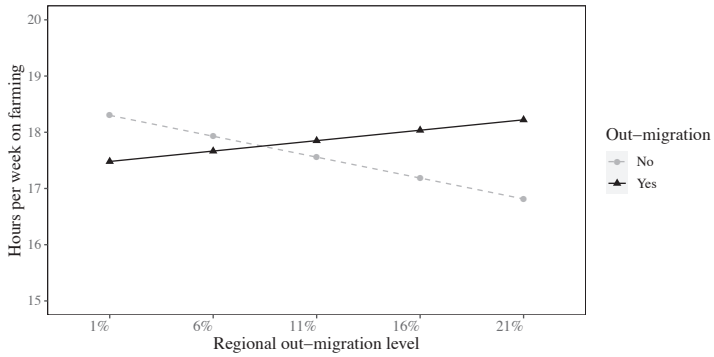
Figure 3.4: Map of the CHNS sampled regions

Note: Map obtained from the China Health and Nutrition Survey website

To summarize the results in Model 3, 4, and 5, being left behind has no significant influence on women's time allocation on farming. There is no evidence of a lost-labor impact, nor of a remittances impact, on women's time allocation on the farm. Therefore, the first four hypotheses on the loss-of-labor effect and remittances' effect on women's time allocation on farming are rejected.

As for the influence of contextual characteristics, results in Model 6 show that there is no main effect of household out-migration, but a significantly positive interaction effect between household out-migration and the regional out-migration level appears (b = 7.840, p-2s < 0.1). Figure 3.5 depicts this interaction effect. For the left-behind women living in villages with an average level of out-migration, the out-migration of a family member does not change their hours spent on the farm. If the left-behind woman is living in a village with a ten percent above average level of out-migration, the out-migration of a family member will push her towards agriculture, i.e., she will be working almost one hour (0.09+0.784) more per week on the farm compared to other women living in the same village. On the contrary, in a village with a ten percent lower than average level of out-migration, the left-behind women will spend less time on the farm (0.09−0.784) than other women. These results indicate that in communities with a low level of out-migration, having an out-migrant member can actually help women move time away from agricultural work. In communities with a higher level of out-migration, however, the lost-labor impact is amplified by the level of out-migration at the village level. The effects are, however, relatively small, indicating that women do not take up the complete set of tasks of the migrant.

Figure 3.5: Weekly hours women spend on the farm by regional out-migration level and household out-migration status



Note: Point estimations are based on the results of Table 3.3 Model 6.

Model 6 also shows that in line with the labor shortage argument, for women with no out-migrant member, the level of village out-migration has a significantly negative impact on the hours she spends on the farm (b = −8.980, p-2s < 0.1). These results suggest that

the women who are not living in a household with out-migrants can take advantage of the labor shortage in local enterprises, whereas the left-behind women are tied to the family farm.

Therefore, the hypothesis that the lost-labor impact is stronger in communities with a higher out-migration level (H5) is supported, whereas the hypothesis on the strengthened remittance impact in communities with more out-migration (H6) is refuted.

Model 7 shows that the main effect of having a migrant member is not significant but that there is a significantly positive interaction effect between household out-migration and the strength of patriarchal values in the village (b = 0.938, p-2s $<$ 0.1). This indicates that in communities with an average level of patriarchal values, the left-behind women do not spend more or fewer hours on the farm than other women, whereas in communities with more traditional gender values, i.e., the age difference between husbands and wives is one year more than the average age difference (1.5 years, see Table 3.2), the left-behind women will spend 1.5 hours per week more on the farm (0.64+0.94) than other women. In communities with relatively modern gender values, the left-behind women will spend less time on the farm (0.64−0.94). This suggests that in communities with modern gender values, only the remittances effect is present, or the remittances have more than fully counteracted the loss-of-labor impact. Only in communities with traditional values where the impact of remittances is weakened, do we observe that the left-behind women work more hours on the farm.

Therefore, the hypothesis that the loss-of-labor impact is amplified by a traditional gender ideology (H7) is supported. Our last hypothesis (H8), which argues that the remittances help the left-behind women move away from agricultural work but that such an impact is weaker in communities with traditional gender values, is supported.

Model 7 also shows that women with no out-migrant member actually benefit from living in communities with a traditional gender ideology in terms of working fewer hours on the farm (b = −1.290, p-2s $<$ 0.1), and though less so, living in traditional communities also helps women with an out-migrant member to move away from agriculture (−1.29+0.94). This is unexpected.

The between-individual effect of living in a household from which a farmer out-migrated is positive (Model 4: 4.450−0.118), but the impact of living in households from which a non-farmer migrated is not significant. As stated in the methods section, the results indicate a selection effect: a farmer who is living in a household in which a woman spends more hours on farm work is more likely to migrate. This can be because in these households, women are taking a large share of the farming responsibility, i.e., women are farmers too, so that the other farmers in the household can leave for other types of employment. Model 5 shows that the between-individual impact of having out-migrant children is positive (5.052−2.327). This probably means that in households where the woman works more hours on the farm, the children are more likely to migrate. This can be because these

households are relatively poor so that the children have a strong incentive to leave. It has been documented that the economic situation of a household is associated with the likelihood of out-migration: young people from poor families are more likely to migrate (Zhao, 1999).

Table 3.4 presents changes in women's working hours on off-farm paid labor. Results in Model 3 show no significant influence of out-migration on the hours of paid work women do. However, when we included migrants' prior activity in Model 4, we found that only when the out-migrant member was doing farm work did his migration significantly increase women's hours spending on paid work (2.657−1.214). Being left behind by members who are not a farmer decreases the hours women spend on off-farm paid work (b = −1.214, p-2s $<$ 0.1). If we combine this with the results from Table 3.3, we can conclude that if a woman is left behind by an out-migrant member who used to do farm work, she will shift more hours to off-farm work, instead of compensating for the lost labor of this farmer member by working more hours on the farm. We expected that the loss of labor impact should be true especially for households with out-migrant members who were farmers, because these households are likely to be living upon agricultural work. However, we observed the exact opposite. It may be that when the primary person who was responsible for the household farm out-migrated, the stay-behind woman then abandoned the farm land and shifted to paid work, possibly with the financial assistance of remittances. Migrants' household position, however, has no influence on women's time allocation on paid work (Model 5).

Table 3.4: Between-within model regressing weekly hours on paid-work as a function of household out-migration dynamics and community characteristics

Paid-work	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			−0.359	−1.214*	−1.075	−0.678	−0.366
			(0.643)	(0.723)	(0.942)	(0.809)	(0.645)
farmer migrated				2.657***			
				(1.029)			
children migrated					1.145		
					(1.111)		
regional migration level						10.295**	
						(5.169)	
× out-migration						0.130	
						(5.113)	
regional patriarchy							1.021
							(0.734)
× out-migration							0.141
							(0.609)
Between individual:							

Continued on next page

Table 3.4: (continued)

out-migration			−2.447*	−2.045	−2.955	0.008	−2.452*
			(1.261)	(1.428)	(1.929)	(1.696)	(1.262)
farmer migrated				−1.219			
				(2.939)			
children migrated					0.655		
					(2.161)		
regional migration level						−1.275	
						(7.372)	
× out-migration						−19.330*	
						(11.066)	
regional patriarchy							−0.292
							(0.533)
× out-migration							0.854
							(1.216)
Control variables added	NO	YES	YES	YES	YES	YES	YES
Year dummy controlled	NO	YES	YES	YES	YES	YES	YES
Province dummy controlled	NO	YES	YES	YES	YES	YES	YES
Mean/intercept	18.822***	−0.414	−0.453	−0.460	−0.477	−0.658	−0.677
	(0.460)	(2.087)	(2.088)	(2.088)	(2.094)	(2.284)	(2.101)
Random effects							
$\sigma_{individual}$	111.00	81.962	81.756	81.926	81.759	81.822	81.865
	(10.540)	(9.053)	(9.042)	(9.051)	(9.042)	(9.046)	(9.048)
$\sigma_{village-year}$	129.800	76.191	76.343	76.432	30.973	45.637	76.354
	(11.390)	(8.729)	(8.737)	(8.735)	(8.743)	(8.697)	(8.738)
$\sigma_{residual}$	313.010	323.114	323.114	322.884	323.114	323.085	323.090
	(17.692)	(17.975)	(17.975)	(17.975)	(17.975)	(17.975)	(17.975)
Number of observations				12,015			
Number of individuals				2784			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand-mean. Full results are shown in Table B.2
4. *p<0.1; **p<0.05; ***p<0.01 (two-sided).

Model 6 and 7 in Table 3.4 show again that the out-migration of a household member does not change the time allocation of women on paid work, regardless of the out-migration level and gender ideology in a village. The main effect of village out-migration level is significantly positive. This means that both for women with and without an out-migrant member, the higher the out-migration level (b = 10.295, p−2s < 0.05) of a village is, the more hours she will spend on paid work.

Table 3.5 shows the impact of household out-migration on women's time use on self-

employment. Overall, the left-behind women do not work more hours on self-employment than other women as indicated by the absence of an impact of household out-migration (Model 3, 4, and 5). This is true regardless of the village out-migration level or patriarchal level (Model 6 and 7). At the between-individual level, however, the impacts of out-migration of a household member is significantly negative with effect sizes around −4 to −5 in all models (Model 3 to Model 7). Similar to the results in Table 3.3, these negative impacts of out-migration at the between-individual level probably indicate that in households where women work fewer hours on self-employment, household members are more likely to migrate. To summarize, among our hypotheses on the influence of out-migration on women's time allocation, we found more support for the remittances impact than the loss-of-labor impact.

Table 3.5: Between-within model regressing weekly hours on paid-work as a function of household out-migration dynamics and community characteristics

Self-employment	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			−0.047	−0.102	0.173	−0.169	−0.024
			(0.466)	(0.522)	(0.683)	(0.584)	(0.468)
farmer migrated			0.120				
				(0.745)			
children migrated					−0.346		
					(0.804)		
regional migration level						3.073	
						(2.888)	
× out-migration						−0.248	
						(3.601)	
regional patriarchy							−0.045
							(0.389)
× out-migration							0.269
							(0.433)
Between individual:							
out-migration			−5.180***	−3.457***	−4.597***	−5.412***	−5.152***
			(1.133)	(1.290)	(1.717)	(1.521)	(1.135)
farmer migrated				−7.273***			
				(2.613)			
children migrated					−0.842		
					(1.941)		
regional migration level						−13.403**	
						(5.773)	
× out-migration						11.545	
						(9.618)	
regional patriarchy							0.172
							(0.386)
× out-migration							−0.185

Continued on next page

Table 3.5: (continued)

							(1.083)
Control variables added	NO	YES	YES	YES	YES	YES	YES
Year dummy controlled	NO	YES	YES	YES	YES	YES	YES
Province dummy controlled	NO	YES	YES	YES	YES	YES	YES
Mean/intercept	5.211***	4.805***	4.740***	4.670***	4.789***	3.326**	4.802***
	(0.263)	(1.471)	(1.467)	(1.466)	(1.473)	(1.607)	(1.478)
Random effects							
$\sigma_{individual}$	106.410	102.329	101.421	101.064	101.482	101.352	101.497
	(10.316)	(10.116)	(10.071)	(10.053)	(10.074)	(10.067)	(10.075)
$\sigma_{village-year}$	12.35	10.194	10.096	10.027	10.084	10.072	10.162
	(3.334)	(3.193)	(3.178)	(3.514)	(3.176)	(3.174)	(3.188)
$\sigma_{residual}$	176.410	176.240	176.262	176.320	176.278	176.254	176.259
	(13.282)	(13.276)	(13.276)	(13.279)	(13.277)	(13.276)	(13.276)
Number of observations				12,088			
Number of individuals				2786			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand-mean. Full results are shown in Table B.3.
4. *p<0.1; **p<0.05; ***p<0.01 (two-sided).

3.5.3 Post-hoc analyses

In the first post-hoc analysis, we included a different household out-migration indicator at the within-individual level: whether or not the woman has ever lived in a household with an out-migrant. If the left-behind women used the remittances to shift away from farm to off-farm work, the impact of remittances will probably remain after the out-migrant returns. They will not shift back to farm work once they have started working in an off-farm sector. We expect that such an irreversible influence is, however, not the case for the loss-of-labor impact. Irreversible influences may have mistakenly been captured by the between-individual level effects that we observed.

Results in Table B.4 show that for farm work and the two forms of off-farm work, ever having been a left-behind woman has no impact on time allocation. This indicates that the remittances impacts were probably not enduring after migrants returned to the household.

In the second post-hoc analysis, we examined changes in women's time allocation on domestic tasks. We assumed that the negative income effect, which suggests that the left-behind women will leave the labor force because of the remittances, is not true for rural women in China. However, we do observe in the descriptive figure that there is a trend of

women moving away from farm work towards domestic tasks.

As for the domestic tasks, information on the average hours per day women spend on grocery shopping, cooking, cleaning, doing laundry, and childcare are available in the survey. Results in Table B.5 show that the stay-behind women work more hours on domestic tasks than other women (Model 3: b = 0.184, p-2s $<$ 0.01). Model 4 shows that only when the out-migrant is not a farmer does his out-migration significantly increase the woman's hours spent on domestic tasks (b = 0.177, p-2s $<$ 0.05). In combination with the main results (Table 4, Model 4), we can conclude that left-behind women living in households from which a non-farmer out-migrated spend fewer hours on paid work and more hours on taking care of the family. When it is the farmer of the household who out-migrated, the left-behind women shift more hours to paid work. The migrant's household position has no influence on women's time allocation on domestic tasks (Model 5). The out-migration level of the village also has no influence on women's housework time (Model 6). But in communities with more traditional gender values, the left-behind women spend even more hours on domestic tasks than other women (Model 7: 0.189+0.101).

3.6 Conclusion and discussion

Scholars have shared concerns on rising social inequality with market transition. In this study, we asked to what extent the stay-behind women in rural China changed their time allocation on three labor activities—agricultural work, local paid work, and self-employment—in response to the out-migration of a household member.

Using longitudinal data from 1997 to 2015 in nine provinces of China, we found that the out-migration of household members affects women's time allocation. The stay-behind women work more hours on local paid work when their out-migrant member used to be a farmer. This suggests the existence of a remittances effect. These women can take the risk of leaving the farm and find a new job in the non-farm sector. When women are left behind by non-farmer members, however, they actually allocate time away from paid work. Results from the descriptive figure and the post-hoc analysis also show that these women increased their hours doing household tasks. We didn't expect such an effect, but it has been suggested in the literature that the remittances sent back by migrants may reduce women's labor force participation (Amuedo-Dorantes and Pozo, 2006). It is an unsolved issue why women react differently to the out-migration of a farmer and a non-farmer. It could be related to the prosperity of these families. If farming families are poorer, the left-behind women may not have enough resources to leave the labor market completely, even when receiving remittances. Instead, they improve their situation by increasing their non-farm labor activities.

Our other main findings concern the influence of regional out-migration and regional gender ideology on women's time allocation. In places with a high level of out-migration,

women with no out-migrant members in their household can benefit from the out-flow of labor and move time away from farm work to off-farm paid work. The left-behind women in these places, on the contrary, are tied to family farms, probably because of the lost labor impact. In places with a more traditional gender ideology, the stay-behind women are restricted to farm labor as well, in spite of possible remittances sent home by migrants. Only in places with less traditional values does the remittances impact seem to offset the impact of the loss of labor. Lacking a direct measure of the remittances, however, it remains unclear if there is indeed a negative income effect on women's time allocation. It is likely that there is heterogeneity in the amount of remittances sent back by migrants. Moreover, the family structure of the households with out-migrants may have also shaped women's time allocation. For example, when the left-behind wife is living together with the husband's parents, which is a common and conventional form of family structure in China, she may not have much decision-making power in the household in terms of how to use the money sent back by her husband and may have to be the only informal caregiver in the household. This merits further research with more information on the remittances.

One should also be aware that the physical boundary of rural areas changed over time due to urbanization. This means that women's off-farm earning opportunities may have improved even when there is not a large exodus of (male) labor, because they now can sell products in the city or work there. This changing boundary effect is rarely discussed in previous research. We found that in places with a low level of regional out-migration, the left-behind women shift time away from the farm, which may indicate the presence of an urbanization effect. Whether or not the urbanization process was another macro-level factor that influenced women's time allocation is an interesting topic for further research.

Scholars have been concerned that living in households with out-migrants is detrimental to women's income and health (Chang et al., 2011). Women as a group might not profit from the economic transition as much as men since the exodus of male labor from rural to urban areas is likely to result in the feminization of agriculture. We have found that, actually, women's time allocation on labor activities changed in a more complex way depending on the out-migrant member's prior labor activity. There is an unsettling trend, however, that rural women, especially the left-behind women, are withdrawing from the labor market as they are moving more time to do domestic tasks.

Scholars have in general stressed the importance of social context, such as regional economic opportunity and cultural values, for predicting individual economic behavior. Research on the consequences of out-migration has, however, largely neglected the importance of these contexts. Although previous research has documented a positive impact of regional out-migration on women's off-farm opportunities in rural China (Chang et al., 2011; Matthews and Nee, 2000), the interplay between regional out-migration and the household out-migration status has not been examined before. This study fills this void and demonstrates that for women, especially, labor is not merely a product of changes in

the household domain, but is also influenced by macro-level factors. Changes at the contextual level contribute to enlarging income inequalities among women, with the left-behind women sometimes being disadvantaged and sometimes not.

THE DOUBLY DISADVANTAGED: THE MOTHERHOOD EARNINGS PENALTY AMONG INTERNAL MIGRANTS IN CHINA

Siyang Kong, Hao Dong

Chapter 4

A slightly different version of this chapter has been submitted to an international academic journal. This chapter is co-authored with Hao Dong. Kong wrote the main part of the manuscript and conducted the analyses. Hao contributed substantially to the manuscript. The authors developed the research idea and design together. An earlier version of this chapter was presented at the Cambridge Social Stratification Research Seminar in Amsterdam (28 August 2019), at the Migration and Social Stratification seminar at Utrecht University (30 October 2019), at the Dag van de Sociologie in Amsterdam (28 November 2019), at the Winter Forum on Social Stratification and Mobility at Shenzhen University, at workshops at Fudan University and Zhejiang University, and at the 2020 International Chinese Sociological Association Annual Conference (20 November 2020).

Abstract

The motherhood penalty phenomenon, meaning that mothers tend to earn less than non-mothers, has been widely documented. Unlike most past studies on working mothers who mostly enjoy access to social welfare in the locality, we focus on the motherhood penalty among Chinese migrant women who are likely to be doubly disadvantaged by public institutions and family obligations. The distinction between migrant mothers leaving their children behind and those living with children sheds new light on disentangling the mechanisms shaping the motherhood penalty. Using the China Migrants Dynamic Survey, the most extensive and systematic cross-sectional sampling survey data of the migrant population in China, we examined 35,715 rural-to-urban and 6,281 urban-to-urban married migrant women in 2015. After accounting for various covariates with propensity score weighting and regression adjustment, we found that migrant mothers living with children suffer more disadvantages in hourly earnings than mothers leaving children behind. The earnings gaps vary systematically by childbirth timing and the child's age. Moreover, family support from a co-resident spouse and parents (-in-law) does not mediate the penalty on mothers-with-children, while family-friendly work arrangements such as part-time work and self-employment do, suggesting a potentially important direction for policy intervention.

4.1 Introduction

In many societies mothers tend to earn less than non-mothers (Bianchi and Milkie, 2010), and this phenomenon has been found in China as well (Jia and Dong, 2013; Yu and Xie, 2018; Zhang et al., 2008). Mechanisms shaping the motherhood earnings penalty concern both the demand and supply sides of women's labor participation (Budig and England, 2001). On the demand side, employers may prefer childless women over mothers considering their potential differences in productivity and work efforts. On the supply side, working mothers' human capital accumulation may be interrupted due to childbearing and resulting work-family conflict. Mothers may consequently choose family-friendly jobs, resulting in different compensations than otherwise. Extensive evidence suggests that mothers' employment characteristics lead to substantial differences in the earnings gap relative to childless women (Magnusson and Nermo, 2017; Villanueva and Lin, 2019; Yu and Kuo, 2017). An increasing amount of literature also highlights that family living arrangements play a role in elevating or reducing mothers' work-family conflict (Chen et al., 2011, 2000; Compton and Pollak, 2014; Yu and Xie, 2018). Overall, understanding the inequality consequences of motherhood matters, not only to overcome women-related disadvantages in the labor market but also to promote gender equality in families.

Most existing studies have explored the wage gap and its variations within the general population of working women, the majority of whom enjoy access to local welfare system, such as paid parental leave and public childcare services, in the locality. However, little research has been devoted to understanding the motherhood wage penalty among migrants who have difficulty accessing local welfare system. Being a non-trivial part of the employed population, migrants may be disadvantaged due to institutional barriers at their destination and, at the same time, disadvantaged by being mothers. Moreover, compared to other mothers, a problem unique to migrant mothers is that they must decide whether to bring their children with them or leave them behind. By studying the presence or absence of children, we can move from a dichotomous distinction between mothers and non-mothers to systematic comparisons between non-mothers, mothers leaving children behind, and mothers living with children.

Among migrant women, the nuanced earnings inequality between non-mothers, mothers leaving their children behind, and mothers living with children, albeit potentially subject to various selections, has implications for us to better understand different theoretical explanations of the motherhood penalty that are otherwise intertwined in the general population. When focusing on the general motherhood penalty among all working women, it is usually difficult to distinguish the motherhood identity effect that comes with childbearing from the childrearing effect on earnings inequality, since working mothers usually co-reside with children. However, among migrants, others being equal, contrasts between non-mothers and mothers without children may suggest the extent to which the motherhood

identity per se influences the earnings of migrant women - net of most childrearing obligations, while differences between mothers living with and without children, though possibly influenced by selection, mainly single out the childrearing cost to mothers' earnings.

In this study, we aim to examine the motherhood wage penalty among internal migrants in China. There were approximately 240 million internal migrants in China in 2018 (National Bureau of Statistics China, 2019), and women account for almost half of that number (Migrant Population Service Center, 2018). Those women who migrated are either single and young, or they migrated together with their husbands (Fan, 2008). Given that internal migrants do not have a local household registration type (*hukou* type), they have limited access to local social welfare institutions, such as public childcare and preschools (Fan, 2008; Wu and Treiman, 2007). Moreover, being away from native and in-law families, internal migrants often lack family support at their destination. Work-family conflict is a particularly serious issue for migrant mothers, since they often lack alternative caregivers when migrating with their children (Fan, 2008). As a result, internal migrant mothers in China are likely to be doubly disadvantaged by their motherhood status on top of disadvantages of being a migrant.

The present study examines differences in the hourly earnings of 41996 internal migrant (i.e., non-local *hukou*) married women in 2015 urban China who are either childless or mothering at least one child under age 15. By doing so, we attempt to answer two research questions: *To what extent do the hourly earnings of migrant non-mothers, mothers living without children, and mothers with children differ*? *Do family living arrangements or work-schedule flexibility mediate migrant mothers' motherhood penalty of living with children*?

4.2 Theoretical background

4.2.1 The motherhood penalty

Many theoretical explanations for the motherhood penalty concern differences in women's human capital accumulation, productivity, and job preferences by motherhood status (Budig and England, 2001). Since childbearing interrupts mothers' labor participation, they accumulate less work experience and on-the-job training compared to non-mothers, which results in differential earnings (Becker, 1993). Working mothers' productivity and work effort may also be hampered by having children because the demand for household labor is higher for mothers than non-mothers, meaning that mothers have less energy and time to devote to paid work (Becker, 1981). In the same vein, mothers may opt for family-friendly jobs; that is, trading off wage earnings for work-schedule flexibility (Killewald and Gough, 2013). Besides, other explanations emphasize employers' potential discriminations by women's motherhood identity (Arrow, 1973): employers may assume that mothers are less productive and hence less rewardable than non-mothers.

Extensive evidence has shown that mothers' earnings disadvantage is attributable to their education (Budig and England, 2001), work experience (Anderson et al., 2002, 2003), and occupational characteristics or work conditions (Fuller, 2018; Gangl and Ziefle, 2009; Yu and Kuo, 2017). The residual of mothers' earnings disadvantage, after accounting for human capital and job characteristics, tends to be interpreted as evidence of employers' discrimination or changes in mothers' productivity (Budig and England, 2001; Gangl and Ziefle, 2009). While experimental studies confirm that employers discriminate against mothers because they presume mothers to be less competent and less committed than non-mothers (Benard and Correll, 2010; Oesch et al., 2017), direct evidence of mothers' changing productivity due to childrearing remains limited.

These explanations for the motherhood penalty in the general population also shed light on the potential earnings costs of having children for internal migrant women in China. First, migrant women's labor participation is interrupted by childbearing. These women must often return to their places of origin during pregnancy, mainly because of difficulties in accessing the public health system in the locality (Fan, 2008). Second, migrant mothers are likely to be subject to employers' discrimination , if any, given that many migrants find jobs via social networks and hometown ties (Zhao and Jin, 2019) and because their motherhood identity is easily exposed. Third, for migrant mothers who are living with children at their destinations, the actual childrearing responsibility may further exacerbate their earnings challenges on top of the disadvantages of motherhood identity per se and work interruptions. Recent research has documented that internal migrant mothers changed their work conditions when migrating with children, in response to the increased childcare responsibility (Peng, 2018), and they also earned a lower monthly wage compared to childless migrant women, while such a monthly wage loss was not found for migrant mothers who leave their children behind (Zhao and Hannum, 2019). In this study, we focus on hourly earnings.

We expect that among married migrant women,

H1: *Mothers who are living with children (hereafter, mothers-with-children) earn the lowest hourly earnings, while mothers who are not living with children (mothers-without-children) earn more, and non-mothers earn the most*.

4.2.2 The roles of family living arrangements

Family support from extended family members, such as parents and parents-in-law, has an important influence on women's labor supply (Chen et al., 2011; Raymo et al., 2015). Chinese families are adaptive to cope with actual familial needs, mostly related to labor activities of the women in the household (Chen et al., 2011). This means that when mothers work, their parents and in-laws are likely to provide some help taking care of the children. Co-resident parents and in-laws, especially mothers-in-law, share a non-trivial part of the

childcare responsibilities (Chen et al., 2011), which enable married women to continue their work (Maurer-Fazio et al., 2011). In rural China, multigenerational co-residence particularly allows rural mothers to migrate out (Dong and Xie, 2017), and in urban China, living with parents has been found to reduce the motherhood wage penalty (Yu and Xie, 2018).

For migrant mothers-with-children, family support is essential because formal childcare services are often not available or affordable (Fan, 2008; Peng, 2018). In the early era of China's massive rural–urban migration, individual labor migration of married men was common, and women and children were often left behind (Fan, 2008). Since 2000, the migration of married women and migration with spouses and other family members have become common (Duan et al., 2013; Fan and Li, 2020; Liang and Ma, 2004). Moreover, while alleviating the childcare burden, living expenses are likely to rise with co-resident family members. Therefore, migrant mothers who are living with their children and have family support may be more willing and able to work hard and compete for jobs with higher hourly earnings.

We expect that the following:

H2: *Internal migrant mothers who are living with children are more likely to live with their spouse and parents (in-law) than other women, which in turn increases their hourly earnings*.

However, it is important to note that family migration may be costly. Not all migrant mothers can afford living with other family members in their destination. It is likely that they leave their children behind and migrate alone if family migration is too expensive. Therefore, we may only observe migrant mothers living with children who earn enough and can afford to have other co-resident family members.

4.2.3 The roles of work arrangements

The characteristics of the work that mothers do may partially explain the earnings gap between mothers and non-mothers (Budig and England, 2001). The theory of compensating differentials argues that both the pecuniary (wage) and nonpecuniary aspects of work matter for workers when searching for an ideal job (Filer, 1985). To shoulder household responsibilities, mothers may accept lower earnings in exchange for more desirable, family-friendly work conditions (Budig and England, 2001; Fuller and Hirsh, 2019). One of the most important mother-friendly job characteristics is being able to work part-time (Bianchi, 2000; Riederer and Berghammer, 2019; Waldfogel, 1997). Work-schedule flexibility, autonomy at work, and less team work have also been found to be appealing to mothers in particular (Magnusson and Nermo, 2017; Yu and Xie, 2018). However, all of these prior studies were conducted in developed countries with a well-developed labor market and institutions that can protect workers' rights, such as unions and work-family policies. In

contrast, Villanueva and Lin (2019) suggest that the lack of work-family policy and labor informality constitute the most important features of the labor market in developing countries. They found that in Latin America, mothers' compensating strategy is to work in the informal sector, which offers little legal protection and low pay, but work-schedule flexibility (Villanueva and Lin, 2019).

Lack of legal protection as well as labor informality also characterize the situation of internal migrants in urban China (Swider, 2015). Migrant workers tend to have long working hours, poor work conditions, and limited benefits (Fan, 2008; Zhang and Wu, 2017). Moreover, a number of qualitative studies have revealed the existence of work-family conflict among migrant mothers-with-children (Goodburn, 2015; Peng, 2018). Although quantitative evidence on the work arrangements of migrant mothers is limited, a recent study has demonstrated that migrant women experience downward job mobility in response to family obligations (Li and Liang, 2016).

Other than continuing to work full-time, two major options for migrant mothers in China, when facing childcare responsibilities, are to shift to part-time jobs and to seek (unskilled) self-employment. Both options are generally considered to have family-friendly work characteristics, such as work-schedule flexibility and autonomy at work (Budig et al., 2016; Craig et al., 2012; Riederer and Berghammer, 2019). In China, although part-time employment is uncommon, it is not uncommon for migrant mothers to switch from full-time to part-time employment when they have childcare obligations (Peng, 2018). Self-employment is also relatively common in China. The entry into self-employment is found to be gendered for the general population; married women are more likely to be pushed into unskilled self-employment for family reasons (Zhang and Pan, 2012).

However, predicting how part-time work or self-employment would affect hourly earnings per se is difficult. On the one hand, a trade-off may exist between earnings and jobs with family-friendly characteristics, as the compensating differentials theory suggests. On the other hand, especially for migrants, either part-time work or self-employment comes with a non-trivial economic entry barrier. Migrant mothers who choose these two work arrangements must be able to afford the economic loss of working few hours and/or the resources for starting their own business. If these opportunity costs are too high, they prefer to continue working full-time or return home (Fan, 2008). Hence, we have two competing hypotheses:

H3a: *Internal migrant mothers-with-children are more likely to work part-time or to be self-employed than other women, which in turn reduces their hourly earnings, given compensating differentials for family-friendly jobs*.

H3b: *Given the positive selection of affordability for family-friendly jobs, internal migrant mothers-with-children who are more likely to work part-time or to be self-employed than other women are also more likely to earn more*.

4.2.4 The household registration system

The Chinese household registration system (*hukou*) plays a prominent role in determining people's education, occupational status, earnings, and wealth (Bian, 2002; Wu, 2019). It was used to limit people's geographical movements, especially rural-to-urban migration. Although after the start of China's economic transformation, the legal restriction on internal migration was abolished, the *hukou* system has been retained, creating all kinds of structural barriers for internal migrants. Both the type of *hukou* (agricultural or nonagricultural) and the place of *hukou* registration matter for labor market opportunities (Li et al., 2015). Internal migrants now consist of both rural-to-urban (hereafter rural) and urban-to-urban (hereafter urban) migrants, though the main share is still rural migrants (Migrant Population Service Center, 2018). Rural and urban migrants face similar socioeconomic barriers in terms of access to the welfare system in the locality, entry into prestigious sectors, and education opportunities for the migrants' children (Wu, 2019). Using a sample of the 2005 mini census in Shanghai, Li et al. (2015) demonstrated that migrants with a rural hukou and migrants with an urban but nonlocal hukou experience comparable disadvantages in occupational status and wage earnings. However, there are systematic differences between rural and urban migrants in, for example, education (Wu, 2010). Urban migrants may consequently have higher occupational status and earnings, on average, than rural migrants.

To our knowledge, no previous theories or empirical studies exist to guide our expectations regarding the extent to which the motherhood penalty may differ between rural and urban migrants in China. However, due to the systematic differences between the two groups, we examine rural and urban migrant women separately. Given that urban migrants on average have a higher socioeconomic status and occupational attainment, we expect that their patterns of motherhood penalty are more similar to the patterns of urban residents.

4.3 Data and operationalization

4.3.1 Data

We used the 2015 wave of the China Migrants Dynamic Survey (CMDS), the first repeated cross-sectional survey project representative of the internal migrant population in China. The survey was initiated by the National Population and Family Planning Commission of China and conducted in migrants' destination cities in 32 provinces. While longitudinal data and fixed-effects models are commonly used to study the motherhood penalty in the general population, we prefer this cross-sectional data source for two major reasons. First, the sample size of migrants is large—unlike general surveys designed to represent the national population, in which migrants are the minority, the CMDS targets the migrant

population by design. Second, the data contains rich information about migrants and their family members. In addition to information about individual demographic and socioeconomic characteristics, the survey includes detailed information about the characteristics of the current migration, such as self-reported reason, duration, origin, and destination, which allows us to identify the individuals currently living (i.e., migrating) with the respondent. In comparison, alternative Chinese longitudinal household surveys only identify a limited number of migrants, and their attrition over time is high, indeed because of their loose bonding to the locality and high spatial mobility.

To create our analytical sample, we started with 96,692 migrant women, and the data restriction included five steps. First, we restricted the sample to women aged between 16 (the legal age to work full-time in China) and 50 (the legal retirement age for women); as a result, 6,380 women beyond this age range were excluded. Second, we excluded women who did not work, accounting for 24.95% of the remaining sample. Third, as childbirth out of wedlock is rare in China and we are interested in the role of family support, we restricted our sample to married women. This step leads to excluding the 16,259 never-married (21.51%), divorced (2.09%), and widowed women (0.39% of the remaining sample). Fourth, we only focused on married non-mothers or mothers with at least a child aged 15 or below (72.89% of the remaining sample), considering that the motherhood wage penalty primarily occurs when children are young and dependent. Finally, we applied a list-wise deletion of the missing values of all relevant variables. As a result, our analytical sample includes 41996 married migrant women, of whom 35715 are rural migrant women and 6281 are urban migrant women.

4.3.2 Variables

Dependent variable

Hourly earnings have commonly been used in previous research on the motherhood wage penalty (Budig and England, 2001; Yu and Xie, 2018). In this study, the earnings variable is the logged hourly earnings as of the last month, and we calculate it based on the income of the last month and working hours of the last week. By using this outcome, our findings are comparable to other studies. Moreover, while a relevant study on Chinese migrants by Zhao and Hannum (2019) used monthly income as the outcome, we prefer hourly income over monthly income considering that migrants' working hours may be contingent on varying childcare responsibilities.

Key independent variables

Motherhood status is our key explanatory variable, including three categories: non-mothers (0), mothers-without-children (1), and mothers-with-children (2). Non-mothers are mar-

ried migrants who report no children, while mothers-without-children are migrant mothers who leave their children behind in their place of origin, and mothers-with-children are migrant mothers currently living with at least one child at the destination[13]. As we use a propensity score weighting approach, this variable can be regarded as the treatment variable.

Furthermore, two variables measure family support availability, and three other variables relate to work characteristics. Regarding the former variables, *co-resident spouse* is a dichotomous variable pertaining to whether the husband is living in the same household, and *co-resident parents (-in-law)* is a dichotomous variable regarding whether any parent or parent-in-law is in the household. In terms of the other three variables, following Zhao and Hannum (2019), first, *part-time* is a dichotomous variable indicating whether last week's working hours were under 40. Second, *self-employment* is a dichotomous variable that differentiates the respondent's self-employed business from other types of employment. Third, *occupation* categorizes all reported occupations into 18 groups; we use this variable to control for the fixed effects of occupations, because certain occupational characteristics mitigate the wage costs of childbirth on women (Yu and Kuo, 2017).

Balancing covariates

As we will discuss the technical details in the next section, in addition to the above-mentioned key variables, we further weight respondents by their propensity scores of being a non-mother, a mother-without-children, or a mother-with-children. The propensity scores are calculated based on a wide range of observed characteristics that may have a systematic influence on the motherhood status assignment. These balancing covariates can be classified into four sets. The first set includes individual demographic and socioeconomic characteristics, such as age, ethnicity, age at first marriage, marriage order (i.e., first marriage or remarriage), and educational attainment (seven categories).

The second set is comprised of characteristics of the current migration, including its duration, distance (i.e., cross-province, cross-city, or cross-county), and the reason for migration (i.e., for employment, migrating with spouse, or others). These are critical to account for the self-selection of migrants regarding their migration decision and labor participation.

The third set concerns characteristics related to the spouse and household socioeconomic status, including the ethnicity, *hukou* status, and education of the spouse; the age gap of the couple; and the quantile level of household income in the last year. We chose relative household income level in the last year to account for systematic differences by household economic conditions, while avoiding potential collinearity between household income last year and the married woman's personal hourly earnings last month. The correlation between the two is moderate (r=0.45).

[13] Among mothers who live with children, 70.34% live with one child, 29.66% with two or more children. In this study, we did not make a distinction by the number of co-resident children that migrant mothers have.

The fourth set concerns family characteristics at origin that influence migrants' decisions to stay or return. There are three variables: whether the woman has elderly parents (aged 60 and above) in her hometown, whether she has siblings in her hometown, and whether she is willing to return home to take care of her parents when they are sick. In addition to the four sets of individual- and family-level covariates, we include dummies of each individual's origin and destination provinces to account for systematic regional differences in economic development, public policy, and other unobserved factors, such as familial culture, that may shape unequal chances of motherhood status assignment.

4.4 Analytical strategy

Our analysis included four steps. First, we calculated the inverse weights of individual propensity scores for being a non-mother, a mother-without-children, and a mother-with-children, based on a wide range of pre-treatment covariates. Second, we examined the average effects of motherhood status on internal migrant women's hourly earnings using linear regressions with the inverse probability of treatment weights (IPTWs). Other than the motherhood status, we sequentially added key explanatory variables, namely, family support and work characteristics, in the models. Considering that family support and work characteristics may change depending on motherhood status, a comparison between these nested models aids in understanding the total observed motherhood earnings penalty. Finally, we assessed the mediation of family support and work-schedule flexibility on the effect of motherhood status on hourly earnings using structural equation models with the weighted sample. We performed all analyses separately for women with an urban hukou and those with a rural *hukou*.

4.4.1 Calculating the inverse probability of treatment weights using generalized boosted models

Admittedly, using cross-sectional data limits our ability to utilize individual-level fixed-effects models, like many previous studies, to account for unobserved time-invariant heterogeneity that may bias the association between motherhood and women's earnings. In a similar hope of improving our relevant knowledge with robust statistical associations, we capitalize on multi-treatment propensity score weighting methods to match and compare the groups of non-mothers, mothers-without-children, and mothers-with-children on a rich set of covariates available in the CMDS. Propensity score weighting, similarly to other propensity score methods, is widely used in social and health sciences to examine causal effects using observational data (Guo and Fraser, 2015). By using propensity score methods, the confounding effects of observed characteristics on treatment assignment (that is the selection into motherhood and living with children) can be largely reduced (Guo and

Fraser, 2015).

In our study, there were three treatment conditions: migrant non-mothers, migrant mothers-without-children, and migrant mothers-with-children. The average treatment effect (ATE) with multiple treatments was estimated, which is the average difference between non-mothers, migrant mothers-without-children, and migrant mothers-with-children in hourly earnings. We obtained the probability of a married migrant woman being "assigned" to the received treatment as opposed to any other treatments, given a combination of observed covariates (Imbens, 2000). We could then construct an individual weight as the inverse of the treatment probability. By doing so, all married migrant women in our sample have a comparable probability of being either a non-mother, a mother living or not living with children, given the observed covariates .

To obtain the inverse of propensity score weights (the IPTWs), we used the generalized boosting modeling (GBM) approach—separately for rural migrant women and urban migrant women. GBM is a multivariate nonparametric modeling algorithm that combines multiple regression trees iteratively (Guo and Fraser, 2015; McCaffrey et al., 2004). A notable advantage of GBM for our study is to handle possible clustering of the observations in a hierarchical data structure (McCaffrey et al., 2004). Migrants living in the same province or coming from the same province may share more similarities than those with different destinations or origins. This cross-classified multilevel structure may bias the assignment of treatments, resulting in erroneous propensity scores (Leite et al., 2015). With GBM, we add provincial fixed effects of the origin and destination to account for data clustering. Our IPTWs balanced the sample reasonably well (see Figure C.1 and C.2 for details).

4.4.2 Estimating the total motherhood penalty

To examine the influence of motherhood status on migrant women's hourly earnings, we applied linear models with the IPTWs. Using weighted linear models has two main strengths for our study. First, compared to other propensity score methods, the weighing approach puts less constraint on the type of outcome analysis to be used and does not require a continuous or normally distributed outcome variable (Guo and Fraser, 2015). This facilitates our mediation analysis in which the mediators are dichotomous. Second, unlike regular regressions that adjust for the influence of confounders by adding control variables, the IPTW also puts less constraints on the specification of the relationship between covariates and the outcome, and it is hence more flexible in terms of model specification (Lunceford and Davidian, 2004).

Once the propensity score weighting is successfully completed, we can directly estimate the total effect of motherhood status on women's hourly earnings using the weighted sample. We then added family living arrangements and work arrangements, for rural and urban migrant women separately to separate the direct effect of motherhood and indirect

effects of motherhood. In the final model, we added occupational fixed effects. The main analysis is specified as

$$\begin{aligned} HourlyEarnings_i = \beta_0 + \beta_1 Motherhoodstatus \\ + \beta_2 CoresidentSpouse + \beta_3 CoresidentParents(-in-law) \\ + \beta_4 Part-time + \beta_4 Self-employment \\ + \beta_6 Occupation + \varepsilon_i \end{aligned} \tag{4.1}$$

and the covariates have been introduced in the previous section. We obtained robust standard errors from 1000 bootstrapping iterations that account for the clustering of women within destination cities.

4.4.3 Examining selected mediation of the motherhood penalty

We investigated the underlying mediation mechanisms of motherhood wage penalty through family support availability and work-schedule flexibility. Since this analytical step aims at examining whether and how these mechanisms could help to reduce the motherhood penalty by alleviating work-family conflict for mothers, we focused on the comparison between mothers with and without children only, and we studied rural and urban samples separately.

We used clustered structural equation modeling (SEM) with weighted sample to estimate the mediation effects. Compared to other conventional mediation analysis methods, SEM allows us to examine direct and indirect effects simultaneously. It also enables us to handle multiple mediators and categorical mediators. We used the default link function of Probit regression to handle categorical mediators, and robust standard errors were obtained using bootstrapping with 1000 iterations, accounting for the clustering of women at each destination city. The Wald test was also used to examine the statistical significance of the indirect effects.

4.5 Results

4.5.1 Descriptive results

Table4.1 reports the summary statistics of all our variables separately by women's hukou and motherhood status. Family migration is common, regardless of hukou or motherhood status. Migrating with husbands is common for the vast majority of rural migrant mothers who are living with children (98%), compared to rural migrant mothers-without-children (78%). Similarly, migrating with husbands is also common among urban migrant mothers who are living with children (88%), compared to urban migrant mothers-without-children

(69%). Moreover, a larger proportion of migrant mothers-with-children are living with parents (-in-law), compared to mothers-without-children and non-mothers.

Table 4.1: Summary statistics of all variables by *hukou* and motherhood status (non-mother, mother-without-children, and mother-with-children), married women aged 16 to 50

	Rural *hukou*			Urban *hukou*		
	non-mother	mother-without-children	mother-with-children	non-mother	mother-without-children	mother-with-children
Dependent variable:						
Hourly wage	2.72	2.67	2.66	3.05	2.90	3.00
	(0.61)	(0.58)	(0.67)	(0.67)	(0.70)	(0.73)
Key explanatory variables:						
Coresident spouse	89.52	77.97	98.17	88.79	69.35	87.56
Coresident parents (-in-law)	5.04	1.27	7.62	5.65	2.10	11.00
Part-time	30.06	19.03	22.63	52.05	32.50	44.83
Self-employment	30.73	31.90	45.27	16.04	27.42	26.87
Pre-treatment covariates:						
Respondent's demographics:						
Age	31.69	32.69	33.22	31.24	33.42	33.63
	(9.15)	(6.35)	(6.29)	(6.98)	(5.65)	(5.42)
Han Chinese	92.58	93.28	91.92	92.80	95.48	93.74
Remarried	1.71	1.36	1.33	1.80	1.94	1.91
Age at first marriage	23.38	22.33	22.72	25.44	24.04	24.64
	(3.42)	(2.88)	(3.02)	(3.40)	(3.18)	(3.30)
Respondent's education:						
None	1.68	1.99	1.99	0.33	0.48	0.39
Primary school	13.30	14.65	13.97	1.72	4.27	26.37
Secondary school	44.65	61.32	58.37	15.96	34.68	27.05
High/vocational school	22.97	17.99	19.44	21.77	30.08	27.05
Applied university	12.11	3.30	4.76	26.10	17.66	23.07
University	5.12	0.74	1.42	29.46	11.45	17.75
Graduate school	0.18	0.00	0.04	4.66	1.37	1.89
Respondent's current migration:						
Migration duration (in year)	3.62	3.28	5.08	3.95	3.82	5.48
	(4.29)	(3.54)	(4.34)	(3.82)	(3.65)	(4.55)
Migration distance						
cross-province	52.85	61.52	48.56	53.44	49.68	49.33
cross-city	31.19	22.63	31.23	29.38	29.35	32.02
cross-county	15.96	15.86	20.21	17.18	20.97	18.64
Reason for migration						
for employment	89.34	94.50	87.60	86.91	94.52	85.94
migrate with spouse	7.50	4.93	10.64	6.06	3.23	8.93
other reasons	3.16	0.57	1.76	7.03	2.25	5.13
Spouse's characteristics:						

Continued on next page

Table 4.1: (continued)

	Rural *hukou*			Urban *hukou*		
	non-mother	mother-without-children	mother-with-children	non-mother	mother-without-children	mother-with-children
Han Chinese	93.43	94.01	92.46	93.70	95.73	93.82
Rural *hukou*	92.34	96.14	95.17	20.21	23.15	24.06
Education						
None	0.65	0.51	0.70	0.08	0.24	0.21
Primary school	10.01	10.18	9.76	1.47	3.39	3.33
Secondary school	47.26	62.49	59.99	16.37	34.44	26.39
High/vocational school	23.51	21.27	21.82	23.40	28.47	27.81
Applied university	11.98	4.33	5.63	24.96	19.43	26.68
University	6.23	1.14	1.98	28.89	12.50	19.46
Graduate school	0.36	0.06	0.12	4.83	1.53	2.12
Spousal age gap	1.97	1.86	1.92	1.75	1.91	1.93
	(3.10)	(2.98)	(3.12)	(3.04)	(3.14)	(3.23)
Family characteristics:						
Household income level last year						
the lowest	32.41	29.06	24.74	19.97	24.27	14.61
the second	32.41	33.09	33.11	25.20	28.95	23.85
the third	20.49	23.56	21.83	21.19	22.66	22.29
the highest	14.69	14.29	20.30	33.63	24.11	39.15
Having siblings at hometown	38.02	54.65	53.22	20.69	49.92	47.92
Having elderly parents at hometown	42.68	61.23	60.23	40.34	59.03	57.63
Elderly care intention	35.44	52.18	49.76	30.36	47.50	45.25
N individual	3866	10438	21411	1222	1240	3819
N city		347			315	

Notes: 1. Standard deviations are in parentheses

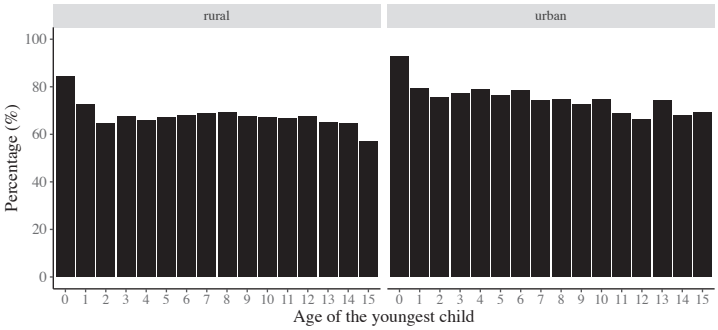
2. Pre-treatment covariates that were used for calculating inverse probability of treatment weights (IPTWs) also included respondents' (*hukou*) origin provincial fixed effects and destination provincial fixed effects.

With regard to migrant women's work characteristics, more married non-mothers are working part-time compared to mothers living and not living with children. This is likely because compared to mothers, childless married women can better "afford" to lose some substantial earnings that comes with having a part-time job. These childless married women have no financial burden of raising children. Meanwhile, their husbands probably also bring in some income to the family. However, among mothers only, more mothers-with-children have part-time jobs than mothers-without-children. As for self-employment, it is more common among rural mothers-with-children (45%) than mothers-without-children (32%) and non-mothers (31%). Then, among urban married migrant women, self-employment is less popular, with 27% of mothers-with-children, 27% of mothers-without-children, and 16% of non-mothers working as self-employed persons.

Migrant women work in different occupations by their hukou type and motherhood status (see Figure C.3 for the distribution of respondents by occupation). In line with previous research (Yu and Kuo, 2017), women with childcare responsibilities are likely to avoid jobs that require fixed and long working hours, such as factory work, while childless women can make use of these working opportunities. In addition, consistent with the evidence of Fan (2008), high status occupations such as professionals are more common among urban migrant women than rural migrant women.

Before going into the results of the main analysis, it is important to verify if a migrant mother's choice of living with children differs by the age of children. Our study design assumes that mothers of children below age 15 constitute a broadly homogenous population and that the age of children has little influence on the group assignment of mothers living with or without children. Furthermore, in practice, we cannot account for the age of children in generating the propensity score weights because we have non-mothers as another comparison group. As a consequence, if the proportions of mothers living with versus without children differ substantially by the age of the youngest child, then our findings are likely to be biased by such a selection. As suggested in Figure 4.1, except for the

Figure 4.1: Percentage of migrant mothers living with children among all migrant mothers by the age of the youngest child



Source: authors' own calculation using the CMDS 2015.

substantially high proportion of mothers living with children when the child is an infant (age 0–1), the proportion of mothers-with-children appears to be generally stable when the child is aged 2–10 (around 75% of rural migrant mothers and 70% of urban migrant mothers). The proportion slightly declines with a further increase in the age of the youngest child; however, by age 15, it remains around 70% for rural migrant mothers and 60% for urban migrant mothers.

4.5.2 Average effects of motherhood status on hourly earnings

To answer our first research question, Model 1 in Table 4.2 (Panel A) shows that for rural married migrant women, being mothers-with-children is associated with a significant 5% hourly earnings penalty compared to mothers-without-children. Married non-mothers' hourly earnings is the highest, followed by mothers-without-children, and mothers-with-children earned the least. Among urban married migrant mothers, the earnings penalty of being a mother, living with or without children, is not significant (see Model 1, Panel B). This finding largely corresponds to what previous research has found (Zhao and Hannum, 2019). However, Zhao and Hannum (2019) also found a monthly income premium for migrant mothers-without-children compared to non-mothers, which we argue is likely due to the long working hours of mothers-without-children (see the supplementary analysis section). Furthermore, using hourly earnings, Yu and Xie (2018) found that for local residents in urban China, the penalty of each additional child is 12%, which is much larger than the penalty that we found for migrant mothers. This is likely because of a positive selection of migrant women who remained in the labor market after childbirth. In other words, compared to local residents, the high living expenses and institutional barriers may result in the selection of only those migrant mothers who are highly motivated to stay in cities and pursue paid work.

Table 4.2: Propensity score weighted linear regression of hourly wage on motherhood status, family living arrangements, and job arrangements, married women aged 16 to 50

Panel A:	Rural *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment status						
Mother-without-children (ref.)						
Non-mother	0.079***	0.078***	0.078***	0.049*	0.050**	0.048*
	(0.029)	(0.029)	(0.030)	(0.025)	(0.025)	(0.024)
Mother-with-children	−0.050***	−0.052***	−0.050***	−0.061***	−0.067***	−0.068***
	(0.012)	(0.013)	(0.013)	(0.012)	(0.012)	(0.011)
Coresident spouse		0.007	0.007	0.004	−0.013	−0.016
		(0.030)	(0.030)	(0.024)	(0.024)	(0.023)
Coresident parents (-in-law)			−0.018	−0.021	−0.025	−0.028
			(0.026)	(0.025)	(0.025)	(0.022)
Part-time				0.554***	0.568***	0.575***
				(0.031)	(0.032)	(0.029)
Self-employment					0.099***	0.004
					(0.022)	(0.022)
Occupation FE						YES

Continued on next page

Table 4.2: (continued)

Constant	2.696***	2.690***	2.691***	2.581***	2.557***	3.023***
	(0.018)	(0.026)	(0.026)	(0.021)	(0.021)	(0.138)
N individual			35715			
N city			347			
Log Likelihood	-39,256.360	-39,256.160	-39,255.580	-36,657.620	-36,540.240	-35,741.120
AIC	78,518.710	78,520.320	78,521.160	73,327.240	73,094.470	71,530.250
Panel B:	Urban *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment status						
Mother-without-children (ref.)						
Non-mother	0.074	0.066	0.060	−0.001	−0.001	−0.018
	(0.049)	(0.047)	(0.047)	(0.034)	(0.034)	(0.031)
Mother-with-children	−0.014	−0.025	−0.040	−0.079***	−0.079***	−0.086***
	(0.038)	(0.034)	(0.035)	(0.030)	(0.030)	(0.027)
Coresident spouse		0.045	0.047	0.028	0.027	0.036
		(0.055)	(0.056)	(0.040)	(0.041)	(0.042)
Coresident parents (-in-law)			0.162***	0.138***	0.138***	0.114**
			(0.060)	(0.050)	(0.050)	(0.049)
Part-time				0.651***	0.652***	0.642***
				(0.057)	(0.055)	(0.048)
Self-employment					0.007	−0.126***
					(0.032)	(0.038)
Occupation FE						YES
Constant	2.997***	2.965***	2.959***	2.727***	2.725***	3.020***
	(0.061)	(0.049)	(0.049)	(0.036)	(0.038)	(0.116)
N individual			6281			
N city			315			
Log Likelihood	-7,391.335	-7,390.056	-7,379.800	-6,641.735	-6,641.676	-6,479.792
AIC	14,788.670	14,788.110	14,769.600	13,295.470	13,297.350	13,007.580

Notes: 1. Estimations were weighted by inverse probability of treatment weights (IPTWs). IPTWs were calculated using generalized boosting models on all pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' origin provincial fixed effects, and destination provincial fixed effects, for details on all pre-treatment covariates see Table 4.1.
2. Clustering at the level of destination city was taken into account (R: "svydesign").
3. Robust standard errors obtained from 1000 bootstrap iterations are in parentheses.
4. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Models 2 and 3 demonstrate that for rural migrant women, a co-resident spouse or parent (-in-law) has no significant impact on their hourly earnings. After adding living arrangements, the direct negative influence of being a mother-with-children remains. In

comparison, for urban migrant women, having co-resident parents (-in-law) is associated with a higher hourly earnings (b = 0.162, p-2s $<$ 0.001). After adding family living arrangements, however, the direct influence of motherhood remains the same (insignificant).

As for the influence of work arrangements, Model 4 indicates that working part-time is associated with a higher hourly earnings for both rural and urban migrant women. Self-employment is positively associated with the hourly earnings of rural migrant women (Model 5, Panel A: b = 0.099, p-2s $<$ 0.001), but not for urban migrant women. After controlling for work arrangements, among rural migrant mothers, the earnings penalty of living with children slightly increased, whereas for urban migrants, those who are living with children now suffer from a significant 8% hourly earnings cost compared to mothers-without-children (Models 4 and 5, Panel B: b = $-$0.079, p-2s $<$ 0.001).

Since the characteristics of occupation may also mitigate the level of the wage penalty, we checked the influence of work arrangements controlling for occupation. After controlling for occupation, the within-occupational earnings disadvantage of living with children is still significant for both rural and urban migrant mothers (Model 6). The influence of working part-time also remains. However, the influence of self-employment on rural migrant women's hourly earnings disappeared, indicating that this influence is mainly attributable to differences between occupations. In comparison, for urban migrant women, the influence of self-employment became significantly negative after controlling for occupation, suggesting that within the same occupation, self-employment is a relatively worse-off job arrangement for urban migrant women.

All in all, the weighted estimation of the influence of living with children, as listed in Table 4.2, is significantly negative for both rural and urban married migrant women, after controlling for occupation. Our first hypothesis (H1) on the motherhood penalty of living with children on migrant women's hourly earnings is generally supported for both rural and urban migrant women.

4.5.3 Examining the mediation effects of family support and work-schedule flexibility

Do family support and work-schedule flexibility help to alleviate the earnings penalty on migrant mothers? Figure 4.1a illustrates that, in line with our expectation, rural migrant mothers-with-children are more likely to co-reside with a spouse and parents (-in-law) than mothers-without-children (see Table C.1 for details). However, rural migrant women with co-residing spouse or parents (-in-law) do not earn more than other rural migrant women. This means that a co-resident spouse or parents (-in-law) do not help to alleviate rural mothers' earnings cost of living with children . Rural migrant mothers-with-children are also more likely to work part-time and be self-employed than mothers-without-children. These flexible work arrangements are positively associated with women's hourly earnings. The

indirect effects of part-time work, χ^2=0.026, p-2s<0.001, and self-employment, χ^2=0.007, p-2s<0.001, are significantly positive.

Urban migrant mothers-with-children are also more likely to co-reside with their spouses and parents (-in-law), and living with parents (-in-law) is positively associated with the hourly earnings of mothers; see Figure 4.1b. This may be because urban migrant mothers can afford family migration. However, the indirect effect of co-resident parents (-in-law) is not significant. In addition, urban migrant mothers-with-children are more likely to work part-time, but not be self-employed, and those mothers who do part-time work earn more than mothers with full-time work . Similar to rural migrant mothers, the indirect effect of part-time work is significantly positive (χ^2=0.081,p-2s<0.05).

Therefore, our hypothesis on family support (H2), which assumes that mothers-with-children are more likely to live with spouses and parents (-in-law) and that these living arrangements help mothers to alleviate their earnings cost, is only partially supported. Furthermore, H3a—on the compensating differentials of part-time work or self-employment—is refuted, while the competing hypothesis H3b, which suggests a positive selection on migrant mothers who switch to part-time work or self-employment, is supported.

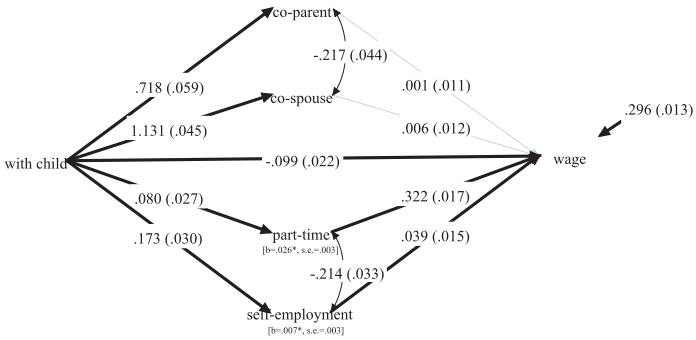
4.5.4 Supplementary analysis

We did several additional analyses to examine the robustness of our results. First, there are good reasons to expect the motherhood penalty among migrant women to vary according to the timing of childbirth and the age of the youngest children. Childbirth commonly leads to work interruptions, which explains a large part of the motherhood wage penalty (e.g., Gangl and Ziefle 2009). Migrants' work and migration are mostly contingent on each other. Therefore, it is interesting to check if childbirth within the time span of current migration matters for migrant mothers' earnings disadvantage. Apart from this, the motherhood penalty may also vary by children's ages because the associated demands for childcare differ (Kahn et al., 2014).

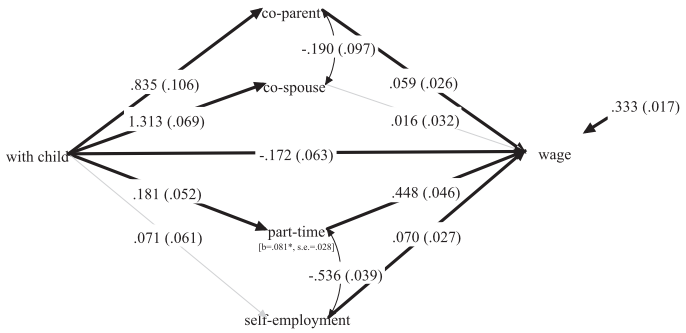
Table C.2 displays that both rural and urban migrant women who have children aged 0 to 3 do not experience the penalty of living with children (Model 1). For rural migrant women, the elder the child is, the larger the earnings cost of living with the child is. The same is true for urban migrant women as well. These results go against what previous research has suggested for the general population (e.g., Kahn et al. 2014). The results indicate that the general pattern that we observe with respect to the motherhood penalty among migrant women is not driven by women with very young children, as it is the case for the general population. Moreover, rural migrant mothers who experienced childbirth after the current migration earn 5% less than other rural migrant women. After controlling for the direct influence of work interruptions due to childbirth, the earnings penalty of being a mothers-without-children compared to a non-mother disappeared. The earnings penalty

Figure 4.2: Direct and indirect effects of living with children on mothers' hourly income, results from structural equation models, married women aged 16 to 50

(a) Rural hukou



(b) Rural hukou



Note: 1. Path diagrams are based on the results of structural equation models, for details see Table A1. 2. Estimations weighted by the propensity score weights (IPTWs), which were obtained using generalized boosting models on pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' (*hukou*) origin provincial fixed effect, and destination provincial fixed effect. For details on the pre-treatment covariates see Table 4.1. 3. The influence of occupation is controlled (effects not shown in the path diagram). 4. Darker lines with arrows indicate significant effects. Grey lines with arrows indicate insignificant effects. Double arrows indicate the estimated correlations between mediators. In-coming arrows indicate the residual variance. 5. "co-parent" indicates coresident parents(in-law). "co-spouse" indciates coresident spouse. 6. Wald test results of the significant indirect effects are shown within the square bracket. 7. Clustering at the city level was taken into account in the model specification. 8. Robust standard errors obtained using 1000 bootstrap iterations are in parentheses.

of living with children remains significant for rural mothers. For urban migrant women, having children after the current migration is associated with a lower hourly earnings, and the negative influence of living with children also remains. After controlling for childbirth timing, urban non-mothers now earn 6% less compared to mothers-without-children who had their child before migrating.

Second, although we controlled for occupation fixed effects in all our analyses, considering the substantial role of occupational characteristics (Yu and Kuo, 2017), it is interesting to compare the influence of motherhood across large occupational groups. We divided women into four occupational groups with presumably different levels of family-friendly policies and work-schedule flexibility: officials and professionals, business, service work, and manual work. As shown in Table C.3, for rural migrant women, the earnings cost of living with children is significant in all occupational groups, except for officials and professionals. The earnings penalty of living with children is largest for manual workers. This is likely because the earnings in factories are most responsive to workers' productivity. For instances, how much a worker at a phone factory earns is direly related to how many phones she can assemble in a hour. The productivity of migrant women is likely affected by living with children at their destination. For urban migrant women, only mothers in the service industry experience a significant earnings penalty of living with children. This indicates that the earnings penalty of urban mothers-with-children that we observed in Table 4.2 is likely driven by mothers performing service-related work.

Third, since we restricted our sample to working migrant women (approximately 80% of all migrant women), our results may be subject to the selection of mothers' labor participation. We performed a set of Heckman selection models accounting for women's selection into the labor force. Limited by our data, we included four extra exogenous variables (number of biological children, household monthly expenses on food in the last year, household monthly expense on housing in the last year, and total household monthly expenses in the last year) on top of the balancing covariates. We assumed that they may jointly shape migrant women's chances of labor participation but not directly influence their hourly earnings in the last month, considering that many migrants' work is temporary and unstable (Fan, 2008). Table C.4 indicates that for rural migrant women, mothers-with-children experience a 5% earnings penalty compared to mothers-without-children, which is similar to the results of our main findings. Furthermore, for urban migrant women, there is a significant earnings cost for living with children, accounting for women's employment selection. However, with no better exogenous variables available in our data, this finding is suggestive rather than conclusive. The Heckman selection model demonstrates that our main findings may not be severely biased by the selection of women's labor participation.

Lastly, following Zhao and Hannum (2019), we performed our analyses using women's income in the last month instead of hourly earnings. As Table C.5 shows, the patterns are largely similar to our main findings, with noteworthy nuanced differences. Rural mothers-

with-children experience a significant income disadvantage compared to mothers-without-children and non-mothers. However, unlike non-mothers' advantage in hourly earnings over mothers-without-children, as observed in our main analysis, we observed a statistically insignificant difference in their monthly income. For urban migrant women, motherhood status has no influence on their monthly income. Note that mothers tend to work longer hours than non-mothers, as contrasted in Figure C.4. The different findings between our main and the supplementary analyses point to the potential confounding of unequal working hours when using monthly income to examine the motherhood wage penalty of migrant women.

4.6 Conclusion and discussion

In this study, we unraveled the influence of motherhood on an understudied and yet large group of disadvantaged women: internal migrant mothers in China. On top of the well-documented disadvantages of being an internal migrant due to institutional barriers, our findings suggest that many migrant women are doubly disadvantaged being a mother. Compared to migrant non-mothers, migrant mothers-with-children suffer the highest disadvantage in hourly earnings, while mothers-without-children suffer a lower but still substantial disadvantage. The non-dichotomous distinction of motherhood status among married migrant women helps shed new light on the shaping mechanisms of motherhood earnings penalty. It is usually difficult to distinguish the influence of motherhood identity per se from that of childcare burden (or, in other words, work-family conflict) since living with children is a norm for most mothers in the general population. However, among Chinese internal migrant women, our findings underscore distinctive effects of motherhood identity and work-family conflict, both of which contribute to shaping motherhood penalty. Such motherhood earnings penalty patterns are observed based on a weighted analytical sample that accounts for systematic differences in a rich set of covariates between migrant non-mothers, mothers-without-children, and mothers-with-children. The patterns remain after we further controlled for the influence of family living arrangements and work characteristics.

Furthermore, we find direct evidence that work interruptions after childbirth impact migrant mothers' earnings and that the earnings penalty of living with children increases with the child's age. For the general population, institutional support (e.g., public nursery schools and preschools) plays an important role in alleviating mothers' childcare burden (Aycan and Eskin, 2005; Blau and Robins, 1991). However, internal migrant mothers have limited access to these public facilities, and without a local hukou, the schools that their children can attend are limited in number and education quality. The enlarged earnings disadvantages for migrant mothers living with their children may well reflect the negative consequences of institutional barriers, not only for migrants themselves but also for their

children.

With regard to whether family support can help to alleviate migrant mothers' work-family conflict and thus reduce their motherhood penalty, we find that while migrant mothers-with-children are more likely to co-reside with spouses and parents (-in-law), such living arrangements do not buffer their earnings disadvantages. This pattern is different from that of urban residents in China, for whom multigenerational co-residence with women's own parents tends to reduce the motherhood penalty (Yu and Xie, 2018). Unfortunately, due to data limitations, we cannot further answer whether migrant mothers living with other family members are more family-oriented and less motivated to compete for better-paid jobs, or the benefits of family support are off-set by their separated labor market.

However, we find that work-schedule flexibility matters in reducing the motherhood penalty for migrant women in China. Migrant mothers-with-children who are more likely to choose part-time work and self-employment suffer less from the penalty of living with children. Researchers often assume that compared to full-time jobs, though part-time jobs offer less hourly earnings, they are more flexible and family-friendly (Killewald and Gough, 2013; Waldfogel, 1997). Among Chinese migrants, however, we find part-time and self-employment offer more earnings than other types of work arrangements. This does not mean that part-time jobs and self-employment are better-off earnings options for migrant mothers. Likely, we could only observe those who earn high enough with part-time jobs or self-employment, because otherwise migrant mothers may stay with their full-time jobs or return home. However, because part-time job and self-employment are more family-friendly, ideally, it should be available for all parents. The economic barrier that migrant mothers-with-children face may push them into unpleasant working arrangements such as working full-time in a factory or withdraw from the labor market completely. Improvements in opportunities related to part-time jobs and small businesses, as well as improvements in other ways to increase work-schedule flexibility, may help these doubly disadvantaged migrant mothers.

MARKET TRANSITION, STATUS ATTAINMENT AND THE ROLE OF MOTHERS' SOCIOECONOMIC STATUS IN CHINA

Chapter 5

Siyang Kong

A slightly different version of this chapter has been submitted to an international academic journal. This chapter has benefited greatly from discussions with Ineke Maas and Marco H.D van Leeuwen. An earlier version of this chapter was presented at the Migration and Social Stratification Seminar at Utrecht University (25 November 2020)

Abstract

Numerous studies have demonstrated the importance of mothers in children's status attainment process in Western societies. Using pooled data from two national representative surveys in China, this study investigates the influence of mothers' socioeconomic status (education and occupation) on the status attainment of men and women in a socialist country and how maternal impact changed with the market reform. In total, 10124 sons and 8984 daughters born between 1943 and 1985 were studied. Using chained multiple imputation and linear regressions, this study finds that mothers' socioeconomic status matters for both sons' and daughters' status attainment and, in the case of daughters, is as important as that of the fathers. With the economic transition, the influence of mothers' education has become more important for both sons' and daughters' education and can thus indirectly benefit their occupational status attainment. Mothers' occupational status, however, has become less important for sons' and daughters' occupational status attainment with the transition, whereas the influence of fathers' occupational status has remained the same. These findings suggest that the re-emergence of traditional gender norms that has come with market reform plays a role in shaping the status attainment process of men and women. Since the reform, the role of mothers has been more restricted to the family domain.

5.1 Introduction

Research has consistently demonstrated that mothers' socioeconomic status (education and occupation) plays an important role in the status attainment process. Mothers' occupational status is positively associated with children's early cognitive development (Parcel and Menaghan, 1990, 1994; Waldfogel et al., 2002), while their socioeconomic status helps children's school attainment at key transitional points, such as secondary school completion and college entry (Buchmann and DiPrete, 2006; Kalmijn, 1994). Mothers are also influential in the transmission of education- and work-related aspirations, which are associated with children's own aspirations and later life success (Hitlin, 2006; Kulik, 2002; Moen et al., 1997; Polavieja and Platt, 2014). Research on occupational status attainment, too, has discussed the possible influence of mothers since the late twentieth century, when the number of (married) women participating in the labor market in Western societies strongly increased (Rosenfeld, 1978). Empirical evidence in Western societies abounds (Beller, 2009; Erola et al., 2016; Hout, 2018; Kong et al., 2020). It has been highlighted that overlooking the influence of mothers can distort conclusions regarding trends in social mobility (Beller, 2009; Hout, 2018).

Little is known, however, about the influence of mothers on children's status attainment in (former) socialist societies. In socialist countries, women's labor force participation has always been high, largely due to states' efforts in promoting gender equality (Whyte and Parish, 1985). Since the late twentieth century, the majority of socialist countries have undergone market reforms that introduced market rules to their central-planning economy. In countries that have experienced market reforms, important changes in the status attainment process have also taken place. A tightened relationship between men's (and recently women's) family background and their status destination has been documented in many of the post-reform countries, such as Russia, Hungary (Gerber and Hout, 2004; Jackson and Evans, 2017; Lippényi and Gerber, 2016), and China (Bian, 2002; Zhou and Xie, 2019). However, these prior studies use the socioeconomic status of fathers to indicate family background, neglecting the role of mothers. To fully understand whether state socialism and its central-planning economy facilitated equality of opportunity while market reforms changed this opportunity structure, it is necessary to include mothers in the discussion.

China provides a useful case to study mothers' influence and changes in the status attainment process with the market reform. China gradually started its market reform in the 1980s. In China, around 80% of women were working in 1996(Wu and Zhou, 2015). Even though this rate had decreased to around 60% by 2019 (The World Bank, 2020), it is still at least as high as in many Western countries; for instance, the rate of female labor force participation in the United States in 2019 was 59% (The World Bank, 2020). The high female labor force participation rate in China means that the majority of Chinese people grew up with both parents working.

Not only is there a high rate of women's labor force participation, but mothers probably also have similar economic and cultural resources as fathers. Gender egalitarian campaigns in China during the period of high socialism largely motivated women to achieve as much as men in the workplace (Honig and Hershatter, 1988). Therefore, it is not unreasonable to expect that in China, mothers play a similar role to fathers in the status transmission process.

Moreover, the market reform in China, like in other (former) socialist countries, led to a rapid growth of private property, which enlarged wealth inequality. High status parents now have the incentive and the opportunity to transfer their advantages to their children. On the one hand, mothers' socioeconomic status may have become more important with the market transition since well-educated and resourceful mothers also have more incentives and opportunities to pass on their advantages to their children. On the other hand, market transitions go hand-in-hand with the spread of the male-bread-winner model and the re-emergence of traditional gender values (Ji et al., 2017; van der Lippe and Fodor, 1998), which may have led to a decrease in mothers' power within the family as well as in the importance of their resources for the status attainment of their children.

Overlooking mothers' influence may thus be even more problematic in China and other (former) socialist countries than in Western countries because of the high female labor force participation. The tightened association between family background and children's status attainment after market reforms that has been identified in previous research could either be partly due to an increasing importance of mothers' status or occur despite a decline in mothers' influence. Examining the influence of mothers and the trends in maternal impact in China, therefore, contributes an important perspective to the understanding of status attainment and social inequality in countries that have experienced market reforms.

This study aims to answer the following questions: 1) *To what extent did mothers' education and occupational status (on top of that of fathers) affect sons' and daughters' status attainment in socialist China*? 2) *How did the influences of mothers' education and occupational status change with the market transition*?

We use data from two national representative surveys in China, the Life Histories and Social Change in Contemporary China of 1996 (LHSCC) and the 2006, 2010, and 2015 waves of the Chinese General Social Survey (CGSS). These two national surveys have a comparable survey design and implementation and have been widely used by scholars interested in gender inequality and social stratification in contemporary China (Wu and Zhou, 2015; Zhou and Xie, 2019).

5.2 Theoretical background

Characteristics of the family of origin are prominent in people's educational and occupational status attainment (Blau and Duncan, 1967; Sewell et al., 1980). The classic status

attainment model proposed by Blau and Duncan (1967) depicts the paths of status transmission from fathers to sons. According to Blau and Duncan, fathers' socioeconomic status has a direct influence on sons' current occupational status and an indirect one via sons' education. Inspired by Blau and Duncan's basic model, numerous studies emerged to examine the influence of fathers in different countries and periods.

In contrast to Blau and Duncan and many subsequent authors, this study includes the influences of mothers in the status attainment model. It is assumed in this study that mothers, like fathers, affect children's status attainment via children's education and occupation. The status attainment of men (sons) and women (daughters) was examined separately, but no hypotheses on gendered pattern of status attainment were formulated. This was mainly because most theories do not make different predictions about the status attainment process of men and women. An exception is the gender role theory, which suggests that children's status is more influenced by the status of the parent of the same gender through gender role modeling (Rosenfeld, 1978). However, there is little empirical support for this proposition (Beller, 2009; Kong et al., 2020; Shu and Marini, 1998).

5.2.1 The role of mothers in children's education in socialist China

According to cultural and social reproduction theory, higher-status parents use strategies to assure a high status for their offspring (Bourdieu and Passeron, 1990). In modern societies, education is a main channel to success. Theories on the influences of parents' socioeconomic status on children's education mainly concern three mechanisms: socialization, parental rational educational choices, and parental motivation and aspiration (for a review, see Breen and Jonsson 2005). The socialization explanation emphasizes parental cultural assets. Educated mothers and fathers influence children's schooling via socialization activities such as reading to children. Rational choice theory suggests that parents strategically invest family resources in children's education according to cost–benefit calculations (Breen and Goldthorpe, 1997). High-status mothers and fathers have more economic, cultural, and social resources to invest in children's education, and they also have more incentives to do so (Parcel and Dufur, 2001; Parcel et al., 2010). Moreover, high-status mothers and fathers tend to have high expectations and aspirations for their children's education, which are influential for children's aspirations and subsequently their school achievements (Glick and White, 2004; Goldenberg et al., 2001; Sewell et al., 1980). In several Western societies, mothers' socioeconomic status (occupation and education) has been found to matter for children's educational outcomes, on top of that of fathers (Buchmann and DiPrete, 2006; Kalmijn, 1994; Korupp et al., 2002), and the impact of mothers' education is comparable to that of the fathers in most Western countries (Marks, 2007).

In China, during the period of high socialism, the state strongly promoted gender equality in the labor force (Whyte and Parish, 1985). State policies were implemented against

gender discrimination in the workplace and supporting "equal work equal pay." Because most workers were hired by state-owned enterprises, strict labor policies largely countered gender wage inequality between and within occupations. Gender equality slogans such as "what a male comrade can do, a female comrade can also do" and "women hold up half the sky" encouraged women to participate widely in the labor force, not just in traditionally female-typed sectors (Honig and Hershatter, 1988). Work units, used to organize employees during the period of high socialism, provided institutional support, such as public child care, for all workers and was essential for encouraging women's labor participation (Honig and Hershatter, 1988; Wu, 2019). Overall, state policies, institutional support at the workplace, and socialist gender norms enabled married women to work full-time and obtain comparable wage income and occupational status to men(Honig and Hershatter, 1988). However, throughout China, traditional gender values have dominated the division of household labor within families (Ji et al., 2017). Next to paid work, women have often been expected to shoulder most domestic responsibilities, such as taking care of the children.

Based on theory concerning the three general mechanisms on the influence of parental socioeconomic status on children's education, it is likely that in the period of high socialism, Chinese mothers influenced their children's educational attainment (1) via socialization, since mothers spent the most time with the children and could therefore easily transmit their cultural assets, (2) by contributing to the family resources that could be invested in children's education, and (3) by expressing similar aspirations and expectations as fathers with respect to their children's educational achievements. Therefore, it is expected that: *Before the market transition, the influences of mothers' education and occupational status on children's educational attainment were positive and of the same size as those of fathers* (H1).

5.2.2 The role of mothers in children's occupational status in socialist China

Characteristics of the family of origin also often directly affect the occupational status of an individual (Blau and Duncan, 1967; Breen and Jonsson, 2005). There are several explanations for such an influence. First, parents may directly transmit their jobs or work-related knowledge and experience to their children. Second, social network resources that parents accumulate at work can be used to facilitate children's job acquisition and status attainment (Lin, 1999; Lin et al., 1981). Working mothers may thus help children obtain high-status jobs via their networks (Beller, 2009). Third, similar to the influences that parents have on children's educational attainment, parents' occupational status influences children's job preference and labor market aspirations through parental aspirations and expectations (Sewell et al., 1957). In Western societies, evidence for a direct influence of

mothers' occupational status on children's occupational status abounds, though the influence of mothers is usually found to be less significant than that of the fathers (Beller, 2009; Erola et al., 2016; Hout, 2018; Kong et al., 2020).

Before the start of the economic reform, almost all Chinese women participated in the labor force, just as men did. Gender disparities in occupational status and wage income were minor due to restrictions imposed by state policies. This means that mothers and fathers acquired similar working knowledge and skills, which could be transferred to children and facilitate their occupational attainment. Moreover, the social network and aspiration mechanisms apply to women just as well as to men. Although to our knowledge no prior research has examined the direct influence of Chinese mothers' occupational status on children's occupational status attainment, there is some evidence suggesting that working mothers facilitated the shaping of labor morality under socialism among children (Entwisle and Henderson, 2000), which might likely encourage boys and girls to work hard and pursue a career. Therefore, it is expected that: *Before the market transition, the direct influence of the occupational status of working mothers on their children's occupational status was positive and of the same size as the influence of the fathers* (H2).

5.2.3 Market transition and trends in maternal influences

Scholars interested in social stratification in socialist countries have suggested that pre-reform socialist countries lacked the kind of social stratification observed in Western societies (Parkin, 1972; Szelenyi, 1998). This is mainly because in state-socialist countries, private ownership of properties was prohibited, and political and economic institutions were established to eliminate wage differentials and promote equality in all aspects. However, some researchers also point out that in socialist countries, some social strata managed to maintain their privileged position by exerting political and bureaucratic influence. For example, people with managerial positions had greater control over public-owned resources than workers, though income differentials were not necessarily evident (Parkin, 1972). We therefore expected, as stated in the previous paragraph, that fathers' and mothers' resources influenced the educational and occupational attainment of their children.

After the start of the market transitions, in general, egalitarian principles were replaced by competitive market-oriented rules. A private sector emerged and developed rapidly. At the same time, state policies and institutions that had previously guaranteed a relatively equal distribution of wage income and educational resources were abolished (Wu, 2019). These societal and institutional changes not only offered people an opportunity to accumulate wealth and private properties, but also increased incentives for them to pass on advantages to their offspring. There is significant empirical evidence for an increase in social inequality in educational attainment and income with the market transition in China (Bian and Logan, 1996; Bian and Zhang, 2002; Wu, 2019), as well as evidence for a tightened

association between fathers' status and their children's education and occupational status attainment (Wu and Zhang, 2010; Zhou and Xie, 2019). Prior research on the influence of Chinese mothers on children's educational attainment is limited, but a recent study on mothers' social status and children's school achievements in China shows that high-status mothers have a positive influence on children's school performance by managing a closer relationship (*guanxi*) with teachers than working class mothers do (Young, 2020). Moreover, recent research reveals that in China, young girls' work attitudes and job aspirations are also influenced by mothers' employment and occupational status (Zhou, 2020). It is likely that the recently discovered maternal impacts are results of the strengthened status transmission process between mothers and children. We expect that in post-reform China, working mothers have greater incentives and opportunity to transmit their advantages to their children.

Therefore, it is expected that *the influence of mothers' education and occupational status on their children's educational attainment increased after the start of the economic reform* (H3a), and that *the direct influence of mothers' occupational status on their children's occupational status increased after the start of the economic reform* (H4a). If these hypotheses are true, then it is likely that the previously observed increase in the influence of family background after the market reform is (partially) driven by the increase in the influence of mothers' status.

However, after the start of the reform in China, women did not profit as much as men in terms of working opportunity, occupational status, and wage income (He and Wu, 2017; Wu and Zhou, 2015). This is because state policies and institutions that had previously promoted gender equality were abolished. Meanwhile, traditional patriarchal gender values re-emerged with the economic reform (Ji et al., 2017). As a result, the economic resources that mothers possessed did not increase as much over time as the resources of fathers. Moreover, the importance of mothers in decision-making processes in the household, for example on the future of the children, likely decreased.

Therefore, contrary to hypotheses 3a and 4a, two rival hypotheses are formulated as the following: *The influence of mothers' education and occupational status on their children's educational attainment decreased after the start of the economic reform* (H3b), and *the direct influence of mothers' occupational status on their children's occupational status decreased after the start of the economic reform* (H4b).

5.3 Data and operationalization

5.3.1 Data

This study pooled data from two nationally representative surveys: the 1996 Life History of Social Change in Contemporary China (LHSCC) and three waves of the Chinese General

Social Survey (2006, 2010, and 2015; CGSS). The surveys contain rich information on respondents' demographics, education, current occupation, and family background.

The original number of observations from the pooled LHSCC and CGSS was 39375. To obtain the analytical sample, we carried out the following data selection procedure. First, respondents who were born before 1943 were excluded (11.4% of all the cases). This is because this study focuses on the status attainment process in the People's Republic of China, and respondents born before 1943 had started schooling before the establishment of the People's Republic of China (in 1949)[15]. Second, in CGSS, only respondents' current occupation at the time when the survey was conducted is available, but people may change jobs during their lives. Intragenerational job mobility may distort the trends regarding the influence of family background on status attainment (Jarvis and Song, 2017). Following Zhou and Xie (2019), this study restricted its analytical sample to respondents aged between 30 to 65 in an attempt to minimize the impact of intragenerational job mobility, since most career mobility in China takes place before age 30. This data restriction led to the exclusion of 7955 observations (22.8% of the remaining cases). Among the remaining cases (26920), 26.89% had missing values on one of the independent variables, including years of schooling (0.05%), fathers' or mothers' years of schooling (8.83% and 9.08%, respectively), fathers' or mothers' occupational status (8.91% and 19.00%), and marital status (0.02%). Furthermore, 27.58% of the 26920 cases had missing values on the dependent variable of occupational status. This study applied chained multiple imputation to impute cases with missing values for the independent variables (except mothers' occupational status; see below). For missingness of the dependent variable occupational status, multiple imputation is problematic, since it cannot be assumed that respondents who did not report their occupations are similar to those who did. Therefore, a list-wise deletion of missing values on occupational status was performed. In robustness checks, we examined whether this list-wise deletion led to selection bias. We ended up with 19108 cases: 10124 men (sons) and 8984 women (daughters).

5.3.2 Operationalization

Dependent variables

Educational attainment was measured using the *years of schooling* of respondents. The highest level of education is stated in the surveys. It was transformed into years of schooling based on prior research in China (Wu, 2012). This variable ranges from 0 to 19, or from illiterate to post-graduation education. Descriptive statistics of all variables are provided in Table 5.1.

Respondents' occupations are coded in the original data using the International Stan-

[15]In China, the official admission age for primary education is at the age of six. But there are variations in the actual age that children start (primary) schooling.

Table 5.1: Descriptive statistics of all variables by gender, respondents aged 30 to 65

	Sons				Daughters			
	Mean/%	SD	Min	Max	Mean/%	SD	Min	Max
Dependent variables:								
Education	9.46	3.70	0	19	8.27	4.47	0	19
Occupational status	36.31	16.30	10	90	34.17	15.32	10	90
Independent variables:								
Mothers' education	2.59	3.79	0	19	2.83	3.90	0	19
Mothers' occupation	24.74	9.88	10	88	25.21	10.31	10	88
Housewife mother	0.22		0	1	0.20	0.44	0	1
Fathers' education	4.50	4.30	0	19	4.64	4.37	0	19
Fathers' occupation	29.99	15.69	10	90	30.77	16.25	10	90
Birth cohort								
1946-1971	80.49				77.48			
1972-1985	19.50				22.52			
Control variables:								
Age	44.62	8.99	30	65	43.35	8.59	30	65
Han Chinese	0.93		0	1	0.92		0	1
Urban *hukou*	0.46		0	1	0.46		0	1
Married	0.92		0	1	0.92		0	1
Family agricultural background	0.68		0	1	0.68		0	1
Observations	10124				8984			

Notes: 1. Summary statistics of imputed data with 10 imputations

dard Classification of Occupations (ISCO68 in the LHSCC and ISCO88 in the CGSS). This study transforms ISCO codes into the international Social-Economic Index of occupational status (ISEI68 and ISEI-88) scale (Ganzeboom et al., 1992). The ISEI scale is continuous and ranges from 10 to 90 (Ganzeboom et al., 1992). A higher value on the ISEI scale indicates a higher social status of an occupation.

Independent variables

In the survey, fathers' and mothers' highest level of education were asked. Following the same procedure of measuring respondents' education, fathers' and mothers' *years of schooling* were obtained based on their highest level of education. The correlation between fathers' and mothers' years of schooling is 0.64, which is relatively high.

The surveys ask for retrospective information on parents' occupations when the respondents were socialized: "What was the occupation of your father/mother when you were 14?" (18 for CGSS 2006). The occupational titles were already coded using ISCO (ISCO68 in the LHSCC and ISCO88 in the CGSS). Like with respondents' occupations, parents' occupational codes were transformed into values on the ISEI-88 scale (Ganzeboom et al. 1992). The correlation between fathers' and mothers' occupational status

(ISEI) is moderate (0.47).

Although not common, representing 19% of those surveyed, some Chinese mothers did leave the labor market to take care of the family (Wu and Zhou, 2015). This study includes a dichotomous variable indicating whether the mother was a housewife when the child was socialized. If a mother's occupational title was missing, it was assumed that she was a housewife. In order to keep these housewife mothers in the analyses, an average occupational status of all working mothers was assigned to housewife mothers. This practice is preferred over multiple imputation of missing information on housewife mothers because it cannot be assumed that housewife mothers are similar to those who have the same observed characteristics but stay in the labor market (Allison, 2002).

In this study, changes in the influences of mothers' (and fathers') status over birth cohorts was examined. Since the focus of this study was on the changes in the status attainment process with the market reform, two *birth cohorts* were distinguished: those who were born and started schooling before the start of the market transition, or the cohort of 1943–1971; and those who were born and educated during the transition, the cohort of 1972–1985.

Control variables

To account for possible confounding influence of the respondents' individual characteristics, respondents' age, ethnicity, household registration (*hukou*) status, and marital status were controlled in all analyses. These characteristics have been found to influence individuals' educational attainment, job acquisition, and status attainment in China (Maurer-Fazio et al., 2011; Wu and Song, 2014; Wu and Treiman, 2007; Wu and Zhou, 2015). Respondents' *years of schooling* was also controlled when examining the direct influence of parents' status on children's occupational status.

Socioeconomic transformation in China is a multifaceted process. Ignoring fundamental structural changes in the labor market may bias our analyses of the patterns of social mobility (Knigge et al., 2014; Zhou and Xie, 2019). Therefore, *family agricultural background*, which is a dichotomous variable measuring whether either one of the parents was a farmer, was controlled when examining the trends in the influence of parental status with the market transition.

5.4 Analytical strategy

To answer the research questions regarding the extent to which mothers' socioeconomic status affected children's status attainment in socialist China and during the economic transition, this study uses linear regression models for educational and occupational status. Models are estimated separately for men (sons) and women (daughters) and birth cohorts.

In model one and two, the education and occupational status of the mothers and fathers are examined separately (model 1: mother-only model; model 2: father-only model). In model three, mothers' and fathers' education and occupational status are examined simultaneously (both-parents model) to show the additive influences of mothers' status on top of the fathers, and vice versa. All models are estimated using ordinary least squares (OLS) regression with robust standard errors to account for heteroscedasticity. Respondents are nested within the province that they are living in. We, therefore, checked the intra-class correlation (ICC) at the province level to determine whether a multilevel data analysis structure was needed. The estimated ICCs in all models were below 0.05, which means that multilevel analysis is not necessary in this study.

In addition to OLS regressions, we employed structural equation modeling to estimate changes in the indirect effect of mothers' (and fathers') socioeconomic status on children's status attainment simultaneously. Post-hoc statistical tests, or F-tests, were used to test the significance of changes in the direct and indirect effects of parental socioeconomic status.

We also checked the variance inflation factor (VIF) in all models for multicollinearity, since the correlations between mothers' and fathers' socioeconomic status are reasonably high. The estimated VIFs in all models vary between 1 to 3, indicating no multicollinearity issue.

5.5 Results

5.5.1 Patterns of educational and occupational status attainment in socialist China

To determine whether mothers played a role in the status attainment process of sons and daughters in socialist China, the mother-only model, father-only model, and both-parents model are compared. Table 5.2 summarizes the results. For sons' and daughters' education, the explained variance (R2) of the mother-only model is 0.27 and 0.40, respectively, as shown in the second column of Table 5.2. Not only is the explained variance of the mother-only model comparable to that of the father-only model (0.29 and 0.40), but it is also similar to that of the both-parents model (0.30 and 0.41).

For children's occupational status attainment, the mother-only, father-only, and both-parents models explained 32 to 33% of the variance in sons' occupational status and 43% to 44% of the variance in daughters' occupational status. This means that the mother-only model is as good as the other models in modeling the associations between family background and educational and occupational attainment. Moreover, the resources of fathers and mothers are highly correlated. When mothers' status is deleted from the model, its effect is covered by that of fathers' status, and vice versa. In line with previous research, family background was more important for status attainment of girls than for that of boys

Table 5.2: Summary of the results of linear regressions of sons' and daughters' education and occupation as function of mothers' education, mothers' occupation, housewife mother, fathers' education, and fathers' occupation, respondents of cohort 1943-71 aged 30 to 65

	Model fit						
Model description	df	R^2	β_1Meduc	β_2Mocc	β_3HWM	β_4Feduc	β_5Focc
Education							
Sons							
1 Mother-only	8	0.274	0.169	0.026	−0.043		
2 Father-only	7	0.289				0.209	0.061
3 Both-parents	10	0.295	0.075	.	−0.040	0.165	0.051
Daughters							
1 Mother-only	8	0.398	0.190	0.034	−0.022		
2 Father-only	7	0.400				0.196	0.055
3 Both-parents	10	0.411	0.120	0.024	.	0.128	0.050
Occupational status (ISEI)							
Sons							
1 Mother-only	9	0.322	0.040	0.036	.		
2 Father-only	8	0.324				0.024	0.069
3 Both-parents	11	0.325	.	.	0.024	.	0.066
Daughters							
1 Mother-only	9	0.430	.	0.116	0.053		
2 Father-only	8	0.432				0.033	0.111
3 Both-parents	11	0.438	.	0.100	0.056	.	0.100

Notes: 1. β_1, β_2 and β_3 indicate the standardized coefficients of mothers' education, mothers' occupation, and whether or not the mother is a housewife. β_4 and β_5 indicate the standardized coefficients of fathers' education and occupation.
2. Only significant coefficients ($p < .5$) are presented in the table. Dots indicate insignificant effects (for details see Table D.1, Table D.2, Table D.3 and Table D.4).
3. All models controlled for the influences of respondents' age, ethnicity, *hukou* status, marital status, and birth cohorts. Respondents' education is controlled when analyzing the influence of parental status on their occupation.

(Zhou and Xie, 2019).

5.5.2 Influences of mothers' socioeconomic status on children's education

For the actual effects of mothers' and fathers' socioeconomic status and the comparison of the effect sizes of mothers' and fathers' influences in the high socialist period, we focus on the both-parents model. Standardized coefficients are shown in Table 5.2.

For *sons' education*, mothers' education was positively associated with sons' education, $\beta_1 = 0.08$, p-2s < 0.001. It was significantly smaller than the association between fathers' and sons' education, $\beta_4 = 0.17$, F(1,2344.6) = 8.99, p-2s < 0.01. There was also a small but significantly positive association between fathers' occupational status and sons' education, $\beta_5 = 0.05$, p-2s < 0.001, and this association was comparable to that of mothers' occupational status, F(1,2825.4) = 2.42, p-2s = 0.12. However, the influence of mothers' occupational status was not significant in itself. Having a housewife mother was negatively associated with sons' education, $\beta_3 = -0.04$, p-2s < 0.001, compared to sons who had working mothers with an average occupational status (ISEI = 25). After including mothers' schooling and occupational status, the effect size of fathers' education decreased significantly from 0.21 in the father-only model (model 2) to 0.17 in the both-parents model, F(1,2301.5) = 54.43, p-2s < 0.001, while no significant change was observed for fathers' occupational status. Overlooking the influences of mothers was associated with a substantial overestimation, of 19%, of the influence of fathers' education on sons' education[16]. Mother-only models are rare in the literature. According to our results, the influence of mother's education would be overestimated by more than 50% in these models.

The influence of mothers' education on *daughters' education* in the both-parents model was positively significant, $\beta_1 = 0.12$, p-2s < 0.001, and was of the same size as the influence of fathers' schooling, $\beta_4 = 0.13$, F(1,1136.4) = 1.07, p-2s = 0.30. Mothers' occupational status was also significantly associated with daughters' education, though weakly, and it was also comparable to that of the fathers, 0.02 versus 0.05, F(1,2121.4) = 0.01, p-2s = 0.93. Having a housewife mother had no significant influence on daughters' education (compared to working mothers with an average status). Relative to that in the father-only model, the effect size of fathers' education in the both-parents model dropped by 35%, F(1, 887.8) = 130.95, p-2s < 0.001, and the effect size of fathers' occupational status, which was small to begin with, dropped by 9%, F(1,14743.4) = 37.86, p-2s < 0.001. These significant changes in the effect sizes of fathers' education and occupation again indicate an overestimation of the effects of fathers in the father-only model.

To summarize, for both sons' and daughters' education, mothers' education was influential, and in the case of daughters it was just as important as fathers' education. The

[16]This number is calculated using: $\Delta\beta_4/\beta_4$ in Model 2, namely (0.21−0.17)/0.21

influences of fathers' and mothers' occupational status on daughters' education were small but comparable, whereas only fathers' occupational status mattered for sons' education. Overlooking maternal impacts was associated with a substantial overestimation of fathers' influences for both sons' and daughters' education. This means that our first hypothesis, which states that the influences of mothers' socioeconomic status were positive and of the same size as those of the fathers, is partially supported, namely for daughters.

5.5.3 Influences of mothers' socioeconomic status on children's occupational status

For *sons' occupational status*, the both-parents model shows that it was influenced by fathers' occupational status, $\beta_5 = 0.07$, p-2s < 0.001, whereas fathers' education had no significant influence. Having a housewife mother was associated with a higher occupational status of sons compared to having a working mother with an average occupational status. Mothers' socioeconomic status had no influence on sons' occupational status attainment.

As for *daughters' occupational status*, in the both-parents model, mothers' occupational status was positively associated with daughters' occupational status, $\beta_2 = 0.10$, p-2s < 0.001, and this influence was comparable to that of fathers' occupational status, $\beta_5 = 0.10$, $F(1,5795.4) = 2.64$, p-2s $= 0.10$. Compared to daughters with an average working mother, having a housewife mother significantly increased daughters' occupational status, $\beta_5 = 0.06$, p-2s < 0.05. When comparing the effect sizes of fathers' education and occupational status in the father-only model and in the both-parents model, we see that the influence of fathers' education and occupation dropped by 27% and 10%, respectively, but neither of the changes is significant.

Our results show that mothers matter for daughters' occupational status attainment just as much as fathers do, but this is not the case for sons' occupational status attainment. Our second hypothesis, which assumes that the direct influence of mothers' socioeconomic status on children's occupational status is positive and of the same size as that of the fathers, is supported only for daughters. For sons' occupational status attainment, only fathers' occupational status matters.

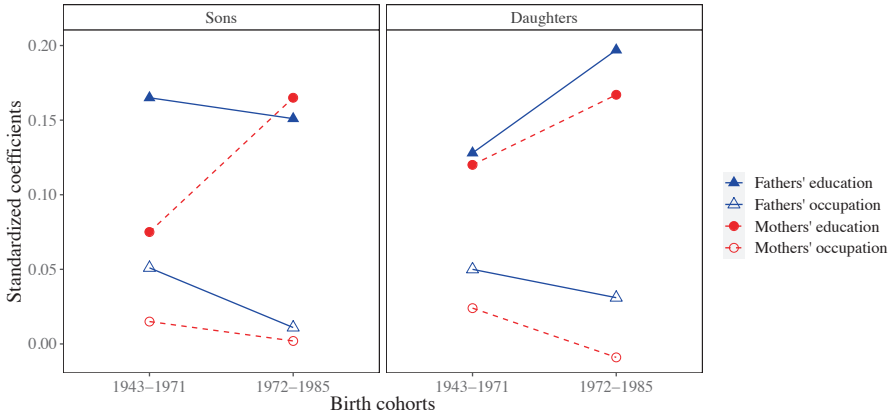
5.5.4 Trends in maternal impacts

Using the both-parents model, the changes in the influence of family background on children's schooling and occupational status were analyzed. The main differences between birth cohorts are shown in Figure 5.1 and 5.2 (for detailed results in education attainmen, see Table D.1 and D.2, and for detailed results in occupational status attainment, see Table D.3 and D.4).

The left panel of Figure 5.1 shows the effects of fathers' and mothers' education and

occupation on *sons' education*. The influence of fathers' education remained the same across the cohorts, F(1, 514.9) = 0.23, p-2s = 0.63, whereas the impact of mothers' education significantly increased from 0.08 to 0.17 across the cohorts, F(1, 592.1) = 5.40, p-2s < 0.05. The influence of mothers' education was much lower than that of fathers' education in the high socialist period, F(1,2344.6) = 8.99, p-2s < 0.01, but it became comparable to that of the fathers with the economic transition, F(1, 530.2) = 0.23, p-2s = 0.63. The influence of fathers' occupation on sons' education was small but significant in the cohort of 1943–1971, β = 0.05, p-2s < 0.001 (see Table D.1), and this influence dropped to 0.01 in the cohort of 1972–1985. The change in the influence of fathers' occupation is, however, insignificant, F(1,2802) = 3.41, p-2s = 0.07. The influence of mothers' occupation is small and insignificant in both cohorts, and its change across cohorts is also insignificant.

Figure 5.1: Trends in the influence of fathers' and mother's education and occupation on children's education by birth cohorts



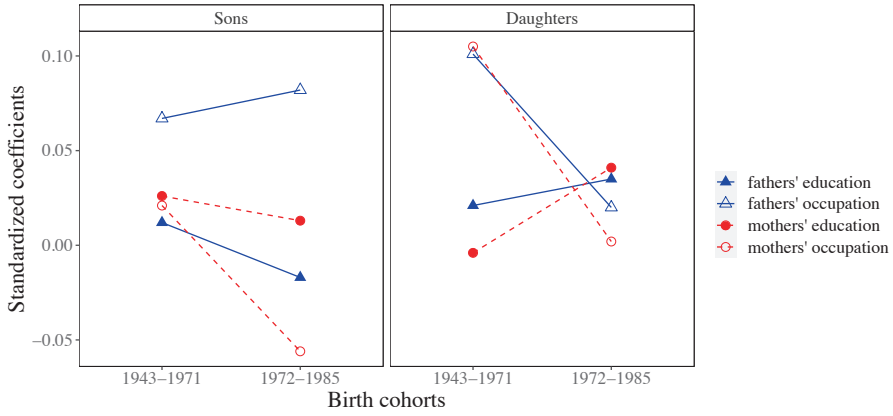
Note: 1. The figures are on the basis of both-parents models in Table D.1 and D.2. 2. All models of parental education and occupation controlled for respondents' age, ethnicity, marital status, and *hukou* status using imputed data.

To determine whether the conclusions with respect to trends in educational inequality based on father-only models would be misleading, we compared the change in the influence of fathers' education in the father-only model to that in the both-parent model. The results of the comparisons are shown in the appendix (Figures D.1). Indeed, the change in the effect of fathers' education on sons' education is different after including mothers' socioeconomic status. The left panel of Figures D.1) shows that in the father-only model, the influence of fathers' education on sons' education increases across the cohorts, whereas the both-parents model reveals that this apparent increase in the influence of fathers' education is actually driven by the increasing importance of mothers' education.

For *daughters' education*, the right panel of Figure 5.1 reveals that the influence of fathers' education significantly increased across the cohorts, $F(1, 572.1) = 3.86$, p-2s < 0.05, from 0.13 to 0.20. The influence of mothers' education also increased, from 0.12 to 0.17, but this increase is not significant. The influence of mothers' and fathers' occupational status on daughters' education was slight and did not change over the cohorts. Due to the similarity in changes of the effects of fathers and mothers, conclusions on these changes from the father-only model are similar to those from the both-parents model.

The left panel of Figure 5.2 demonstrates that the direct influences of both parents' education on sons' occupational status were marginal and stable across the cohorts, which is in line with previous research. Blau and Duncan's classic model does not even include a direct effect of fathers' education on sons' occupation. As for the changes in the influence of parents' occupational status, the left panel of Figure 5.2 shows that the influence of fathers' occupational status has changed marginally from 0.07 to 0.08, and this change is not significant. The influence of mothers' occupational status changed significantly across cohorts from 0.03 to -0.04, $F(1,52294.8) = 4.62$, p-2s < 0.05. However, within each cohort, the influence of mothers' occupation is statistically insignificant.

Figure 5.2: Trends in the influence of fathers' and mother's education and occupation on children's occupation by birth cohorts



Note: 1. The figures are on the basis of both-parents models in Table D.3 and D.4. 2. All models of parental education and occupation controlled for respondents' own education, age, ethnicity, marital status, and *hukou* status using imputed data.

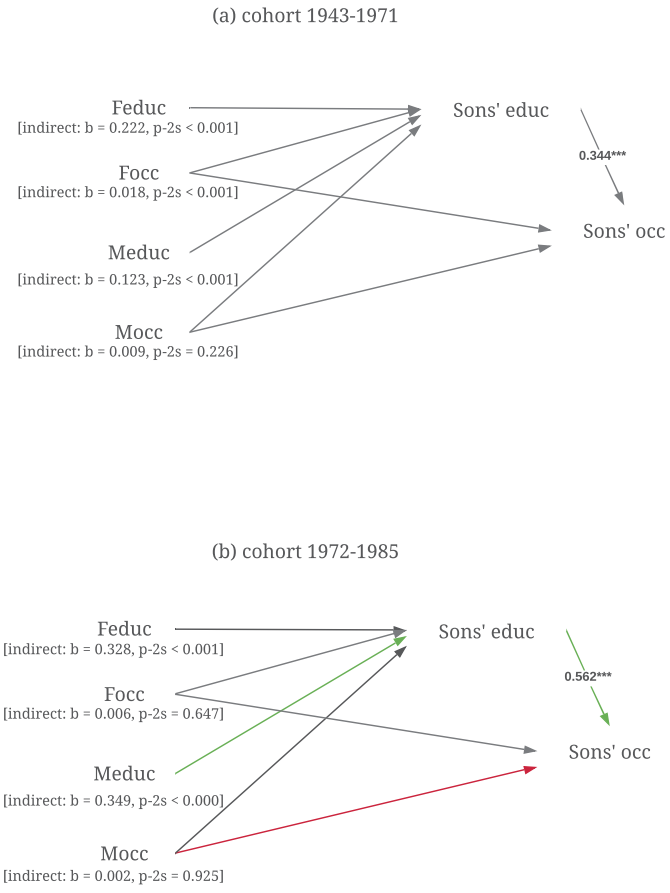
The direct influence of parents' education on daughters' occupational status was small and negligible, as shown in the right panel of Figure 5.2 (Table A5.4). It is further shown that the influence of fathers' occupational status decreased across the cohorts, from 0.10 to 0.02, and this change is significant, $F(1,2661.6) = 7.44$, p-2s < 0.01. The influence of

mothers' occupational status also dropped substantially across the cohorts, $F(1,247589.3) = 18.69$, p-2s < 0.001.

To summarize, after the start of the market reform, for both sons' and daughters' educational attainment, parents' occupational status was not very important, and this did not change. Mothers' education became more important with the transition. Therefore, our hypothesis 3a on the increasing importance of mothers' education and occupational status on children's education after the economic transition is only partially supported for the influence of mother's education. For children's occupational status attainment, mothers' occupation became less important for both sons and daughters after the start of the economic transition. Therefore, hypothesis 4a on the increasing direct influence of mothers' occupational status on children's status attainment is refuted, whereas the competing hypothesis 4b on the decreasing influence of mothers' occupational status is supported.

To further illustrate the changes in sons' and daughters' status attainment process after the market reform, Figures 5.3 and 5.4 present four path diagrams that depict the pathways in which parental socioeconomic status exerts influences on children's occupational status attainment by birth cohort. The both-parents model is used for each cohort to examine the indirect influence of parents' socioeconomic status on children's status attainment.

Figure 5.3: Trends in the indirect influences of fathers' and mother's education and occupation on sons' occupational status by birth cohorts



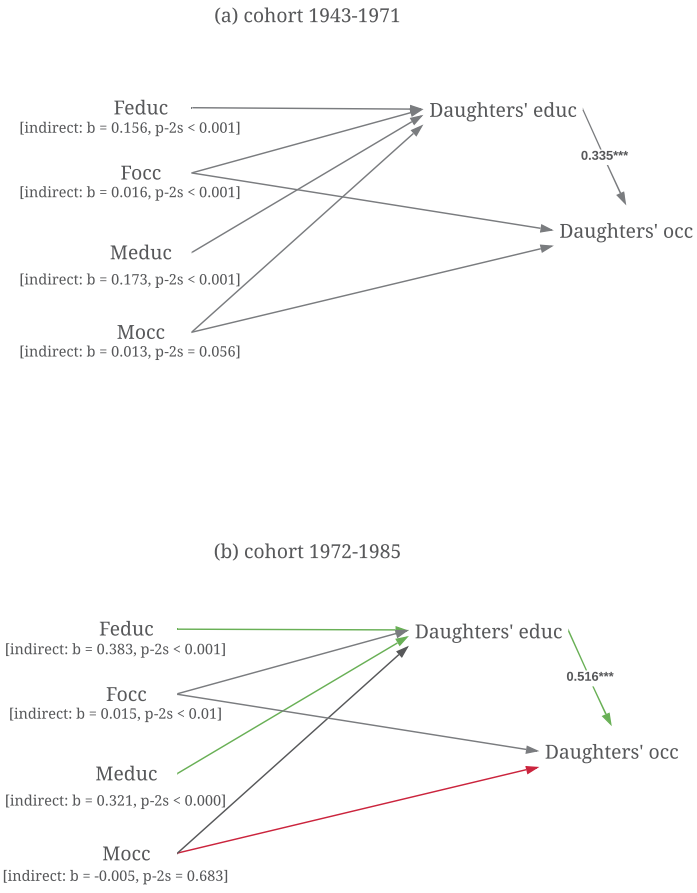
Note: 1. Changes in the standardized indirect effects of parental socioeconomic status on children's occupation are indicated by the color of the arrows: Green arrows indicate an increase in the standardized indirect influence of parental socioeconomic status; Red arrows indicate a decrease in the standardized direct influence of parental socioeconomic status. Dark arrows indicate an insignificant change. 2. All models are based on imputed data, which controlled for mothers' employment status, respondents' age, ethnicity, marital status, *hukou* status, and family agricultural background, the effects of which are not shown in the figures. 3. Details of the model results are available upon request.

Figures 5.3 (panel b) shows that for men born between 1972 and 1985, their own education became a more important predictor of their occupational status, compared to men born between 1943 and 1971 (from 0.34 to 0.56). The total indirect influence of fathers' education on sons' occupational status via sons' education increased, from 0.22 to 0.33,

though such change is not significant, $F(1, 458.7) = 3.20$, p-2s = 0.08. There was a decline in the indirect influence of fathers' occupation on sons' occupation via sons' education, but it was not significant either. On the contrary, the indirect influence of mothers' education increased significantly from 0.12 to 0.35, $F(1,1270.8) = 15.32$, p-2s < 0.001. Mothers' education became more important for the occupational status attainment of men who were socialized after the economic transition compared to men of birth cohort 1943–1971. This increase is a result of the combination of an increased maternal impact on sons' education and an increased return to education in terms of occupational status. Mothers' occupational status, however, became less important for sons' occupation through, as previously shown, a decrease in the direct influence of mothers' occupation on sons'. The indirect influences of mothers' occupation on sons' occupation via sons' education did not change and were insignificant in both cohorts.

For women born before the start of the market reform, Figures 5.4 shows that, similar to men, their own education became more important for their occupational status attainment (from 0.34 to 0.52). For young women born between 1972 and 1985, their fathers' and mothers' education became more important for their educational attainment, which led to an increasing influence of parental education on women's occupational status. However, the increase in the indirect effect of parental education on daughters' occupational status attainment is compensated by a decrease in the direct influence of mothers' occupation on daughters' occupation.

Figure 5.4: Trends in the indirect influences of fathers' and mother's education and occupational status on daughters' occupational status by birth cohorts



Note: 1. Changes in the standardized indirect effects of parental socioeconomic status on children's occupation are indicated by the color of the arrows: Green arrows indicate an increase in the standardized indirect influence of parental socioeconomic status; Red arrows indicate a decrease in the standardized direct influence of parental socioeconomic status. Dark arrows indicate an insignificant change. 2. All models are based on imputed data, which controlled for mothers' employment status, respondents' age, ethnicity, marital status, *hukou* status, and family agricultural background, the effects of which are not shown in the figures. 3. Details of the model results are available upon request.

5.5.5 Robustness check

Selection bias in terms of occupational status may have affected our results. People with lower occupational status may be more inclined not to report their occupation. Men and

women who have no occupation are also different from those who have an occupation. The missing pattern on occupational status is, therefore, not random. To examine to what extent the selection of occupational status biased the conclusions, we applied Heckman selection models to multiple imputed data on the missingness of the independent variables. We included *household income in the previous year*, *number of children*, and all independent and control variables in the selection model. The results of a set of Heckman selection models are shown in Table D.5 and D.6.

Table D.5 displays the patterns of status attainment in socialist China, taking possible selection into account. It appears that for both sons and daughters, there is a selection based on labor market participation. By comparing the model coefficients in Table D.5 and the corresponding table for the main analyses (Table D.3), it appears that the influence of mothers' occupation on sons' status attainment is the most affected by the selection bias. If all men's occupational status were observed, their mothers' occupation would have a significant positive influence on their occupational status attainment. However, when only the occupational status of men who reported their occupational status is examined, the influence of mothers' occupation disappears.

For daughters' status attainment, the direction as well as the statistical significance of the parental influences are comparable to the results in the main analyses (Table D.6 versus D.4). The trends in parental influence on sons' and daughters' occupation between the two birth cohorts in the Heckman correction models are also comparable to those in the main results.

5.6 Conclusion and discussion

The growing number of working mothers has stimulated research on the influence of mothers' socioeconomic status on children in Western societies. However, we know little about the influence of mothers in (former) socialist countries that experienced dramatic socioeconomic transitions due to market reforms. Using pooled data from two national representative surveys in China, this study examined the influences of mothers' (and fathers') socioeconomic status over the market reform and possible changes therein.

The first finding of this study is that in socialist China, mothers' education was as important as fathers' education for daughters' education and that it also mattered, though less so, for sons' education. This finding is of substantive interest, as it brings the influence of mothers back in the debate on the intergenerational transmission of inequalities in socialist countries. Overlooking the influence of mothers' education leads to a substantial overestimation of the influence of fathers in the transmission of educational attainment for both sons and daughters. This finding also corresponds to what previous research has found for Western societies (e.g., Kalmijn 1994).

For sons' and daughters' occupational status attainment, we found a slightly different

pattern to that for their educational attainment. For daughters' occupational status, mothers' occupational status mattered, and its influence was comparable to that of fathers. For sons' occupational status, however, only fathers' occupational status mattered. This may be due to the fact that in socialist China, women were more likely to enter male-dominated occupations, but men were not likely to enter female-dominated occupations, most likely because of the gap in occupational status between male- and female-dominated occupations (Honig and Hershatter, 1988). Mothers' work-related knowledge, experiences, and social network resources might therefore not always be relevant for sons, whereas fathers' resources could be relevant for both sons and daughters. This might explain why fathers' occupational status had a positive effect on both sons and daughters. Labor market gender segregation and its association with potential gendered patterns in the status transmission process thus merit more detailed research.

Another main finding of this study is that with the market reform, the influence of parental education on children's education and, in turn, occupation has increased. Moreover, a cross-gender pattern in the indirect influence of parental education on children's occupational status is found. With the economic transition, the indirect influence of mothers' education on sons' occupational status (that is, through sons' education) has increased. Meanwhile, daughters seem to profit more from both fathers' and mothers' education. In this current study, no hypothesis for a differential parental effect for sons and daughters was formulated. However, this finding might have been expected due to other societal changes that happened simultaneously with the market reform. For example, family planning policy, launched in 1979, may have increased the incentives of fathers (and mothers) to invest in daughters' education, with the goal of facilitating daughters' occupational status attainment, particularly in the case of families with only a daughter.

With respect to the influence of parental occupational status on children's occupational status attainment, the importance of mothers' occupational status has decreased for both sons' and daughters' occupational status with the market transition. The decrease in the direct and indirect influence of mothers' occupational status on both sons' and daughters' occupational status is in line with the expectation of the influence of the re-emergence of traditional gender norms. The growing importance of traditional gender norms and the male-breadwinner model during the transition may have lowered the power of mothers within the family. Mothers' occupational resources mattered less for children's occupation after the start of the transition.

Taking the results together, this study finds an increasing importance of mothers' education on children's education and occupation and a declining importance of mothers' occupational status on children's occupation. These findings suggest that mothers' cultural resources enable them to better educate their children or to be more involved in their education. These cultural resources are more important for children's status attainment than the economic resources that mothers bring to the family. This finding can be explained by the

re-emergence of traditional gender norms and the male-breadwinner model, which largely restricts the influence of mothers to the household domain, namely nurturing children.

Our findings are more suggestive than conclusive with respect to the mechanisms behind the effects observed. Future research might further investigate the status transmission process in (former) socialist societies in the following directions. First, it could investigate measures for, for instance, mothers' cultural capital, social capital, and aspirations and how they influence children's status attainment directly, as well as how that influence changed with the market transition. Particularly interesting is the question of whether a gendered pattern in parental aspiration and expectation appeared after the start of the market reform, and what the consequences are for women's status attainment.

Second, this study examined trends in parental influence by birth cohort. However, it is likely that the oldest cohort's occupational attainment may have also been affected by the transition. Therefore, to better understand the role of market transition in individual status attainment, a direct measure of market transition may be necessary. Future research could examine how it affects individual status attainment. Moreover, given that the market transition is a multifaceted process, it would be interesting to examine various transitional processes and concomitant societal changes separately. It would also be interesting to carry out cross-country comparisons. Researchers could look into difference in status attainment between China and societies that either experienced a similar economic transition, such as Vietnam, or that share similar cultural values but did not experience market transitions, such as South Korea and Japan.

Lastly, literature has increasingly highlighted the influence of family living arrangements on various aspects of work and family in China and other Eastern Asian societies (Chen, 2005; Chen et al., 2000; Yu and Xie, 2018). Multigenerational households are common in China. Future research could investigate the transmission of socioeconomic status over multiple generations and how it varied with market reform.

This study contributes to the general understanding of the status attainment process in (former) socialist countries. Our findings on the relative increase in the influence of mothers' education on children's status attainment compared to that of mothers' occupational status hint at important societal changes after the start of the market reform. The re-emergence of traditional gender norms in (former) socialist countries and its consequences on the equality of opportunity merit more attention from policy makers, researchers, and the general public.

Chapter A

Chapter 2

Table A.1: Correlation between six province level indicators after standardization

Privatization					
	1.	2.	3.	4.	5.
1. Share of employment in private sector	1.00				
Economic development					
2. GDP per capita	.59	1.00			
3. Share of tertiary sector added value	.13	.54	1.00		
4. Local average wage	.69	.92	.50	1.00	
5. Share of employment in tertiary sector	.33	.73	.79	.64	1.00

Table A.2: Multilevel linear regression: trends in labor force participation of men and women of three cohorts

	before 1980		1980-1999		2000-2015	
	Men	Women	Men	Women	Men	Women
Constant	0.828***	0.729***	0.834***	0.796***	1.028***	0.995***
	(0.048)	(0.129)	(0.022)	(0.038)	(0.058)	(0.090)
Year						
2003	−0.286***	−0.417***	−0.116***	−0.157***	.	.
	(0.041)	(0.093)	(0.026)	(0.035)	.	.
2005	−0.236***	−0.401***	−0.027	−0.104**	−0.175**	−0.145*
	(0.045)	(0.094)	(0.016)	(0.032)	(0.056)	(0.062)
2006	−0.252***	−0.429***	−0.017	−0.115***	−0.128*	−0.070
	(0.050)	(0.105)	(0.019)	(0.035)	(0.051)	(0.074)
2008	−0.207***	−0.315*	0.009	−0.035	−0.103**	−0.066
	(0.059)	(0.127)	(0.022)	(0.035)	(0.038)	(0.058)
2011	.	.	0.068***	0.062	−0.110*	−0.043
	.	.	(0.015)	(0.040)	(0.049)	(0.073)
2012	.	.	0.089***	0.042	−0.096*	−0.019
	.	.	(0.013)	(0.039)	(0.046)	(0.055)
2013	.	.	0.082***	0.039	−0.094	−0.058
	.	.	(0.015)	(0.040)	(0.051)	(0.051)
2015	.	.	0.058**	0.010	−0.121*	−0.060
	.	.	(0.019)	(0.036)	(0.048)	(0.062)
Control variables added	Yes	Yes	Yes	Yes	Yes	Yes
$\sigma^2_{province}$	0.006***	0.009***	0.001***	0.004***	0.000	0.002***
	(0.005)	(0.005)	(0.001)	(0.002)	(0.000)	(0.002)
$\sigma^2_{province-year}$	0.006***	0.006***	0.002***	0.004***	0.002***	0.003***
	(0.003)	(0.004)	(0.001)	(0.001)	(0.001)	(0.002)
$\sigma^2_{individual}$	0.142***	0.208***	0.080***	0.191***	0.093***	0.174***
	(0.009)	(0.007)	(0.005)	(0.005)	(0.006)	(0.011)
AIC	985.033	1300.152	2611.000	9740.587	1279.975	3266.661
BIC	1054.032	1368.463	2735.735	9866.560	1373.904	3368.263
LL	−478.516	−636.076	−1287.500	−4852.293	−623.988	−1616.330

Notes 1. Control variables included: respondents' age, *hukou* status, marital status, whether or not having pre-school children, and whether or not having co-resident parents(in-law).
2. All continuous variables are centered around their means.
3. Robust standard errors are in parentheses.
4. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Table A.3: Multilevel linear regression: men's and women's labor force participation on privatization by cohorts

	before 1980		1980-1999		2000-2015	
	Men	Women	Men	Women	Men	Women
Constant	0.806***	0.677***	0.829***	0.890***	1.010***	1.028***
	(0.095)	(0.177)	(0.046)	(0.063)	(0.061)	(0.097)
Privatization	0.004	0.005	0.000	0.002	−0.002*	0.002
	(0.003)	(0.004)	(0.001)	(0.002)	(0.001)	(0.002)
Privatization^2	0.000	0.000	0.000	−0.000	0.000	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year						
2003	−0.259***	−0.351**	−0.110**	−0.228***	.	.
	(0.066)	(0.114)	(0.040)	(0.054)	.	.
2005	−0.222*	−0.348**	−0.022	−0.186**	−0.164**	−0.156*
	(0.095)	(0.126)	(0.037)	(0.061)	(0.056)	(0.064)
2006	−0.245*	−0.384**	−0.013	−0.200**	−0.115*	−0.086
	(0.099)	(0.137)	(0.039)	(0.065)	(0.052)	(0.078)
2008	−0.226	−0.299	0.012	−0.128	−0.081*	−0.090
	(0.120)	(0.177)	(0.044)	(0.068)	(0.040)	(0.070)
2011	.	.	0.069	−0.035	−0.085	−0.069
	.	.	(0.043)	(0.069)	(0.052)	(0.089)
2012	.	.	0.089*	−0.055	−0.069	−0.044
	.	.	(0.040)	(0.069)	(0.049)	(0.070)
2013	.	.	0.083*	−0.059	−0.068	−0.087
	.	.	(0.041)	(0.068)	(0.055)	(0.062)
2015	.	.	0.056	−0.088	−0.090	−0.077
	.	.	(0.046)	(0.065)	(0.053)	(0.078)
Control variables added	Yes	Yes	Yes	Yes	Yes	Yes
$\sigma^2_{province}$	0.004***	0.007***	0.001***	0.004***	0.000	0.002***
	(0.004)	(0.004)	(0.001)	(0.002)	(0.000)	(0.002)
$\sigma^2_{province-year}$	0.006***	0.005***	0.002***	0.004***	0.001***	0.003***
	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.002)
$\sigma^2_{individual}$	0.142***	0.208***	0.080***	0.191***	0.093***	0.174***
	(0.009)	(0.007)	(0.005)	(0.005)	(0.006)	(0.011)
AIC	986.912	1300.868	2614.473	9741.207	1282.863	3266.105
BIC	1065.768	1378.937	2753.067	9881.177	1394.404	3379.660
LL	−477.456	−634.434	−1287.236	−4850.604	−622.432	−1614.053

Notes 1. Control variables included: respondents' age, *hukou* status, marital status, whether or not having pre-school children, and whether or not having co-resident parents(in-law).
2. All continuous variables are centered around their means.
3. Robust standard errors are in parentheses.
4. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Table A.4: Multilevel linear regression: men's and women's labor force participation on economic development by cohorts

	before 1980		1980-1999		2000-2015	
	Men	Women	Men	Women	Men	Women
Constant	0.903***	0.793***	0.851***	0.859***	1.028***	0.997***
	(0.062)	(0.165)	(0.031)	(0.040)	(0.054)	(0.098)
Economic development	0.037	0.091*	0.010	0.043**	0.004	0.005
	(0.020)	(0.039)	(0.010)	(0.016)	(0.011)	(0.018)
Economic development^2	−0.021	0.028	−0.003	−0.006	0.001	0.009
	(0.015)	(0.020)	(0.003)	(0.004)	(0.004)	(0.005)
2003	−0.324***	−0.442***	−0.124***	−0.184***	.	.
	(0.045)	(0.099)	(0.029)	(0.036)	.	.
2005	−0.279***	−0.444***	−0.037	−0.137***	−0.175**	−0.148*
	(0.053)	(0.108)	(0.020)	(0.033)	(0.056)	(0.063)
2006	−0.297***	−0.473***	−0.027	−0.150***	−0.129*	−0.074
	(0.056)	(0.113)	(0.022)	(0.035)	(0.050)	(0.074)
2008	−0.264***	−0.372*	−0.003	−0.081*	−0.105**	−0.072
	(0.067)	(0.151)	(0.027)	(0.039)	(0.037)	(0.060)
2011	.	.	0.052**	0.002	−0.114*	−0.054
	.	.	(0.020)	(0.044)	(0.049)	(0.078)
2012	.	.	0.072***	−0.025	−0.100*	−0.032
	.	.	(0.018)	(0.039)	(0.044)	(0.062)
2013	.	.	0.063**	−0.037	−0.100*	−0.075
	.	.	(0.021)	(0.041)	(0.048)	(0.064)
2015	.	.	0.037	−0.078*	−0.128**	−0.086
	.	.	(0.030)	(0.040)	(0.044)	(0.075)
Control variables added	Yes	Yes	Yes	Yes	Yes	Yes
$\sigma^2_{province}$	0.005***	0.004***	0.001***	0.003***	0.000	0.002***
	(0.004)	(0.003)	(0.001)	(0.003)	(0.000)	(0.002)
$\sigma^2_{province-year}$	0.006***	0.005***	0.002***	0.004***	0.001***	0.003***
	(0.003)	(0.004)	(0.001)	(0.001)	(0.001)	(0.002)
$\sigma^2_{individual}$	0.142***	0.208***	0.080***	0.191***	0.093***	0.174***
	(0.009)	(0.007)	(0.005)	(0.005)	(0.006)	(0.011)
AIC	987.436	1294.829	2614.324	9739.794	1285.158	3264.014
BIC	1066.293	1372.898	2752.918	9879.764	1396.698	3377.570
LL	−477.718	−631.414	−1287.162	−4849.897	−623.579	−1613.007

Notes 1. Control variables included: respondents' age, *hukou* status, marital status, whether or not having pre-school children, and whether or not having co-resident parents(in-law).
2. All continuous variables are centered around their means.
3. Robust standard errors are in parentheses.
4. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Table A.5: Multilevel linear regressions: trends of employment for men (N = 8600) and women (N = 8942) with urban *hukou*

	Model 1		Model 2		Model 3	
	Men	Women	Men	Women	Men	Women
Year (ref: 1996)						
2003					−0.159***	−0.183***
					(0.030)	(0.040)
2005					−0.093***	−0.155***
					(0.021)	(0.032)
2006					−0.082***	−0.151***
					(0.021)	(0.030)
2008					−0.052*	−0.074*
					(0.021)	(0.034)
2011					0.012	0.022
					(0.019)	(0.034)
2012					0.021	0.023
					(0.019)	(0.024)
2013					0.017	−0.002
					(0.017)	(0.030)
2015					−0.018	−0.003
					(0.022)	(0.025)
age			−0.003***	−0.004***	−0.003***	−0.004***
			(0.001)	(0.001)	(0.001)	(0.001)
age2			−0.000***	−0.001***	−0.000***	−0.001***
			(0.000)	(0.000)	(0.000)	(0.000)
Married			0.085***	−0.066***	0.084***	−0.064***
			(0.019)	(0.017)	(0.018)	(0.017)
Preschool children			−0.008	−0.088***	−0.009	−0.091***
			(0.009)	(0.019)	(0.009)	(0.019)
Coresidence			−0.062***	−0.015	−0.063***	−0.015
			(0.011)	(0.014)	(0.011)	(0.014)
Constant	0.876	0.718	0.861	0.838	0.907	0.905
	(0.010)	(0.013)	(0.021)	(0.017)	(0.021)	(0.029)
$\sigma^2_{province}$	0.001***	0.002***	0.001***	0.002***	0.002***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma^2_{province-year}$	0.007***	0.013***	0.007***	0.013***	0.003***	0.005***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.105***	0.189***	0.101***	0.186***	0.101***	0.186***
	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)
AIC	5227.195	10663.439	4953.108	10518.428	4870.375	10434.845
BIC	5255.393	10691.791	5016.550	10582.219	4990.210	10555.338
LL	−2609.598	−5327.719	−2467.554	−5250.214	−2418.187	−5200.422

Standard errors in parentheses

Table A.6: Multilevel linear regressions: trends of employment for men (N = 10541) and women (N = 11289), from CGSS data

	Model 1		Model 2		Model 3	
	Men	Women	Men	Women	Men	Women
Year (ref: 2003)						
2005					0.068***	0.043***
					(0.026)	(0.028)
2006					0.081***	0.049***
					(0.025)	(0.030)
2008					0.111***	0.126***
					(0.028)	(0.032)
2011					0.154***	0.204***
					(0.028)	(0.035)
2012					0.174***	0.199***
					(0.026)	(0.030)
2013					0.169***	0.184***
					(0.028)	(0.032)
2015					0.139***	0.173***
					(0.027)	(0.033)
age			−0.003***	−0.003***	−0.003***	−0.004***
			(0.001)	(0.001)	(0.001)	(0.001)
age2			−0.000***	−0.001***	−0.000***	−0.001***
			(0.000)	(0.000)	(0.000)	(0.000)
Married			0.078	−0.098	0.078	−0.097
			(0.015)	(0.018)	(0.015)	(0.018)
Urban *hukou*			−0.026***	0.056***	−0.018*	0.069***
			(0.007)	(0.013)	(0.007)	(0.014)
Preschool children			−0.011	−0.123***	−0.012	−0.125***
			(0.008)	(0.013)	(0.008)	(0.014)
Coresidence			−0.064***	−0.011	−0.064***	−0.011
			(0.010)	(0.011)	(0.010)	(0.011)
Constant	0.880	0.690	0.884	0.800	0.769	0.672
	(0.009)	(0.015)	(0.019)	(0.025)	(0.037)	(0.043)
$\sigma^2_{province}$	0.001***	0.003***	0.001***	0.003***	0.001***	0.004***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
$\sigma^2_{province-year}$	0.007***	0.010***	0.006***	0.011***	0.003***	0.004***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
$\sigma^2_{individual}$	0.097***	0.198***	0.094***	0.192***	0.094***	0.192***
	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.006)
AIC	5581.380	13955.577	5249.267	13589.176	5172.060	13503.093
BIC	5610.412	13984.880	5321.786	13662.382	5295.343	13627.542
LL	−2786.690	−6973.788	−2614.633	−6784.588	−2569.030	−6734.546

Standard errors in parentheses

Chapter B

Chapter 3

Table B.1: Between-within model regressing weekly hours on farming as a function of household out-migration dynamics and community characteristics

Farming	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			0.566	0.609	0.609	0.094	0.642
			(0.568)	(0.638)	(0.831)	(0.717)	(0.570)
farmer migrated				−0.079			
				(0.909)			
children migrated					−0.137		
					(0.979)		
regional migration level						−8.980*	
						(5.250)	
× out-migration						7.840*	
						(4.550)	
regional patriarchy							−1.290*
							(0.764)
× out-migration							0.938*
							(0.544)
Between individual:							
out-migration			1.107	0.118	−2.327	1.569	0.944
			(1.032)	(1.166)	(1.583)	(1.398)	(1.032)
farmer migrated				4.450*			
				(2.421)			
children migrated					5.052***		
					(1.769)		
regional migration level						30.848***	
						(6.740)	
× out-migration						−16.292*	
						(9.250)	
regional patriarchy							−2.207***
							(0.524)
× out-migration							−0.311
							(1.002)
Control variables							
Return migration		−4.252***	−4.867***	−5.044***	−4.599***	−5.107***	−4.865***
		(1.000)	(1.065)	(1.074)	(1.081)	(1.072)	(1.066)
Education (ref: none)							
Primary school		−1.323***	−1.302**	−1.312**	−1.244**	−1.257**	−1.255**
		(0.509)	(0.509)	(0.509)	(0.510)	(0.510)	(0.509)
Secondary school		−4.029***	−3.961***	−3.943***	−3.895***	−3.862***	−3.897***
		(0.536)	(0.538)	(0.538)	(0.538)	(0.539)	(0.537)
High school		−5.197***	−5.116***	−5.081***	−5.048***	−4.967***	−5.049***
		(0.792)	(0.793)	(0.793)	(0.793)	(0.795)	(0.793)
Technical college		−7.380***	−7.250***	−7.189***	−7.229***	−7.120***	−7.222***
		(1.197)	(1.199)	(1.199)	(1.198)	(1.201)	(1.199)
University		−6.759***	−6.634***	−6.581***	−6.662***	−6.355***	−6.595***
		(1.745)	(1.746)	(1.746)	(1.745)	(1.750)	(1.745)

Continued on next page

Table B.1: (continued)

Married		2.640***	2.648***	2.613***	2.730***	2.565***	2.609***
		(0.706)	(0.706)	(0.706)	(0.707)	(0.707)	(0.706)
Age		0.368*	0.390*	0.388*	0.359	0.743***	0.385*
		(0.222)	(0.223)	(0.223)	(0.224)	(0.236)	(0.223)
Age^2		−0.005**	−0.005**	−0.005**	−0.005**	−0.005**	−0.005**
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Han Chinese		0.084	0.099	0.013	0.078	0.313	0.321
		(0.872)	(0.871)	(0.871)	(0.871)	(0.874)	(0.872)
Rural *hukou*		10.513***	10.447***	10.362***	10.479***	9.903***	9.897***
		(0.658)	(0.660)	(0.661)	(0.660)	(0.676)	(0.672)
Year (ref: 1997)							
2000		−6.762***	−6.844***	−6.824***	−6.758***	−7.426***	−6.979***
		(1.498)	(1.497)	(1.494)	(1.499)	(1.497)	(1.492)
2004		−11.999***	−12.168***	−12.124***	−11.980***	−13.849***	−12.554***
		(1.588)	(1.589)	(1.586)	(1.592)	(1.638)	(1.593)
2006		−12.889***	−13.124***	−13.079***	−12.886***	−15.135***	−13.493***
		(1.629)	(1.633)	(1.630)	(1.636)	(1.747)	(1.636)
2009		−12.205***	−12.507***	−12.447***	−12.199***	−15.326***	−12.815***
		(1.737)	(1.744)	(1.741)	(1.749)	(1.930)	(1.743)
2011		−13.133***	−13.459***	−13.390***	−13.088***	−17.022***	−13.830***
		(1.834)	(1.843)	(1.841)	(1.850)	(2.040)	(1.846)
2015		−16.590***	−17.003***	−16.924***	−16.548***	−21.640***	−17.162***
		(2.079)	(2.095)	(2.093)	(2.103)	(2.365)	(2.091)
Province (ref: Liaoning)							
Heilongjiang		1.633	1.768	1.786	1.796	2.612	2.228
		(1.789)	(1.789)	(1.785)	(1.789)	(1.781)	(1.787)
Jiangsu		1.379	1.218	1.363	1.369	−0.381	1.939
		(1.768)	(1.769)	(1.766)	(1.771)	(1.799)	(1.770)
Shandong		−8.352***	−8.279***	−8.218***	−8.267***	−8.159***	−8.012***
		(1.746)	(1.745)	(1.741)	(1.745)	(1.726)	(1.741)
Henan		−6.387***	−6.449***	−6.525***	−6.417***	−7.540***	−6.566***
		(1.734)	(1.732)	(1.729)	(1.733)	(1.735)	(1.726)
Hubei		−0.275	−0.458	−0.456	−0.422	−2.652	0.269
		(1.736)	(1.738)	(1.734)	(1.738)	(1.818)	(1.739)
Hunan		−7.011***	−7.063***	−7.051***	−7.084***	−8.139***	−3.725**
		(1.730)	(1.728)	(1.725)	(1.729)	(1.733)	(1.889)
Guangxi		−3.329*	−3.481**	−3.394**	−3.598**	−5.263***	−0.859
		(1.712)	(1.713)	(1.709)	(1.714)	(1.751)	(1.813)
Guizhou		1.312	1.246	1.149	1.278	−0.255	3.690**
		(1.729)	(1.728)	(1.724)	(1.728)	(1.754)	(1.813)
Mean/intercept	16.664***	22.270***	22.297***	22.358***	21.921***	25.910***	21.662***
	(0.503)	(2.059)	(2.058)	(2.056)	(2.062)	(2.229)	(2.064)
Random effects							
$\sigma_{individual}$	49.770	42.987	42.914	42.966	42.492	43.545	42.869
	(7.055)	(6.556)	(6.551)	(6.555)	(6.519)	(6.599)	(6.548)
$\sigma_{village-year}$	198.91	106.295	106.201	105.666	106.373	102.244	105.083
	(14.104)	(10.310)	(10.305)	(10.279)	(10.314)	(10.112)	(10.251)

Continued on next page

Table B.1: (continued)

$\sigma_{residual}$	247.44	249.041	249.098	249.178	305.520	248.831	248.850
	(15.730)	(15.781)	(15.783)	(15.794)	(15.785)	(15.774)	(15.775)
Number of observations				11,974			
Number of individuals				2785			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand mean.
4. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$ (two-sided).

Table B.2: Between-within model regressing weekly hours on paid-work as a function of household out-migration dynamics and community characteristics

Paid-work	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			−0.359	−1.214*	−1.075	−0.678	−0.366
			(0.643)	(0.723)	(0.942)	(0.809)	(0.645)
farmer migrated				2.657***			
				(1.029)			
children migrated					1.145		
					(1.111)		
regional migration level						10.295**	
						(5.169)	
× out-migration						0.130	
						(5.113)	
regional patriarchy							1.021
							(0.734)
× out-migration							0.141
							(0.609)
Between individual:							
out-migration			−2.447*	−2.045	−2.955	0.008	−2.452*
			(1.261)	(1.428)	(1.929)	(1.696)	(1.262)
farmer migrated				−1.219			
				(2.939)			
children migrated					0.655		
					(2.161)		
regional migration level						−1.275	
						(7.372)	
× out-migration						−19.330*	
						(11.066)	
regional patriarchy							−0.292
							(0.533)
× out-migration							0.854
							(1.216)
Control variables							
Return migration		−0.792	−0.087	−0.414	0.058	0.200	−0.053
		(1.162)	(1.240)	(1.250)	(1.259)	(1.248)	(1.242)
Education (ref: none)							
Primary school		2.110***	2.088***	2.091***	2.085***	2.076***	2.120***
		(0.605)	(0.605)	(0.605)	(0.606)	(0.606)	(0.606)
Secondary school		5.011***	4.941***	4.943***	4.935***	4.897***	4.962***
		(0.645)	(0.647)	(0.647)	(0.648)	(0.648)	(0.647)
High school		7.625***	7.533***	7.536***	7.522***	7.515***	7.580***
		(0.955)	(0.957)	(0.957)	(0.957)	(0.958)	(0.957)
Technical college		13.176***	13.030***	13.005***	13.026***	13.025***	13.038***
		(1.426)	(1.429)	(1.429)	(1.429)	(1.430)	(1.429)
University		15.559***	15.417***	15.372***	15.408***	15.472***	15.478***
		(2.079)	(2.081)	(2.081)	(2.081)	(2.083)	(2.081)

Continued on next page

Table B.2: (continued)

Married		0.312	0.309	0.295	0.306	0.404	0.282
		(0.841)	(0.841)	(0.841)	(0.842)	(0.842)	(0.841)
Age		1.429***	1.404***	1.401***	1.421***	1.243***	1.417***
		(0.254)	(0.255)	(0.255)	(0.256)	(0.267)	(0.255)
Age^2		−0.026***	−0.026***	−0.026***	−0.026***	−0.026***	−0.026***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Han Chinese		−0.657	−0.687	−0.680	−0.682	−0.800	−0.619
		(1.019)	(1.019)	(1.020)	(1.019)	(1.024)	(1.022)
Rural *hukou*		0.846	0.946	0.969	0.945	1.000	0.843
		(0.724)	(0.727)	(0.729)	(0.727)	(0.751)	(0.744)
Year (ref: 1997)							
2000		1.959	2.056	2.038	2.028	1.949	2.116
		(1.368)	(1.370)	(1.369)	(1.371)	(1.386)	(1.371)
2004		20.102***	20.301***	20.256***	20.270***	20.458***	20.557***
		(1.514)	(1.520)	(1.520)	(1.523)	(1.589)	(1.529)
2006		23.126***	23.404***	23.343***	23.363***	23.265***	23.660***
		(1.589)	(1.598)	(1.598)	(1.603)	(1.728)	(1.607)
2009		26.115***	26.468***	26.478***	26.415***	26.375***	26.644***
		(1.757)	(1.771)	(1.771)	(1.778)	(1.965)	(1.775)
2011		26.973***	27.356***	27.366***	27.305***	27.727***	27.584***
		(1.901)	(1.918)	(1.918)	(1.928)	(2.128)	(1.924)
2015		23.392***	23.874***	23.879***	23.831***	24.555***	23.878***
		(2.239)	(2.265)	(2.266)	(2.277)	(2.541)	(2.266)
Province (ref: Liaoning)							
Heilongjiang		−3.368*	−3.521**	−3.509**	−3.527**	−3.384*	−3.496**
		(1.748)	(1.751)	(1.751)	(1.751)	(1.761)	(1.757)
Jiangsu		7.937***	8.130***	8.107***	8.118***	8.468***	8.243***
		(1.734)	(1.739)	(1.741)	(1.741)	(1.786)	(1.748)
Shandong		2.040	1.961	1.965	1.953	2.126	1.964
		(1.719)	(1.720)	(1.720)	(1.720)	(1.717)	(1.723)
Henan		−2.401	−2.323	−2.311	−2.330	−2.200	−2.331
		(1.700)	(1.702)	(1.702)	(1.702)	(1.721)	(1.702)
Hubei		−0.328	−0.107	−0.098	−0.119	0.428	0.016
		(1.707)	(1.713)	(1.713)	(1.714)	(1.817)	(1.723)
Hunan		−4.970***	−4.906***	−4.899***	−4.916***	−4.732***	−4.345**
		(1.697)	(1.698)	(1.698)	(1.699)	(1.719)	(1.875)
Guangxi		4.172**	4.354***	4.340***	4.355***	4.565***	4.761***
		(1.667)	(1.672)	(1.673)	(1.673)	(1.730)	(1.785)
Guizhou		−0.206	−0.124	−0.104	−0.134	0.105	0.285
		(1.692)	(1.693)	(1.693)	(1.693)	(1.736)	(1.786)
Mean/intercept	18.822***	−0.414	−0.453	−0.460	−0.477	−0.658	−0.677
	(0.460)	(2.087)	(2.088)	(2.088)	(2.094)	(2.284)	(2.101)
Random effects							
$\sigma_{individual}$	111.00	81.962	81.756	81.926	81.759	81.822	81.865
	(10.540)	(9.053)	(9.042)	(9.051)	(9.042)	(9.046)	(9.048)
$\sigma_{village-year}$	129.800	76.191	76.343	76.432	30.973	45.637	76.354
	(11.390)	(8.729)	(8.737)	(8.735)	(8.743)	(8.697)	(8.738)

Continued on next page

Table B.2: (continued)

$\sigma_{residual}$	313.010	323.114	323.114	322.884	323.114	323.085	323.090
	(17.692)	(17.975)	(17.975)	(17.975)	(17.975)	(17.975)	(17.975)
Number of observations				12,015			
Number of individuals				2784			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand-mean.
4. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$ (two-sided).

Table B.3: Between-within model regressing weekly hours on paid-work as a function of household out-migration dynamics and community characteristics

Self-employment	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Fixed effects:							
Within individual:							
out-migration			−0.047	−0.102	0.173	−0.169	−0.024
			(0.466)	(0.522)	(0.683)	(0.584)	(0.468)
farmer migrated			0.120				
				(0.745)			
children migrated					−0.346		
					(0.804)		
regional migration level						3.073	
						(2.888)	
× out-migration						−0.248	
						(3.601)	
regional patriarchy							−0.045
							(0.389)
× out-migration							0.269
							(0.433)
Between individual:							
out-migration			−5.180***	−3.457***	−4.597***	−5.412***	−5.152***
			(1.133)	(1.290)	(1.717)	(1.521)	(1.135)
farmer migrated				−7.273***			
				(2.613)			
children migrated					−0.842		
					(1.941)		
regional migration level						−13.403**	
						(5.773)	
× out-migration						11.545	
						(9.618)	
regional patriarchy							0.172
							(0.386)
× out-migration							−0.185
							(1.083)
Control variables							
Return migration		−1.515*	−0.472	−0.345	−0.580	−0.515	−0.473
		(0.883)	(0.944)	(0.951)	(0.957)	(0.950)	(0.946)
Education (ref: none)							
Primary school		1.159**	1.114**	1.117**	1.104**	1.094**	1.108**
		(0.479)	(0.479)	(0.479)	(0.479)	(0.479)	(0.479)
Secondary school		2.282***	2.146***	2.122***	2.135***	2.080***	2.141***
		(0.527)	(0.527)	(0.527)	(0.527)	(0.528)	(0.527)
High school		2.748***	2.546***	2.496***	2.536***	2.414***	2.535***
		(0.783)	(0.783)	(0.783)	(0.784)	(0.786)	(0.784)
Technical college		0.239	−0.060	−0.126	−0.061	−0.209	−0.047
		(1.148)	(1.148)	(1.148)	(1.148)	(1.151)	(1.149)
University		−0.519	−0.854	−0.910	−0.840	−1.079	−0.856
		(1.662)	(1.662)	(1.661)	(1.662)	(1.665)	(1.662)

Continued on next page

Table B.3: (continued)

Married		0.172	0.135	0.179	0.119	0.168	0.144
		(0.672)	(0.671)	(0.672)	(0.672)	(0.672)	(0.672)
Age		0.543***	0.468**	0.474**	0.469**	0.338*	0.468**
		(0.188)	(0.189)	(0.189)	(0.190)	(0.197)	(0.189)
Age^2		−0.009***	−0.009***	−0.009***	−0.009***	−0.009***	−0.009***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Han Chinese		0.437	0.353	0.415	0.360	0.228	0.309
		(0.821)	(0.819)	(0.818)	(0.819)	(0.825)	(0.822)
Rural *hukou*		−2.221***	−1.958***	−1.863***	−1.963***	−1.644***	−1.890***
		(0.526)	(0.530)	(0.531)	(0.530)	(0.548)	(0.543)
Year (ref: 1997)							
2000		0.556	0.761	0.737	0.750	0.994	0.747
		(0.711)	(0.711)	(0.710)	(0.712)	(0.728)	(0.712)
2004		2.349***	2.832***	2.776***	2.793***	3.501***	2.807***
		(0.908)	(0.914)	(0.913)	(0.918)	(0.970)	(0.919)
2006		3.035***	3.656***	3.589***	3.608***	4.434***	3.632***
		(1.018)	(1.027)	(1.026)	(1.033)	(1.114)	(1.031)
2009		3.286***	4.114***	4.021***	4.051***	5.170***	4.096***
		(1.219)	(1.232)	(1.231)	(1.240)	(1.353)	(1.234)
2011		3.362**	4.324***	4.214***	4.244***	5.679***	4.301***
		(1.374)	(1.390)	(1.390)	(1.401)	(1.526)	(1.393)
2015		0.670	1.933	1.794	1.823	3.688*	1.921
		(1.711)	(1.734)	(1.734)	(1.747)	(1.906)	(1.735)
Province (ref: Liaoning)							
Heilongjiang		−4.487***	−4.837***	−4.852***	−4.847***	−5.242***	−4.846***
		(1.181)	(1.181)	(1.179)	(1.181)	(1.194)	(1.188)
Jiangsu		−1.334	−0.871	−1.034	−0.906	−0.364	−0.920
		(1.169)	(1.170)	(1.171)	(1.172)	(1.202)	(1.177)
Shandong		−1.820	−1.985*	−2.046*	−1.988*	−2.093*	−1.980*
		(1.175)	(1.172)	(1.171)	(1.172)	(1.175)	(1.176)
Henan		−0.860	−0.651	−0.574	−0.660	−0.252	−0.636
		(1.153)	(1.150)	(1.149)	(1.150)	(1.167)	(1.151)
Hubei		−1.064	−0.508	−0.520	−0.517	0.236	−0.569
		(1.164)	(1.168)	(1.166)	(1.168)	(1.245)	(1.177)
Hunan		0.233	0.409	0.390	0.414	0.784	0.134
		(1.153)	(1.150)	(1.149)	(1.151)	(1.167)	(1.279)
Guangxi		1.122	1.564	1.461	1.594	2.223*	1.370
		(1.112)	(1.114)	(1.113)	(1.115)	(1.157)	(1.195)
Guizhou		−0.410	−0.163	−0.086	−0.170	0.378	−0.356
		(1.141)	(1.139)	(1.138)	(1.139)	(1.171)	(1.202)
Mean/intercept	5.211***	4.805***	4.740***	4.670***	4.789***	3.326**	4.802***
	(0.263)	(1.471)	(1.467)	(1.466)	(1.473)	(1.607)	(1.478)
Random effects							
$\sigma_{individual}$	106.410	102.329	101.421	101.064	101.482	101.352	101.497
	(10.316)	(10.116)	(10.071)	(10.053)	(10.074)	(10.067)	(10.075)
$\sigma_{village-year}$	12.35	10.194	10.096	10.027	10.084	10.072	10.162
	(3.334)	(3.193)	(3.178)	(3.514)	(3.176)	(3.174)	(3.188)

Continued on next page

Table B.3: (continued)

$\sigma_{residual}$	176.410	176.240	176.262	176.320	176.278	176.254	176.259
	(13.282)	(13.276)	(13.276)	(13.279)	(13.277)	(13.276)	(13.276)
Number of observations				12,088			
Number of individuals				2786			
Number of village-years				958			

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Control variables included: respondents' educational level, return migration history, age, ethnicity, *hukou* status, and marital status. Age is centered around its grand-mean.
4. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$ (two-sided).

Table B.4: Post-hoc analyses on the average weekly hours on farming, paid-work, and self-employment

	Farming			*Paid-work*			*Self-employment*		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Within out-migration	−0.049	−0.016	0.003	−0.205	−0.296	−0.243	−0.139	−0.264	−0.166
	(0.580)	(0.674)	(0.582)	(0.666)	(0.772)	(0.669)	(0.498)	(0.574)	(0.500)
Regional migration level		−5.614			12.446**			2.685	
		(5.455)			(5.432)			(3.127)	
× out-migration		0.565			−4.693			0.619	
		(4.374)			(4.952)			(3.537)	
Regional patriarchy			−1.275*			1.060			0.042
			(0.768)			(0.739)			(0.394)
× out-migration			0.605			−0.133			−0.247
			(0.531)			(0.600)			(0.427)
Between out-migration	1.187	1.570	0.960	−2.195	0.479	−2.156	−5.008***	−5.035***	−4.952***
	(1.266)	(1.710)	(1.267)	(1.512)	(2.033)	(1.514)	(1.287)	(1.732)	(1.290)
Regional migration level		30.288***			−0.177			−13.319**	
		(6.765)			(7.399)			(5.791)	
× out-migration		−16.573			−15.839			10.442	
		(10.355)			(12.275)			(10.388)	
Regional patriarchy			−2.230***			−0.285			0.188
			(0.525)			(0.534)			(0.387)
× out-migration			−0.993			1.045			0.155
			(1.198)			(1.426)			(1.208)
Return migration	−4.698***	−4.754***	−4.672***	−0.244	0.030	−0.217	−0.441	−0.559	−0.437
	(1.044)	(1.051)	(1.045)	(1.214)	(1.222)	(1.215)	(0.921)	(0.928)	(0.923)
Primary school	−1.303**	−1.277**	−1.254**	2.088***	2.068***	2.116***	1.113**	1.098**	1.102**
	(0.510)	(0.510)	(0.510)	(0.605)	(0.605)	(0.606)	(0.479)	(0.479)	(0.479)
Secondary school	−3.966***	−3.888***	−3.906***	4.944***	4.898***	4.959***	2.146***	2.083***	2.133***

Continued on next page

A

Table B.4: (continued)

	(0.538)	(0.539)	(0.538)	(0.647)	(0.647)	(0.647)	(0.527)	(0.528)	(0.527)
High school	−5.123***	−4.982***	−5.056***	7.534***	7.508***	7.575***	2.540***	2.412***	2.525***
	(0.793)	(0.795)	(0.793)	(0.957)	(0.958)	(0.957)	(0.783)	(0.786)	(0.784)
Technical or vocational college	−7.269***	−7.136***	−7.258***	13.047***	13.050***	13.042***	−0.064	−0.207	−0.066
	(1.199)	(1.201)	(1.199)	(1.428)	(1.430)	(1.428)	(1.148)	(1.151)	(1.149)
University	−6.654***	−6.379***	−6.625***	15.424***	15.475***	15.474***	−0.878	−1.096	−0.889
	(1.747)	(1.750)	(1.746)	(2.081)	(2.084)	(2.081)	(1.662)	(1.666)	(1.663)
Married	2.661***	2.584***	2.629***	0.304	0.407	0.274	0.144	0.178	0.151
	(0.706)	(0.708)	(0.706)	(0.841)	(0.842)	(0.841)	(0.672)	(0.672)	(0.672)
Age	0.398*	0.718***	0.394*	1.402***	1.238***	1.414***	0.474**	0.349*	0.473**
	(0.223)	(0.236)	(0.223)	(0.255)	(0.268)	(0.255)	(0.190)	(0.197)	(0.190)
Age2	−0.005**	−0.005**	−0.005**	−0.026***	−0.026***	−0.026***	−0.009***	−0.009***	−0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Han Chinese	0.099	0.314	0.317	−0.688	−0.805	−0.615	0.355	0.228	0.313
	(0.871)	(0.874)	(0.872)	(1.019)	(1.023)	(1.022)	(0.819)	(0.825)	(0.822)
Rural hukou	10.444***	9.897***	9.886***	0.951	0.993	0.848	−1.957***	−1.642***	−1.892***
	(0.660)	(0.676)	(0.672)	(0.727)	(0.751)	(0.744)	(0.530)	(0.548)	(0.543)
2000	−6.832***	−7.539***	−6.955***	2.047	1.857	2.130	0.767	1.031	0.768
	(1.497)	(1.497)	(1.491)	(1.370)	(1.387)	(1.370)	(0.711)	(0.729)	(0.712)
2004	−12.166***	−13.989***	−12.556***	20.298***	20.320***	20.577***	2.832***	3.545***	2.824***
	(1.589)	(1.640)	(1.593)	(1.520)	(1.592)	(1.529)	(0.914)	(0.973)	(0.919)
2006	−13.095***	−15.295***	−13.469***	23.390***	23.093***	23.664***	3.674***	4.502***	3.662***
	(1.632)	(1.752)	(1.636)	(1.599)	(1.734)	(1.607)	(1.027)	(1.120)	(1.031)
2009	−12.486***	−15.444***	−12.800***	26.467***	26.244***	26.660***	4.137***	5.233***	4.129***
	(1.744)	(1.934)	(1.744)	(1.771)	(1.970)	(1.775)	(1.232)	(1.357)	(1.235)
2011	−13.462***	−17.121***	−13.842***	27.386***	27.639***	27.635***	4.354***	5.759***	4.341***
	(1.844)	(2.044)	(1.846)	(1.919)	(2.133)	(1.925)	(1.391)	(1.530)	(1.394)

Continued on next page

Table B.4: (continued)

2015	−17.035***	−21.717***	−17.218***	23.920***	24.518***	23.968***	1.947	3.737*	1.958
	(2.094)	(2.366)	(2.091)	(2.264)	(2.542)	(2.265)	(1.733)	(1.907)	(1.735)
Heilongjiang	1.764	2.602	2.225	−3.517**	−3.357*	−3.495**	−4.839***	−5.237***	−4.849***
	(1.788)	(1.781)	(1.787)	(1.750)	(1.761)	(1.756)	(1.181)	(1.194)	(1.188)
Jiangsu	1.219	−0.389	1.947	8.137***	8.457***	8.246***	−0.863	−0.345	−0.914
	(1.769)	(1.799)	(1.770)	(1.739)	(1.786)	(1.747)	(1.171)	(1.203)	(1.178)
Shandong	−8.284***	−8.192***	−8.006***	1.969	2.140	1.962	−1.982*	−2.077*	−1.982*
	(1.744)	(1.725)	(1.740)	(1.720)	(1.717)	(1.722)	(1.172)	(1.175)	(1.176)
Henan	−6.446***	−7.561***	−6.556***	−2.311	−2.198	−2.330	−0.640	−0.230	−0.629
	(1.732)	(1.735)	(1.726)	(1.702)	(1.721)	(1.702)	(1.151)	(1.167)	(1.152)
Hubei	−0.459	−2.662	0.272	−0.101	0.421	0.018	−0.505	0.251	−0.568
	(1.737)	(1.818)	(1.739)	(1.713)	(1.817)	(1.722)	(1.168)	(1.245)	(1.177)
Hunan	−7.065***	−8.171***	−3.749**	−4.893***	−4.735***	−4.318**	0.419	0.809	0.147
	(1.728)	(1.732)	(1.889)	(1.698)	(1.719)	(1.875)	(1.151)	(1.167)	(1.279)
Guangxi	−3.484**	−5.274***	−0.864	4.361***	4.546***	4.766***	1.568	2.233*	1.375
	(1.712)	(1.751)	(1.813)	(1.672)	(1.730)	(1.784)	(1.114)	(1.157)	(1.195)
Guizhou	1.241	−0.280	3.683**	−0.115	0.103	0.295	−0.161	0.388	−0.354
	(1.727)	(1.753)	(1.812)	(1.693)	(1.735)	(1.785)	(1.139)	(1.171)	(1.202)
Mean/intercept	22.267***	25.954***	21.638***	−0.460	−0.513	−0.692	4.727***	3.299**	4.778***
	(2.058)	(2.232)	(2.064)	(2.089)	(2.288)	(2.102)	(1.468)	(1.610)	(1.478)
Observations	11,974	11,974	11,974	12,015	12,015	12,015	12,088	12,088	12,088

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Age is centered around its grand-mean.
4. *p<0.1; **p<0.05; ***p<0.01 (two-sided).

Table B.5: Between-within model of average hours per day women spent on domestic tasks on household out-migration dynamics and community characteristics

	(1)	(2)	(3)	(4)	(5)
Fixed effects:					
Within individual					
out-migration	0.184***	0.177**	0.142	0.137*	0.189***
	(0.063)	(0.071)	(0.092)	(0.079)	(0.063)
farmer migrated		0.024			
		(0.102)			
children migrated			0.067		
			(0.109)		
regional migration level				0.585	
				(0.420)	
× out-migration				0.184	
				(0.492)	
regional patriarchy					0.072
					(0.057)
× out-migration					0.101*
					(0.059)
Between individual					
out-migration	0.235**	0.190*	0.224	0.449***	0.230**
	(0.095)	(0.108)	(0.149)	(0.129)	(0.095)
farmer migrated		0.210			
		(0.231)			
children migrated			0.012		
			(0.166)		
regional migration level				−0.122	
				(0.533)	
× out-migration				−1.726**	
				(0.844)	
regional patriarchy					−0.093**
					(0.037)
× out-migration					0.078
					(0.092)
Return migration	−0.170	−0.184	−0.160	−0.147	−0.173
	(0.115)	(0.116)	(0.117)	(0.115)	(0.115)
Primary school	−0.046	−0.046	−0.046	−0.047	−0.042
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Secondary school	−0.053	−0.051	−0.053	−0.055	−0.049
	(0.051)	(0.051)	(0.052)	(0.051)	(0.051)
High school	−0.233***	−0.231***	−0.234***	−0.234***	−0.229***
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Technical college	−0.181	−0.178	−0.181	−0.181	−0.182
	(0.116)	(0.116)	(0.116)	(0.116)	(0.116)
University	−0.344**	−0.342**	−0.345**	−0.335*	−0.339**

Continued on next page

Table B.5: (continued)

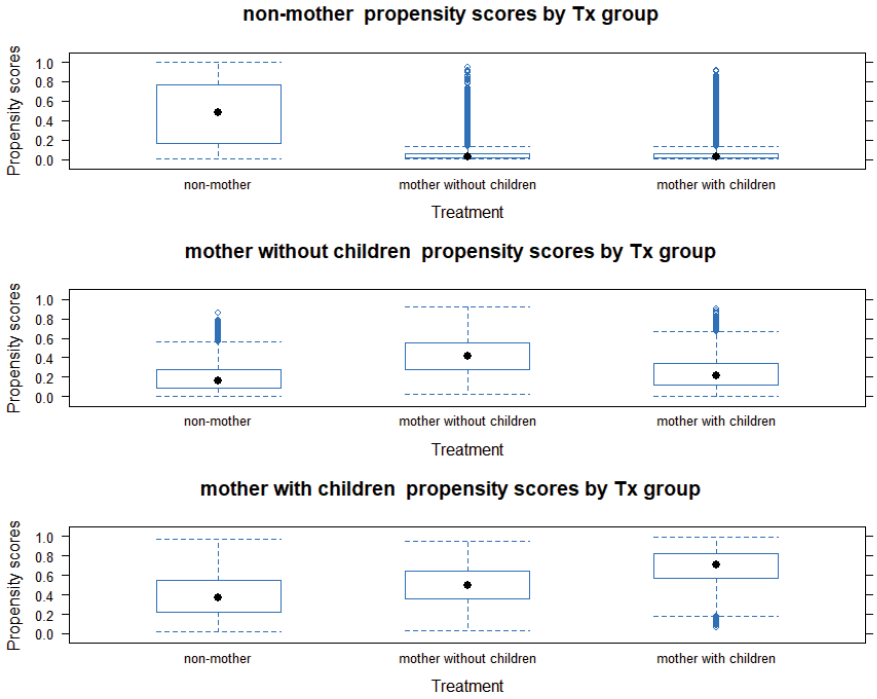
	(0.173)	(0.173)	(0.173)	(0.173)	(0.173)
Married	0.339***	0.337***	0.339***	0.346***	0.337***
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
Age	−0.119***	−0.119***	−0.118***	−0.125***	−0.118***
	(0.024)	(0.024)	(0.024)	(0.025)	(0.024)
Age2	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Han Chinese	0.016	0.014	0.017	0.007	0.027
	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
Rural hukou	−0.104*	−0.110*	−0.104*	−0.100*	−0.130**
	(0.058)	(0.058)	(0.058)	(0.060)	(0.059)
2000	0.016	0.017	0.015	0.016	0.014
	(0.102)	(0.102)	(0.102)	(0.104)	(0.102)
2004	0.129	0.130	0.128	0.140	0.133
	(0.114)	(0.114)	(0.114)	(0.120)	(0.114)
2006	−0.048	−0.046	−0.050	−0.050	−0.042
	(0.120)	(0.120)	(0.120)	(0.129)	(0.120)
2009	−0.865***	−0.863***	−0.867***	−0.869***	−0.862***
	(0.133)	(0.133)	(0.133)	(0.146)	(0.133)
2011	−0.799***	−0.796***	−0.800***	−0.783***	−0.795***
	(0.144)	(0.144)	(0.145)	(0.159)	(0.144)
2015	−0.310*	−0.306*	−0.310*	−0.281	−0.316*
	(0.172)	(0.172)	(0.173)	(0.190)	(0.172)
Heilongjiang	0.139	0.140	0.139	0.153	0.145
	(0.119)	(0.119)	(0.119)	(0.121)	(0.119)
Jiangsu	0.097	0.103	0.097	0.120	0.115
	(0.119)	(0.119)	(0.119)	(0.123)	(0.119)
Shandong	−0.251**	−0.248**	−0.251**	−0.236**	−0.248**
	(0.117)	(0.117)	(0.117)	(0.117)	(0.117)
Henan	0.233**	0.228**	0.232**	0.240**	0.229**
	(0.116)	(0.116)	(0.116)	(0.118)	(0.116)
Hubei	0.150	0.150	0.150	0.192	0.172
	(0.117)	(0.117)	(0.117)	(0.125)	(0.117)
Hunan	0.162	0.162	0.162	0.174	0.258**
	(0.116)	(0.116)	(0.116)	(0.118)	(0.128)
Guangxi	−0.141	−0.136	−0.142	−0.130	−0.072
	(0.114)	(0.114)	(0.114)	(0.119)	(0.122)
Guizhou	0.137	0.134	0.137	0.153	0.206*
	(0.116)	(0.116)	(0.116)	(0.119)	(0.122)
Mean/intercept	2.374***	2.377***	2.374***	2.346***	2.337***
	(0.155)	(0.155)	(0.155)	(0.170)	(0.155)
Observations			11,467		

Notes: 1. Standard errors are in parentheses.
2. Regional out-migration level and regional patriarchy are first centered around the grand-mean and then decomposed.
3. Age is centered around its grand-mean.
4. *p<0.1; **p<0.05; ***p<0.01 (two-sided).

Chapter C

Chapter 4

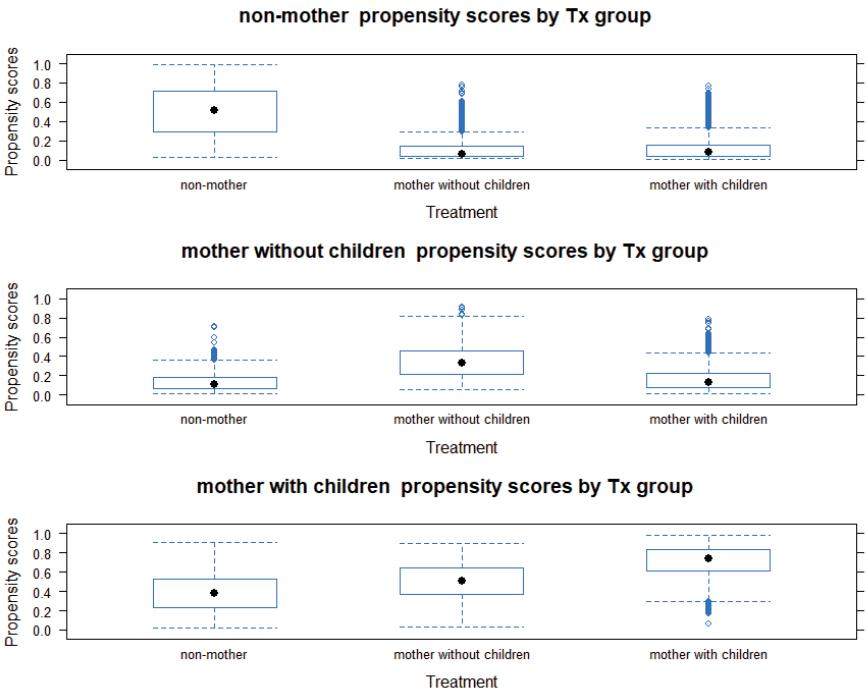
Figure C.1: Overlap assessment, rural sample



. 2. For each treatment group, there are observations in other treatment groups that have comparable propensity score of being assigned to that treatment.

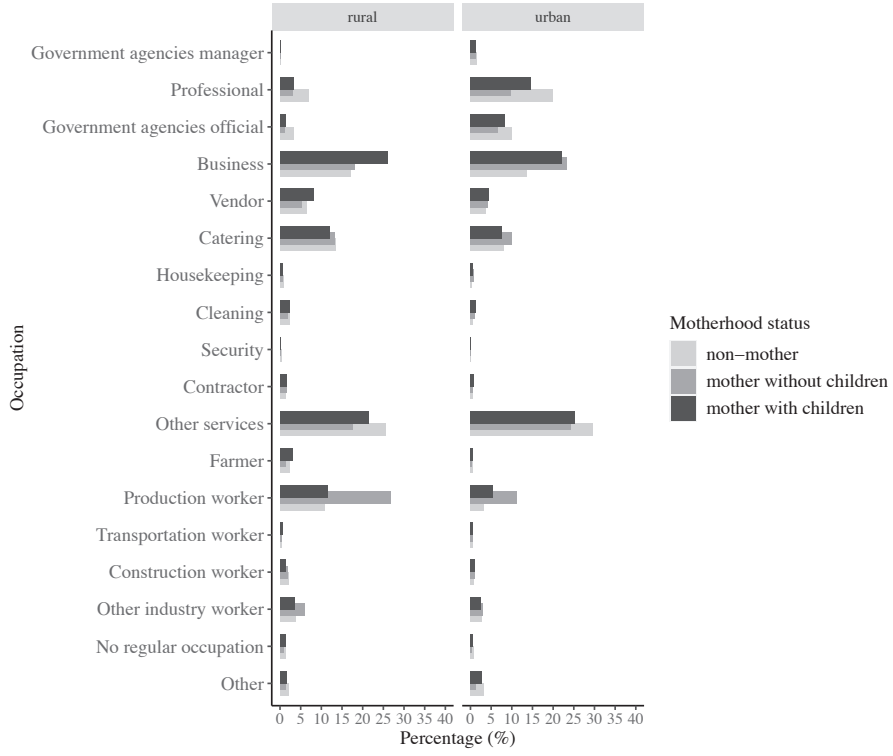
Note: 1. Each panel shows the box plots of the estimated propensity scores for one of the treatments, i.e., $pr(T(t) = 1|X)$, for rural sample. The top panel presents non-mother (t = 1). The middle panel presents mother-without-children (t = 2) and the bottom panel presents mother-with-children (t = 3).

Figure C.2: Overlap assessment, urban sample



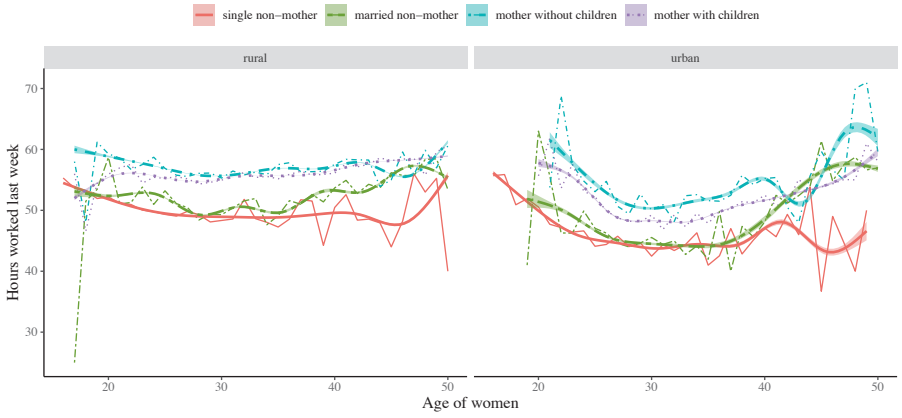
Note: 1. Each panel shows the box plots of the estimated propensity scores for one of the treatments, i.e., $pr(T(t) = 1|X)$, for urban sample. The top panel presents non-mother (t = 1). The middle panel presents mother-without-children (t = 2) and the bottom panel presents mother-with-children (t = 3). 2. For each treatment group, there are observations in other treatment groups that have comparable propensity score of being assigned to that treatment.

Figure C.3: Distribution of respondents by occupation, *hukou*, and motherhood status (non-mother, mother-without-children, and mother-with-children), married women aged 16 to 50



Source: cross-tabulation using the CMDS 2015

Figure C.4: Average working hours last week by *hukou* status, marital status, motherhood status, and women's age, women aged 16 to 50



Note: 1. The smooth curves were produced using the generalized additive mode smoothing (i.e., "gam"). 2. 95% CIs were added around the smooth curves. 3. Source: authors' own calculation using the CMDS 2015.

Table C.1: Structural equation models of hourly wage on motherhood status, family living arrangements, and job arrangements, for the sample of mothers only

Panel A: Rural *hukou*	Model 1		Model 2		Model 3	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
(Ref: Mother-without-children)						
Mother-with-children → wage	−0.068***	0.019	−0.087**	0.013	−0.099***	0.022
Coresident spouse → wage	−0.001	0.011	0.007	0.019	0.006	0.012
Coresident parents (-in-law) → wage	−0.007	0.010	0.003	0.023	0.001	0.011
Part-time → wage	0.579***	0.026	0.322***	0.017	0.322***	0.017
Self-employment → wage	0.010	0.021	0.039**	0.015	0.039**	0.015
Mother-with-children → Coresident spouse	1.118***	0.046			1.131***	0.045
Mother-with-children → Coresident parents(-in-law)	0.717***	0.060			0.718***	0.059
Mother-with-children → Part-time			0.070**	0.027	0.080**	0.027
Mother-with-children → Self-employment			0.097**	0.031	0.173***	0.030
Occupation FE	YES		YES		YES	
Intercept/mean:						
Hourly wage	2.130***	0.058	2.804***	0.046	2.819***	0.024
Coresident spouse	−0.207	0.109			−1.074***	0.060
Coresident parents (in-law)	2.164***	0.109			2.093***	0.077
Part-time			1.116***	0.109	0.981***	0.055
Self-employment			0.102	0.111	−0.851***	0.057
	Estimate	*S.E.*	Estimate	*S.E.*	Estimate	*S.E.*
Total indirect	−0.006	0.016	0.026**	0.008	0.039	0.021
Specific indirect effect						
Coresident spouse	−0.001	0.012			0.007	0.014
Coresident parent(-in-law)	−0.005	0.007			0.000	0.008
Part-time			0.023**	0.008	0.026*	0.003
Self-employment			0.004*	0.002	0.007*	0.003
R^2	0.15		0.26		0.26	

Panel B: Urban *hukou*	Model 1		Model 2		Model 3	
	Estimate	*S.E.*	Estimate	*S.E.*	Estimate	*S.E.*
(Ref: Mother-without-children)						
Mother-with-children → wage	−0.119*	0.047	−0.106***	0.029	−0.172**	0.063
Coresident spouse → wage	0.019	0.026	0.001	0.049	0.016	0.032
Coresident parents (-in-law) → wage	0.041	0.021	0.125*	0.052	0.059*	0.026
Part-time → wage	0.627***	0.051	0.449***	0.046	0.448***	0.046
Self-employment → wage	−0.063	0.034	0.072**	0.026	0.070**	0.027
Mother-with-children → Coresident spouse	1.310***	0.072			1.313***	0.069
Mother-with-children → Coresident parents(-in-law)	0.835***	0.105			0.835***	0.106
Mother-with-children → Part-time			0.175**	0.057	0.181**	0.052
Mother-with-children → Self-employment			−0.005	0.059	0.071	0.061
Occupation FE	YES		YES		YES	

Continued on next page

Table C.1: (continued)

Intercept/mean:						
Hourly wage	2.340***	0.091	3.025***	0.098	3.158***	0.073
Coresident spouse	0.100	0.225			−0.585***	0.114
Coresident parents (-in-law)	1.746***	0.205			1.908***	0.124
Part-time			0.299	0.201	0.199	0.114
Self-employment			0.763**	0.226	0.242	0.114
	Estimate	*S.E.*	Estimate	*S.E.*	Estimate	*S.E.*
Total indirect	0.060	0.046	0.078*	0.026	0.156	0.077
Specific indirect effect						
Coresident spouse	0.025	0.034			0.021	0.042
Coresident parents (-in-law)	0.035	0.020			0.049	0.026
Part-time			0.078*	0.027	0.081*	0.028
Self-employment			0.000	0.005	0.005	0.005
R^2	0.22		0.35		0.36	

Notes: 1. Estimations were weighted by inverse probability of treatment weights (IPTWs). IPTWs were calculated using generalized boosting models on all pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' origin provincial fixed effects, and destination provincial fixed effects, for details on all pre-treatment covariates see Table 4.1.

2. Clustering at the city level were taken into account in the model specification.

3. Robust standard errors were obtained from 1000 bootstrap iterations.

4. *p $<$ 0.05 **p $<$ 0.01 ***p $<$ 0.001 (two-sided).

Table C.2: Propensity weighted linear regression of hourly wage on motherhood status, family living arrangements, and job arrangements by the age of the youngest child, married women aged 16 to 50

Panel A:	Rural *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age of the youngest child	0 to 3	4 to 6	7 to 9	10 to 12	13 to 15	0 to 15
Treatment status						
Mother without children (ref.)						
Non-mother	0.039	0.050**	0.045	0.060**	0.073**	0.008
	(0.031)	(0.025)	(0.029)	(0.030)	(0.033)	(0.026)
Mother-with-children	−0.021	−0.053***	−0.097***	−0.096***	−0.141***	−0.070***
	(0.020)	(0.018)	(0.019)	(0.027)	(0.032)	(0.012)
Coresident spouse	−0.041	−0.025	−0.035	−0.041	−0.044	−0.018
	(0.043)	(0.043)	(0.048)	(0.053)	(0.051)	(0.024)
Coresident parents(-in-law)	−0.080**	−0.043	−0.064	−0.046	−0.064	−0.035
	(0.033)	(0.041)	(0.051)	(0.060)	(0.064)	(0.023)
Part-time	0.552***	0.554***	0.556***	0.551***	0.562***	0.573***
	(0.036)	(0.042)	(0.045)	(0.047)	(0.048)	(0.027)
Self-employment	0.015	0.036	0.022	0.015	0.037	0.004
	(0.032)	(0.033)	(0.035)	(0.039)	(0.041)	(0.023)
Occupation FE	YES	YES	YES	YES	YES	YES
Childbirth after current migration						−0.052***
						(0.013)
Constant	2.884***	2.865***	2.794***	2.521***	2.423***	3.058***
	(0.176)	(0.211)	(0.266)	(0.135)	(0.121)	(0.134)
Observations	12,477	12,093	10,536	8,573	7,500	35,715
Log Likelihood	-13,544.650	-12,888.810	-11,628.630	-9,675.641	-8,628.031	-35,721.190
AIC	27,137.300	25,825.620	23,305.270	19,399.280	17,304.060	71,492.380

Panel B:	Urban *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age of the youngest child	0 to 3	4 to 6	7 to 9	10 to 12	13 to 15	0 to 15
Treatment status						
Mother without children (ref.)						
Non-mother	0.010	−0.046	−0.006	−0.042	−0.042	−0.062*
	(0.042)	(0.048)	(0.046)	(0.066)	(0.066)	(0.033)
Mother with children	0.015	−0.147***	−0.079	−0.210***	−0.210***	−0.092***
	(0.039)	(0.047)	(0.054)	(0.076)	(0.076)	(0.027)
Coresident spouse	0.038	0.074	0.084	0.088	0.088	0.031
	(0.060)	(0.051)	(0.057)	(0.062)	(0.062)	(0.042)
Coresident parents(-in-law)	0.085	0.162**	0.171**	0.221**	0.221**	0.109**
	(0.060)	(0.070)	(0.080)	(0.099)	(0.099)	(0.049)
Part-time	0.636***	0.630***	0.612***	0.673***	0.673***	0.637***
	(0.055)	(0.048)	(0.055)	(0.063)	(0.063)	(0.048)
Self-employment	−0.105	−0.116**	−0.052	−0.088	−0.088	−0.121***
	(0.066)	(0.054)	(0.059)	(0.065)	(0.065)	(0.037)

Continued on next page

Table C.2: (continued)

Occupation FE	YES	YES	YES	YES	YES	YES
Childbirth after current migration						−0.071**
						(0.036)
Constant	2.811***	3.008***	3.100***	2.956***	2.956***	3.063***
	(0.088)	(0.093)	(0.247)	(0.116)	(0.116)	(0.118)
Observations	2,909	2,448	2,198	1,857	1,857	6,281
Log Likelihood	-2,882.363	-2,512.126	-2,276.402	-1,933.165	-1,933.165	-6,472.858
AIC	5,812.726	5,072.252	4,600.803	3,914.331	3,914.331	12,995.720

Notes: 1. Estimations were weighted by inverse probability of treatment weights (IPTWs). IPTWs were calculated using generalized boosting models on all pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' origin provincial fixed effects, and destination provincial fixed effects, for details on all pre-treatment covariates see Table 4.1.

2. Clustering at the level of destination city was taken into account (R: "svydesign").

3. Robust standard errors obtained from 1000 bootstrap iterations are in parentheses.

4. *p $<$ 0.05 **p $<$ 0.01 ***p $<$ 0.001 (two-sided).

Table C.3: Propensity score weighted linear regression of hourly wage on motherhood status, family living arrangements, and job arrangements by respondent's occupation, married women with a regular occupation aged 16 to 50

Panel A:	Rural *hukou*			
Occupation group	Officials and Professionals	Business	Services	Manual work
Treatment status				
Mother without children (ref.)				
Non-mother	0.058	0.134**	0.019	0.028
	(0.046)	(0.056)	(0.026)	(0.037)
Mother-with-children	−0.035	−0.054**	−0.058***	−0.098***
	(0.037)	(0.022)	(0.015)	(0.021)
Coresident spouse	0.025	−0.098*	−0.020	0.002
	(0.049)	(0.053)	(0.029)	(0.042)
Coresident with parents(-in-law)	−0.009	−0.062	−0.002	−0.042
	(0.035)	(0.044)	(0.031)	(0.049)
Part-time	0.476***	0.735***	0.550***	0.479***
	(0.035)	(0.054)	(0.031)	(0.049)
Self-employment	0.129	−0.187***	0.135***	−0.058
	(0.082)	(0.042)	(0.021)	(0.107)
Constant	2.676***	2.916***	2.487***	2.557***
	(0.049)	(0.064)	(0.025)	(0.034)
Observations	1,872	11,224	12,910	8,742
Log Likelihood	-1,506.018	-13,280.660	-12,044.180	-7,153.746
AIC	3,026.037	26,575.320	24,102.370	14,321.490

Panel B:	Urban *hukou*			
Occupation group	Officials and Professionals	Business	Services	Manual work
Treatment status				
Mother without children (ref.)				
Non-mother	0.014	−0.034	−0.012	−0.006
	(0.068)	(0.074)	(0.038)	(0.094)
Mother-with-children	−0.060	−0.091	−0.089**	−0.060
	(0.051)	(0.061)	(0.034)	(0.059)
Coresident with spouse	0.094	0.103	−0.015	0.001
	(0.074)	(0.096)	(0.052)	(0.067)
Coresident with parents(-in-law)	0.149*	0.161	−0.018	0.258**
	(0.077)	(0.108)	(0.057)	(0.105)
Part-time	0.453***	0.836***	0.681***	0.481***
	(0.067)	(0.080)	(0.064)	(0.063)
Self-employment	0.017	−0.357***	0.169***	0.234*
	(0.245)	(0.056)	(0.057)	(0.133)
Constant	2.870***	2.978***	2.646***	2.644***
	(0.066)	(0.109)	(0.045)	(0.062)
Observations	1,535	1,608	2,257	685
Log Likelihood	-1,484.753	-1,889.072	-2,210.787	-553.457
AIC	2,983.506	3,792.144	4,435.574	1,120.915

Continued on next page

Table C.3: (continued)

Notes: 1. Married women with no regular occupation or unspecified occupation title were excluded (2.7% of the rural sample, 3.1% of the urban sample).
2. Manual work included farming (9.7% of the rural manual worker, 4.4% of the urban manual work).
3. Estimations were weighted by inverse probability of treatment weights (IPTWs). IPTWs were calculated using generalized boosting models on all pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' origin provincial fixed effects, and destination provincial fixed effects, for details on all pre-treatment covariates see Table 4.1.
4. Clustering at the level of destination city was taken into account (R: "svydesign").
5. Robust standard errors obtained from 1000 bootstrap iterations are in parentheses.
6. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Table C.4: OLS and Heckman selection model of hourly wage on motherhood status, family living arrangements, and job arrangements, married women aged 16 to 50

	Rural *hukou*				Urban *hukou*			
Treatment status (Ref: Mother-without-children)	OLS	Heckit	OLS	Heckit	OLS	Heckit	OLS	Heckit
Non-mother	0.027	0.027	0.012	0.009	−0.030	−0.053	−0.027	−0.044
	(0.018)	(0.018)	(0.013)	(0.013)	(0.028)	(0.028)	(0.024)	(0.023)
Mother-with-children	−0.051***	−0.051**	−0.042***	−0.046***	−0.061*	−0.141***	−0.050*	−0.115***
	(0.012)	(0.013)	(0.010)	(0.011)	(0.023)	(0.026)	(0.022)	(0.024)
Coresident spouse			−0.169***	−0.171***			−0.144***	−0.159***
			(0.015)	(0.015)			(0.024)	(0.026)
Coresident parents (-in-law)			−0.135***	−0.133***			−0.043	−0.020
			(0.014)	(0.014)			(0.028)	(0.031)
Part-time			0.582***	0.582***			0.486***	0.471***
			(0.023)	(0.023)			(0.027)	(0.024)
Self-employment			0.002	0.002			−0.063*	−0.072**
			(0.016)	(0.016)			(0.025)	(0.025)
Occupation FE			YES	YES			YES	YES
Pre-treatment covariates FE	YES	YES	YES	YES	YES	YES	YES	YES
constant	2.158***	2.157***	2.420***	2.412***	2.291***	2.130***	2.706***	2.549***
	(0.103)	(0.105)	(0.166)	(0.164)	(0.160)	(0.182)	(0.159)	(0.180)
λ	–	−0.001	–	0.022	–	0.501***	–	0.430***
		(0.032)		(0.032)		(0.035)		(0.034)

Notes: 1. Heckman selection equation included the number of biological children, household monthly expense on food, household monthly expense on housing, household monthly expense in total, and all pre-treatment covariates, including respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, and elderly care intention. Due to model convergence problem, provincial level fixed effects were not included.

2. Standard errors adjusting for city level clustering are in parentheses.

3. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Table C.5: Propensity score weighted linear regression of last month's wage on motherhood status, family living arrangements, and job arrangements, married women aged 16 to 50

Panel A:	Rural *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment status						
Mother without children (ref.)						
Non-mother	−0.034	−0.037*	−0.038*	−0.032	−0.030	−0.031
	(0.023)	(0.023)	(0.022)	(0.022)	(0.022)	(0.019)
Mother with children	−0.036**	−0.041**	−0.042**	−0.040**	−0.052***	−0.049***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.014)
Coresident spouse		0.028*	0.028*	0.029*	0.008	−0.003
		(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Coresident prarents(-in-law)			0.011	0.010	0.005	0.004
			(0.035)	(0.035)	(0.033)	(0.030)
Part-time				−0.061**	−0.044	−0.032
				(0.026)	(0.027)	(0.022)
Self-employed					0.123***	0.024
					(0.021)	(0.022)
Occupation FE						YES
Constant	8.039***	8.017***	8.017***	8.029***	8.003***	8.276***
	(0.013)	(0.015)	(0.015)	(0.015)	(0.016)	(0.133)
N individual	35715					
N city	347					
Log Likelihood	-32,942.270	-32,937.480	-32,937.150	-32,893.890	-32,675.310	-31,353.530
AIC	65,890.540	65,882.970	65,884.310	65,799.780	65,364.620	62,755.060

Panel B:	Urban *hukou*					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment status						
Mother without children (ref.)						
Non-mother	0.063	0.056	0.052	0.012	0.019	0.012
	(0.053)	(0.049)	(0.048)	(0.035)	(0.034)	(0.030)
Mother with children	0.040	0.031	0.021	−0.002	−0.002	−0.009
	(0.049)	(0.044)	(0.043)	(0.035)	(0.035)	(0.031)
Coresident spouse		0.033	0.033	0.044	0.032	0.032
		(0.043)	(0.044)	(0.042)	(0.045)	(0.043)
Coresident prarents(-in-law)			0.103**	0.095**	0.097**	0.074*
			(0.047)	(0.043)	(0.043)	(0.039)
Part-time				0.168***	0.188***	0.177***
				(0.065)	(0.061)	(0.054)

Continued on next page

Table C.5: (continued)

Self-employed					0.089***	−0.027
					(0.032)	(0.033)
Occupation FE						YES
Constant	8.193***	8.171***	8.168***	8.108***	8.086***	8.408***
	(0.029)	(0.032)	(0.032)	(0.037)	(0.035)	(0.131)
N individual			6281			
N city			315			
Log Likelihood	-6,201.743	-6,200.676	-6,194.869	-6,132.251	-6,120.060	-5,909.707
AIC	12,409.490	12,409.350	12,399.740	12,276.500	12,254.120	11,867.410

Notes: 1. Estimations were weighted by inverse probability of treatment weights (IPTWs). IPTWs were calculated using generalized boosting models on all pre-treatment covariates including: respondents' demographics, respondents' education, respondents' current migration characteristics, spouses' characteristics, family characteristics, elderly care intention, respondents' origin provincial fixed effects, and destination provincial fixed effects, for details on all pre-treatment covariates see Table 4.1.

2. Clustering at the level of destination city was taken into account (R: "svydesign").

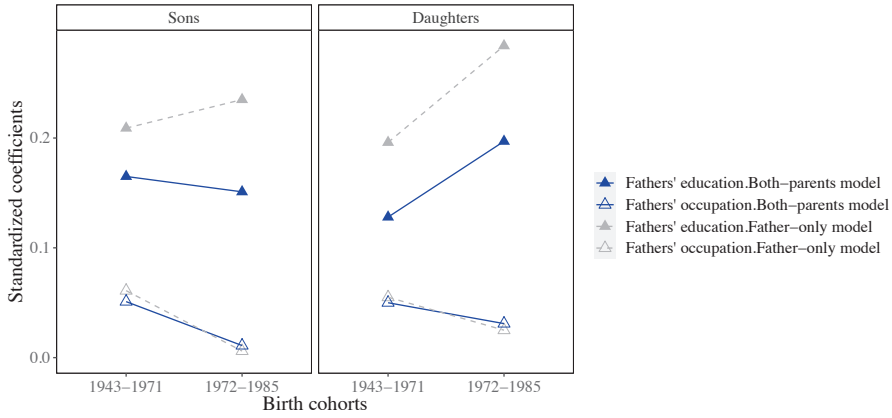
3. Robust standard errors obtained from 1000 bootstrap iterations are in parentheses.

4. *p < 0.05 **p < 0.01 ***p < 0.001 (two-sided).

Chapter D

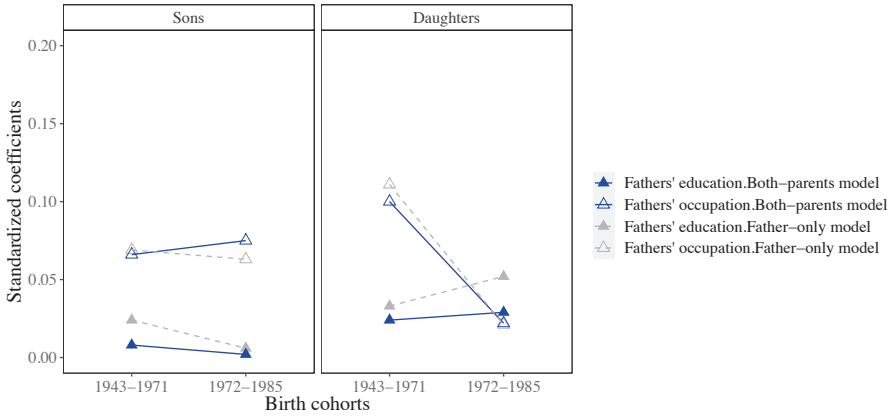
Chapter 5

Figure D.1: The influence of fathers' education and occupation on children's education by birth cohorts and model type



Note: 1. The figures are on the basis of results in Table D.1 and D.2. 2. All models of parental education and occupation controlled for respondents' age, ethnicity, marital status, and *hukou* status.

Figure D.2: The influence of fathers' education and occupation on children's occupation by birth cohorts and model type



Note: 1. The figures are on the basis of results in Table D.3 and D.4. 2. All models of parental education and occupation controlled for respondents' education, age, ethnicity, marital status, and *hukou* status.

Table D.1: Linear regression of sons' education on fathers' and mothers' education and occupation by birth cohorts, respondents aged 30 to 65

	Sons' education					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.176***	0.202***			0.079***	0.138***
	(0.012)	(0.019)			(0.013)	(0.021)
	[0.169]	[0.243]			[0.075]	[0.165]
Mothers' occupation	0.010*	0.002			0.006	0.001
	(0.004)	(0.007)			(0.004)	(0.007)
	[0.026]	[0.008]			[0.015]	[0.002]
Housewife mother	−0.363***	−0.155			−0.335***	−0.161
	(0.094)	(0.204)			(0.093)	(0.201)
	[−0.043]	[−0.017]			[−0.040]	[−0.017]
Fathers' education			0.180***	0.202***	0.142***	0.129***
			(0.010)	(0.020)	(0.011)	(0.022)
			[0.209]	[0.235]	[0.165]	[0.151]
Fathers' occupation			0.014***	0.001	0.012***	0.002
			(0.003)	(0.005)	(0.003)	(0.005)
			[0.061]	[0.006]	[0.051]	[0.011]
Control variables						
Family agricultural background	−0.196	−0.075	0.194	−0.137	0.117	0.081
	(0.122)	(0.224)	(0.104)	(0.188)	(0.124)	(0.227)
Age	−0.065***	−0.030	−0.060***	−0.037*	−0.059***	−0.025
	(0.004)	(0.018)	(0.004)	(0.018)	(0.004)	(0.018)
Han Chinese	0.441**	0.684**	0.515***	0.731**	0.494***	0.670**
	(0.147)	(0.242)	(0.145)	(0.238)	(0.144)	(0.236)
Married	1.024***	0.214	0.925***	0.174	0.961***	0.216
	(0.136)	(0.197)	(0.135)	(0.195)	(0.134)	(0.193)
Urban *hukou*	2.736***	3.541***	2.686***	3.510***	2.629***	3.409***
	(0.096)	(0.169)	(0.094)	(0.170)	(0.095)	(0.169)
Mean/intercept	9.135***	8.547***	8.038***	8.466***	8.054***	7.776***
	(0.328)	(0.765)	(0.303)	(0.702)	(0.332)	(0.769)
df	8	8	7	7	10	10
N	8149	1975	8149	1975	8149	1975

Note: 1. Unstandardized coefficients and standardized coefficients in brackets are generated from 10 imputed datasets.

2. Robust standard errors are in parentheses.

3. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided).

Table D.2: Linear regression of daughters' education on fathers' and mothers' education and occupation by birth cohorts, respondents aged 30 to 65

	Daughters' education					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.235***	0.260***			0.148***	0.159***
	(0.013)	(0.019)			(0.015)	(0.021)
	[0.190]	[0.272]			[0.120]	[0.167]
Mothers' occupation	0.015**	−0.002			0.011*	−0.003
	(0.005)	(0.007)			(0.005)	(0.007)
	[0.034]	[−0.005]			[0.024]	[−0.009]
Housewife mother	−0.234*	−0.233			−0.206	−0.207
	(0.118)	(0.202)			(0.117)	(0.196)
	[−0.022]	[−0.022]			[−0.019]	[−0.020]
Fathers' education			0.204***	0.275***	0.134***	0.190***
			(0.012)	(0.021)	(0.014)	(0.024)
			[0.196]	[0.284]	[0.128]	[0.197]
Fathers' occupation			0.015***	0.006	0.014***	0.007
			(0.003)	(0.005)	(0.003)	(0.005)
			[0.055]	[0.025]	[0.050]	[0.031]
Control variables						
Family agricultural background	−0.994***	−0.903***	−0.791***	−0.792***	−0.642***	−0.596**
	(0.144)	(0.229)	(0.126)	(0.191)	(0.148)	(0.228)
Age	−0.098***	−0.013	−0.095***	−0.023	−0.092***	−0.013
	(0.005)	(0.019)	(0.005)	(0.019)	(0.005)	(0.018)
Han Chinese	0.714***	1.406***	0.760***	1.593***	0.732***	1.482***
	(0.179)	(0.267)	(0.176)	(0.263)	(0.176)	(0.257)
Married	0.110	−0.273	0.058	−0.446	0.101	−0.283
	(0.155)	(0.254)	(0.155)	(0.249)	(0.153)	(0.247)
Urban *hukou*	3.586***	3.793***	3.535***	3.599***	3.451***	3.527***
	(0.117)	(0.171)	(0.117)	(0.173)	(0.117)	(0.172)
Mean/intercept	9.597***	7.352***	8.953***	6.821***	8.499***	6.211***
	(0.405)	(0.785)	(0.382)	(0.761)	(0.412)	(0.783)
df	8	8	7	7	10	10
N	6961	2023	6961	2023	6961	2023

Note: 1. Unstandardized coefficients and standardized coefficients in brackets are generated from 10 imputed datasets.
2. Robust standard errors are in parentheses.
3. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided).

Table D.3: Linear regression of sons' occupation on fathers' and mothers' education and occupation by birth cohorts, respondents aged 30 to 65

	Sons' occupation					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.192**	0.083			0.135	0.067
	(0.059)	(0.090)			(0.069)	(0.105)
	[0.040]	[0.022]			[0.029]	[0.018]
Mothers' occupation	0.061**	−0.036			0.043	−0.061
	(0.023)	(0.039)			(0.024)	(0.042)
	[0.036]	[−0.025]			[0.025]	[−0.042]
Housewife mother	0.809	1.049			0.906*	1.023
	(0.461)	(0.939)			(0.462)	(0.936)
	[0.021]	[0.025]			[0.024]	[0.024]
Fathers' education			0.092*	0.025	0.031	0.009
			(0.044)	(0.091)	(0.052)	(0.107)
			[0.024]	[0.006]	[0.008]	[0.002]
Fathers' occupation			0.072***	0.063*	0.069***	0.074*
			(0.015)	(0.029)	(0.015)	(0.031)
			[0.069]	[0.063]	[0.066]	[0.075]
Control variables						
Family agricultural background	1.606**	0.187	1.657***	1.061	2.594***	1.075
	(0.564)	(1.092)	(0.488)	(0.908)	(0.596)	(1.134)
Education	1.566***	2.533***	1.543***	2.510***	1.534***	2.513***
	(0.050)	(0.111)	(0.050)	(0.111)	(0.051)	(0.113)
	[0.346]	[0.561]	[0.340]	[0.556]	[0.339]	[0.556]
Age	0.003	0.115	−0.000	0.145	0.001	0.125
	(0.018)	(0.078)	(0.018)	(0.078)	(0.018)	(0.078)
Han Chinese	−0.380	0.892	−0.208	1.051	−0.276	1.107
	(0.554)	(0.934)	(0.553)	(0.937)	(0.554)	(0.931)
Married	1.953***	0.662	1.860***	0.654	1.892***	0.595
	(0.500)	(0.881)	(0.501)	(0.879)	(0.499)	(0.878)
Urban *hukou*	9.924***	3.495***	9.916***	3.348***	9.882***	3.340***
	(0.426)	(0.863)	(0.424)	(0.866)	(0.426)	(0.866)
Mean/intercept	11.972***	4.881	11.772***	1.039	10.026***	2.488
	(1.479)	(3.530)	(1.340)	(3.196)	(1.525)	(3.596)
df	9	9	8	8	11	11
N	8149	1975	8149	1975	8149	1975

Note: 1. Unstandardized coefficients and standardized coefficients in brackets are generated from 10 imputed datasets.

2. Robust standard errors are in parentheses.

3. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided).

A

Table D.4: Linear regression of daughters' occupation on fathers' and mothers' education and occupation by birth cohorts, respondents aged 30 to 65

	Daughters' occupation					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.093	0.220**			0.010	0.170
	(0.053)	(0.082)			(0.060)	(0.089)
	[0.022]	[0.062]			[0.002]	[0.048]
Mothers' occupation	0.180***	0.003			0.155***	−0.002
	(0.022)	(0.030)			(0.022)	(0.030)
	[0.116]	[0.002]			[0.100]	[−0.002]
Housewife mother	1.942***	−0.577			2.070***	−0.565
	(0.433)	(0.818)			(0.431)	(0.820)
	[0.053]	[−0.015]			[0.056]	[−0.014]
Fathers' education			0.117**	0.186*	0.087	0.104
			(0.044)	(0.078)	(0.050)	(0.084)
			[0.033]	[0.052]	[0.024]	[0.029]
Fathers' occupation			0.105***	0.019	0.094***	0.020
			(0.014)	(0.023)	(0.014)	(0.023)
			[0.111]	[0.021]	[0.100]	[0.022]
Control variables						
Family agricultural background	1.395*	−0.729	0.618	−0.729	2.830***	−0.689
	(0.544)	(0.813)	(0.507)	(0.813)	(0.571)	(0.996)
Education	1.190***	1.951***	1.161***	1.951***	1.146***	1.916***
	(0.041)	(0.092)	(0.041)	(0.092)	(0.042)	(0.096)
	[0.347]	[0.525]	[0.339]	[0.525]	[0.335	[0.516]
Age	0.091***	0.164*	0.093***	0.164*	0.088***	0.173*
	(0.018)	(0.073)	(0.018)	(0.073)	(0.018)	(0.074)
Han Chinese	0.262	0.220	0.397	0.220	0.398	0.166
	(0.470)	(0.807)	(0.466)	(0.807)	(0.464)	(0.805)
Married	−0.350	0.694	−0.451	0.694	−0.371	0.873
	(0.572)	(1.062)	(0.572)	(1.062)	(0.571)	(1.059)
Urban *hukou*	10.322***	4.746***	10.301***	4.746***	10.280***	4.798***
	(0.434)	(0.719)	(0.431)	(0.719)	(0.433)	(0.721)
Mean/intercept	8.802***	8.773**	10.868***	8.773**	5.782***	8.500*
	(1.441)	(3.116)	(1.358)	(3.116)	(1.484)	(3.370)
df	9	8	8	8	11	11
N	6961	2023	6961	2023	6961	2023

Note: 1. Unstandardized coefficients and standardized coefficients in brackets are generated from 10 imputed datasets.
2. Robust standard errors are in parentheses.
3. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided).

Table D.5: Heckman's correction for selection bias in occupational status attainment by birth cohorts, male respondents (sons) aged 30-65

	Sons' occupation					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.151*	0.082			0.088	0.106
	(0.066)	(0.100)			(0.075)	(0.115)
Mothers' occupation	0.193***	0.048			0.170***	0.011
	(0.026)	(0.043)			(0.027)	(0.046)
Housewife mother	0.944	2.049*			1.070*	2.032*
	(0.511)	(1.019)			(0.511)	(1.014)
Fathers' education			0.096	−0.053	0.028	−0.096
			(0.051)	(0.103)	(0.058)	(0.120)
Fathers' occupation			0.102***	0.107***	0.085***	0.109**
			(0.016)	(0.032)	(0.016)	(0.033)
Family agricultural background	3.218***	1.482	2.503***	1.465	4.438***	2.668*
	(0.638)	(1.152)	(0.546)	(0.991)	(0.668)	(1.187)
Education	1.411***	2.646***	1.395***	2.640***	1.375***	2.630***
	(0.059)	(0.127)	(0.059)	(0.128)	(0.059)	(0.129)
Age	−0.455***	−0.382***	−0.458***	−0.368***	−0.457***	−0.365***
	(0.020)	(0.091)	(0.020)	(0.090)	(0.021)	(0.091)
Han Chinese	0.079	1.391	0.307	1.717	0.197	1.727
	(0.629)	(1.111)	(0.626)	(1.113)	(0.627)	(1.106)
Married	4.057***	3.131**	3.855***	3.002**	3.967***	2.965**
	(0.616)	(0.999)	(0.616)	(0.997)	(0.614)	(0.992)
Urban *hukou*	9.560***	5.006***	9.563***	4.763***	9.486***	4.777***
	(0.471)	(0.945)	(0.470)	(0.954)	(0.471)	(0.949)
Mean/intercept	23.760***	10.367*	26.327***	8.967*	21.419***	7.258
	(1.690)	(4.046)	(1.523)	(3.735)	(1.730)	(4.127)
atanh ρ	2.529***	2.402***	2.521***	2.457***	2.544***	2.458***
	(0.060)	(0.155)	(0.062)	(0.148)	(0.063)	(0.167)
lnσ	0.987***	2.701***	2.770***	2.699***	2.768***	2.697***
	(0.010)	(0.023)	(0.010)	(0.022)	(0.010)	(0.023)
λ ($\rho * \sigma$)	15.755	14.646	15.755	14.647	15.728	14.626
df	9	9	8	8	11	11
N	10152	2295	10152	2295	10152	2295

Notes: 1. Heckman selection regressions on imputed data from 10 imputations included household income in the previous year, the number of children, and all independent and control variables.
2. The ancillary parameters atanh ρ, lnσ, and λ are used to indicate model selectivity. atanh ρ stands for the inverse hyperbolic tangent of ρ of the Heckman regression, lnσ stands for the log-transformed standard error of the residual (σ). λ summarizes the selectivity effect, which is calculated using $\rho * \sigma$.

Table D.6: Heckman's correction for selection bias in occupational status attainment by birth cohorts, female respondents (daughters) aged 30-65

	Daughters' occupation					
	Mother-only model		Father-only model		Both-parents model	
	1943-1971	1972-1985	1943-1971	1972-1985	1943-1971	1972-1985
Mothers' education	0.050	0.172			−0.029	0.116
	(0.064)	(0.096)			(0.071)	(0.105)
Mothers' occupation	0.323***	0.107**			0.288***	0.093**
	(0.026)	(0.036)			(0.026)	(0.036)
Housewife mother	0.484	−1.170			0.666	−1.121
	(0.494)	(1.019)			(0.492)	(1.020)
Fathers' education			0.116*	0.185*	0.060	0.113
			(0.051)	(0.091)	(0.057)	(0.100)
Fathers' occupation			0.153***	0.057*	0.126***	0.040
			(0.015)	(0.026)	(0.016)	(0.026)
Family agricultural background	2.030**	−0.982	1.468*	−1.028	3.907***	−0.369
	(0.625)	(1.147)	(0.570)	(0.965)	(0.657)	(1.199)
Education	1.086***	2.203***	1.071***	2.203***	1.035***	2.161***
	(0.050)	(0.116)	(0.050)	(0.115)	(0.050)	(0.118)
Age	−0.423***	−0.299***	−0.419***	−0.327***	−0.421***	−0.297***
	(0.022)	(0.089)	(0.022)	(0.089)	(0.022)	(0.089)
Han Chinese	0.958	0.771	1.080	1.020	1.100	0.945
	(0.577)	(1.007)	(0.579)	(1.014)	(0.570)	(1.008)
Married	0.915	−0.333	0.744	−0.684	0.907	−0.368
	(0.659)	(1.237)	(0.657)	(1.245)	(0.655)	(1.239)
Urban *hukou*	8.582***	5.406***	8.632***	5.148***	8.572***	5.214***
	(0.484)	(0.867)	(0.483)	(0.864)	(0.483)	(0.866)
Mean/intercept	21.153***	14.708***	24.581***	16.222***	17.095***	13.241**
	(1.695)	(3.933)	(1.582)	(3.767)	(1.744)	(4.028)
atanh ρ	2.048***	1.862***	2.025***	1.883***	2.040***	1.866***
	(0.049)	(0.093)	(0.048)	(0.095)	(0.050)	(0.096)
lnσ	2.714***	2.673***	2.713***	2.677***	2.706***	2.671***
	(0.014)	(0.024)	(0.014)	(0.023)	(0.014)	(0.024)
$\lambda(\rho * \sigma)$	14.589	13.796	14.564	13.881	14.468	13.776
df	9	9	8	8	11	11
N	10808	2787	10808	2787	10808	2787

Notes: 1. Heckman selection regressions on imputed data from 10 imputations included household income in the previous year, the number of children, and all independent and control variables.
2. The ancillary parameters atanh ρ, lnσ, and λ are used to indicate model selectivity. atanh ρ stands for the inverse hyperbolic tangent of ρ of the Heckman regression, lnσ stands for the log-transformed standard error of the residual (σ). λ summarizes the selectivity effect, which is calculated using $\rho * \sigma$.

Nederlandse samenvatting

Inleiding

De effecten van de markttransitie op de levenskansen van mensen zijn sinds het einde van de 20e eeuw uitvoerig bestudeerd (Bian and Logan 1996; Nee 1989; 1991; 1996; Rona-Tas 1994; Szelenyi and Kostello 1996). In toenemende mate omvat dit onderzoek ook de gevolgen voor de economische situatie van vrouwen (voor een overzicht zie Van Der Lippe and Van Dijk 2002; Entwisle and Henderson 2000). In China is de arbeidsparticipatie van vrouwen na de markttransitie gedaald (Wu and Zhou 2015) en de loonkloof tussen mannen en vrouwen is gestegen (He and Wu 2018; Shu and Bian 2003). Over het algemeen wordt geconcludeerd dat de markttransitie negatieve gevolgen heeft voor de economische situatie van vrouwen.

De markttransitie is echter een proces met vele facetten. Het omvat niet alleen een directe verandering in de economische structuur, zoals privatisering, maar ook andere sociaaleconomische veranderingen. Eerder onderzoek gebruikte voornamelijk een economische benadering om de effecten van de markttransitie te bestuderen en gebruikte periodes als proxy's voor markttransitie in plaats van directe metingen. De effecten van verschillende transitieprocessen zijn vaak niet gedifferentieerd. Ook regionale variatie in markttransitie wordt vaak buiten beschouwing gelaten.

Volgens de algemene literatuur hangen de werkgelegenheid en de economische situatie van vrouwen niet alleen samen met ontwikkelingen op macroniveau, maar ook met factoren op huishoudniveau (Mincer 1962; 1970; Van Der Lippe en Van Dijk 2002). Zo wordt aangenomen dat de arbeidsmarktparticipatie van vrouwen verband houdt met de financiële situatie van het gezin (Mincer 1962). Eerder onderzoek in China heeft steun gevonden voor dit idee (Wu en Zhou 2015). De wisselwerking tussen markttransitieprocessen op macroniveau en de kenmerken van huishoudens is belangrijk voor het begrijpen van veranderingen in de economische situatie van vrouwen in China.

Daarom beoogt dit proefschrift twee overkoepelende onderzoeksvragen te beantwoorden: 1) In hoeverre hebben markttransitieprocessen invloed op de economische situatie van vrouwen in China? 2) In hoeverre werken de invloeden van markttransitieprocessen via veranderingen in huishoudens?

Genderongelijkheid in werkgelegenheid in stedelijk China (Hoofdstuk 2)

Op basis van de markttransitietheorie verwachten we dat met privatisering van bedrijven en economische ontwikkeling de genderongelijkheid op het gebied van werkgelegenheid eerst toeneemt en daarna afneemt. Aanvankelijk worden vooral vrouwen ontslagen vanwege hun lagere opleidingsniveau, waardoor de ongelijkheid toeneemt. De latere afname houdt

verband met een verminderde genderongelijkheid in opleidingsniveau. Daarnaast kan privatisering de invloed van politiek kapitaal, dat vrouwen missen, verzwakken. Daarom verwachten we dat de genderongelijkheid in werkgelegenheid uiteindelijk zal afnemen met de privatisering. Volgens de theorie van de machtspersistentie verandert het belang van politiek kapitaal echter niet met de transitie. Hierdoor zou de genderongelijkheid in werkgelegenheid bij privatisering gelijk kunnen blijven.

In dit hoofdstuk vonden we dat de werkgelegenheid van zowel mannen als vrouwen afnam aan het begin van de markttransitie, hoewel de werkgelegenheid voor vrouwen in 2005 en 2006 iets meer te lijden had dan die van mannen. Na enkele jaren name de werkgelegenheid van mannen en vrouwen weer toe. De ongelijkheid tussen mannen en vrouwen in werkgelegenheid bleef min of meer constant tijdens de transitieperiode.

De tweede bevinding is dat noch de participatie van mannen noch die van vrouwen verband hield met het niveau van privatisering. En in tegenstelling tot wat we hadden verwacht, verlieten vrouwen de arbeidsmarkt niet toen de economische ontwikkeling toenam. In overeenstemming met de bevindingen van een recente studie van He en Wu (2018), profiteerden vrouwen juist van de economische ontwikkeling in termen van arbeidskansen.

Wat betreft de wisselwerking tussen veranderingen op macroniveau en (veranderingen in) individuele kenmerken, vonden we dat de Chinese arbeidsmarkt werd gekenmerkt door stabiliteit tijdens de markttransitie. Deze bevinding komt overeen met die van Shu en Bian (2002). Hoewel zowel mannen als vrouwen tijdelijk banen verloren, bleven de patronen van genderongelijkheid, ongelijkheid door opleidingsverschillen en ongelijkheid door politiek kapitaal grotendeels hetzelfde.

Tijdsbesteding aan arbeidsactiviteiten door vrouwen op het platteland van China (Hoofdstuk 3)

Ongelijke regionale ontwikkeling van de economie is vaak te zien in ontwikkelingslanden. In China ontwikkelden zowel de landelijke als de stedelijke economie zich snel na het begin van de markttransitie, maar werd de economische discrepantie tussen landelijke en stedelijke regio's wel groter. Veel mensen uit landelijke gebieden migreren daarom naar de steden op zoek naar werkgelegenheid. Eerder onderzoek richtte zich vooral op de interne migranten van het platteland naar de stad (Fan 2008). De consequentie van deze interne migratie voor achterblijvers zijn minder bekend. Op het platteland worden vrouwen vaak achtergelaten door hun man of andere familieleden (Fan 2008; Mu en Van De Walle 2011; Xu 2017). Hoofdstuk 3 onderzoekt hoe de migratie van gezinsleden en de markttransitie de tijdsbesteding van vrouwen beïnvloedt.

We vonden dat de migratie van gezinsleden van invloed is op de tijdsbesteding van vrouwen. De achterblijvende vrouwen besteden meer uren aan betaald werk in de lokale

economie als de vertrokken gezinsleden boer waren. De vrouwen waarvan de vertrokken echtgenoot geen boer was, besteden juist minder uren aan betaald werk en meer aan onbetaalde huishoudelijke taken. De resultaten suggereren dat achtergebleven vrouwen in boerengezinnen niet genoeg middelen hebben om de arbeidsmarkt volledig te verlaten, zelfs niet met het geld dat hun vertrokken gezinsleden overmaken. In plaats daarvan verbeteren ze hun situatie door meer niet-agrarisch betaald werk te verrichten.

De tijdsbesteding van vrouwen hangt niet alleen af van migratie van hun gezinsleden, maar ook van de mate van migratie in hun woonplaats. In plaatsen met een hoog niveau van uitgaande migratie, verruilen vrouwen waarvan geen gezinsleden gemigreerd zijn werkzaamheden op de boerderij voor betaald werk. Maar vrouwen waarvan wel gezinsleden zijn gemigreerd blijven gebonden aan de familieboerderij. Ook in plaatsen met een meer traditionele genderideologie blijft de arbeid van de achterblijvende vrouwen beperkt tot het boerenbedrijf.

Variaties in de child penalty onder interne migrantenvrouwen (Hoofdstuk 4)

Moeders verdienen minder dan kinderloze vrouwen. Dit fenomeen staat bekend als de child penalty (loonstraf voor moederschap). In eerder onderzoek is vaak gekeken naar de algemene bevolking die toegang heeft tot lokale socialezekerheidsstelsels en ouderschapsverlof. Er is weinig bekend over de mogelijke child penalty onder migrantenvrouwen. Veel interne migranten in China worden benadeeld door institutionele belemmeringen in hun plaats van bestemming (Fan 2008; Wu en Treiman 2007). Interne migranten werken bijvoorbeeld vaak in informele sectoren met beperkte rechtsbescherming. Omdat veel interne migranten niet bij hun familie zijn, krijgen ze ook vaak geen ondersteuning van familieleden. Werk-gezin balans is een ernstig probleem voor migrantenmoeders. Hoofdstuk 4 onderzoekt het verschil in uurloon tussen migrantenmoeders en migrantenvrouwen zonder kinderen. Binnen de migrantenmoeders onderscheiden we moeders die hun kinderen bij zich hebben en moeders waarvan de kinderen zijn achtergebleven bij familie in de plaats van herkomst.

Op basis van de New Home Economics-theorie over specialisatie in het huishouden, verwachten we dat migrantenmoeders die niet bij hun kinderen wonen een lager uurloon verdienen dan migrantvrouwen zonder kinderen. Maar van migrantenmoeders die met hun kinderen leven verwachten we dat ze het minste verdienen. Dit is ook wat we hebben gevonden.

Moeders die betaald werk verrichten en voor hun kinderen moeten zorgen, kunnen bijvoorbeeld proberen een baan te vinden met flexibele werktijden of bij hun ouders of schoonfamilie intrekken. We vonden dat migrantenmoeders die met hun kinderen samen-

wonen, vaker samenwonen met echtgenoten en ouders (d.w.z. schoonouders), maar dergelijke woonvormen helpen niet om de loonkloof te overbruggen. Migrantenmoeders die met kinderen samenwonen kiezen ook vaker voor deeltijdwerk en zelfstandig ondernemerschap. Flexibiliteit in werktijden lijkt de child penalty voor migrantenvrouwen in China te verminderen.

Statusverwerving en de invloed van de sociaaleconomische status van moeders (Hoofdstuk 5)

In westerse landen is de sociaaleconomische status van moeders (d.w.z. hun opleiding en beroep) belangrijk voor de statusverwerving van hun kinderen, naast het effect van de sociaaleconomische status van vaders (Beller 2009; Hout 2018; Sørensen 1994). Er is weinig bekend over de invloed van moeders op de statusverwerving van hun kinderen in socialistische landen. Aangezien de arbeidsparticipatie van vrouwen in socialistische landen hoog is, is het te verwachten dat de invloed van moeders hoog is (Whyte en Parish 1985). Voor veel socialistische landen is een toename van de invloed van de gezinsachtergrond op de status van de kinderen gedocumenteerd na de markttransitie (Gerber en Hout 2004; Jackson en Evans 2017; Lippényi en Gerber 2016). De meeste onderzoeken gebruiken echter de sociaaleconomische status van de vader om de familieachtergrond aan te duiden, waarbij het effect van moeders wordt verwaarloosd.

Als we de sociaaleconomische status van moeders toevoegen aan het statusverwervingsmodel, vinden we dat in de periode van hoog socialisme, het opleidingsniveau van moeders inderdaad net zo belangrijk was als het opleidingsniveau van vaders voor het opleidingsniveau van hun dochters. Het maakte ook uit, zij het minder, voor de opleiding van hun zoons. Deze bevinding komt overeen met wat eerder onderzoek heeft gevonden voor westerse landen (bijv. Kalmijn 1994; Korupp, Ganzeboom en Van Der Lippe 2002). Ook de beroepsstatus van moeders had een directe invloed op de beroepsstatus van dochters en dat effect was vergelijkbaar met dat van de beroepsstatus van vaders. Voor de beroepsstatus van zonen was alleen de beroepsstatus van de vader belangrijk. Met de markttransitie is het effect van het opleidingsniveau van moeders op het opleidingsniveau van zowel zonen als dochters toegenomen. Dochters profiteerden ook meer van een hoogopgeleide vader na de markttransitie dan ervoor. De beroepsstatus van moeders werd minder belangrijk voor de beroepsstatus van zowel zonen als dochters met de markttransitie.

Conclusie

Dit proefschrift beantwoordt twee algemene vragen. De eerste vraag betreft de mate waarin markttransitieprocessen de economische situatie van vrouwen beïnvloeden. De tweede vraag heeft betrekking op de wisselwerking tussen markttransitie en kenmerken van huishoudens en hoe dit vrouwen kan beïnvloeden. In de praktijk onderzocht het proefschrift de effecten van privatisering, economische ontwikkeling, interne migratie en de terugkeer van traditionele gendernormen op de economische situatie van vrouwen. Bovendien onderzocht het de interactie tussen markttransitieprocessen en twee gezinskenmerken (namelijk de financiële situatie van het gezin en de gezinssamenstelling).

De eerste algemene conclusie is dat de economische situatie van vrouwen niet rechtstreeks wordt geschaad door privatisering, economische ontwikkeling of interne migratie. We ontdekten dat in steden de werkgelegenheid voor vrouwen afnam na het begin van de markttransitie, maar de ervaringen van vrouwen waren niet slechter dan die van mannen. Privatisering en economische ontwikkeling vormen geen verklaringen voor de afname van de werkgelegenheid voor vrouwen. Integendeel, vrouwen profiteerden van de economische ontwikkeling, doordat die zorgde voor meer arbeidskansen.

Op het platteland profiteerden vrouwen ook van de markttransitie. In plaatsen met een hoog niveau van arbeidsmigratie konden vrouwen waarvan geen gezinsleden migreerden meer tijd besteden aan betaald werk. Dit is waarschijnlijk omdat het hoge migratieniveau een tekort aan arbeidskrachten in de regio veroorzaakt. Daardoor nemen de kansen om buiten het agrarisch bedrijf te werken toe. Vrouwen waarvan gezinsleden migreerden profiteerden niet van arbeidsmigratie; in plaats daarvan waren ze meer gebonden aan de familieboerderij.

De tweede algemene conclusie betreft de terugkeer van traditionele gendernormen en de gevolgen daarvan. Tijdens de periode van hoog socialisme bepaalden traditionele gendernormen de privésfeer, terwijl de socialistische gendergelijkheidsideologie dominant was in de publieke sfeer (Ji et al. 2017). Na het begin van de markttransitie kwamen de traditionele confucianistische gendernormen weer terug in de publieke sfeer. Dit kan een belangrijke reden zijn voor de verslechtering van de positie van vrouwen op de arbeidsmarkt. We vonden sterke aanwijzingen dat traditionele gendernormen en het mannelijke kostwinnersmodel een rol speelden bij de kansen van vrouwen om werk buiten de boerderij te vinden (Hoofdstuk 3), het uurloon van vrouwen (Hoofdstuk 4), en de rol van vrouwen in het proces van statusverwerving (Hoofdstuk 5).

De derde conclusie is dat de effecten van markttransitieprocessen op de economische situatie van vrouwen afhangen van de kenmerken van het huishouden. Terwijl andere vrouwen profiteren van een hoog niveau van arbeidsmigratie, zijn vrouwen waarvan gezinsleden migreren gebonden aan familieboerderijen (Hoofdstuk 3). In vergelijking met migrantenmoeders die niet bij hun kinderen wonen, zien we dat degenen die wel bij hun

kinderen wonen een aanzienlijk inkomensverlies lijden (Hoofdstuk 4). De kans op betaald werk van vrouwen hing negatief samen met de financiële situatie van het gezin maar deze associatie verklaarde niet het effect van economische ontwikkeling op de werkgelegenheid van vrouwen (Hoofdstuk 2).

References

Ai, C. and E. C. Norton (2003). Interaction terms in logit and probit models. *Economics Letters 80*(1), 123–29.

Allison, P. D. (2002). *Missing Data*. California: Sage Publications.

Allison, P. D. (2009). *Fixed Effects Regression Models*. California: Sage Publications.

Amuedo-Dorantes, C. and S. Pozo (2006). Migration, remittances, and male and female employment patterns. *The American Economic Review 96*(2), 222–26.

Anderson, D. J., M. Binder, and K. Krause (2002). The motherhood wage penalty: Which mothers pay it and why? *American Economic Review 92*(2), 354–58.

Anderson, D. J., M. Binder, and K. Krause (2003). The motherhood wage penalty revisited: Experience, heterogeneity, work effort, and work-schedule flexibility. *Industrial and Labor Relations Review 56*(2), 273–94.

Arrow, K. (1973). The theory of discrimination. In O. Ashenfelter and A. Rees (Eds.), *Discrimination in Labor Markets*, pp. 1–37. Princeton: Princeton University Press.

Aycan, Z. and M. Eskin (2005). Relative contributions of childcare, spousal support, and organizational support in reducing work–family conflict for men and women: The case of Turkey. *Sex roles 53*(7-8), 453–71.

Bauer, J., W. Feng, N. E. Riley, and Z. Xiaohua (1992). Gender inequality in urban China: Education and employment. *Modern China 18*(3), 333–70.

Becker, G. S. (1981). *A Treatise on the Family*. Massachusetts: Harvard University Press.

Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. Chicago: The University of Chicago Press.

Beller, E. (2009). Bringing intergenerational social mobility research into the twenty-first century: Why mothers matter. *American Sociological Review 74*(4), 507–528.

Benard, S. and S. J. Correll (2010). Normative discrimination and the motherhood penalty. *GENDER & SOCIETY 24*(5), 616–46.

Berik, G., X. Dong, and G. Summerfield (2007). China's transition and feminist economics. *Feminist Economics 13*(3-4), 1–33.

Bian, Y. (1997). Bringing strong ties back in: Indirect ties, network bridges, and job searches in China. *American Sociological Review 62*(3), 366–85.

Bian, Y. (2002). Chinese social stratification and social mobility. *Annual Review of Sociology 28*, 91–116.

Bian, Y. and L. Li (2012). The Chinese General Social Survey (2003-8). *Chinese Sociological Review 45*(1), 70–97.

Bian, Y. and J. R. Logan (1996). Market transition and the persistence of power: The changing stratification system in urban China. *American Sociological Review 61*(5), 739–58.

Bian, Y. and Z. Zhang (2002). Marketization and income distribution in urban China, 1988 and 1995. *Research in Social Stratification and Mobility 19*, 377–415.

Bianchi, S. M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography 37*(4), 401–14.

Bianchi, S. M. and M. A. Milkie (2010). Work and family research in the first decade of the 21st century. *Journal of Marriage and Family 72*(3), 705–25.

Blau, D. M. and P. K. Robins (1991). Child care demand and labor supply of young mothers over time. *Demography 28*(3), 333–51.

Blau, P. M. and O. D. Duncan (1967). *The American occupational structure*. New York: John Wiley & Sons.

Bourdieu, P. and J.-C. Passeron (1990). *Reproduction in Education, Society and Culture*. London: Sage Publications.

Breen, R. and J. H. Goldthorpe (1997). Explaining educational differentials: Towards a formal rational action theory. *Rationality and Society 9*(3), 275–305.

Breen, R. and J. O. Jonsson (2005). Inequality of opportunity in comparative perspective: Recent research on educational attainment and social mobility. *Annual Review of Sociology 31*(1), 223–43.

Brewster, K. L. and R. R. Rindfuss (2000). Fertility and women's employment in industrialized nations. *Annual review of sociology 26*, 271–96.

Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *American Journal of Sociology 100*(3), 652–88.

Brinton, M. C. and E. Oh (2019). Babies, work, or both? Highly educated women's employment and fertility in East Asia. *American Journal of Sociology 125*(1), 105–40.

Brooks–Gunn, J., W.-J. Han, and J. Waldfogel (2002). Maternal employment and child cognitive outcomes in the first three years of life: The NICHD study of early child care. *Child Development 73*(4), 1052–72.

Buchmann, C. and T. A. DiPrete (2006). The growing female advantage in college completion: The role of family background and academic achievement. *American Sociological Review 71*(4), 515–41.

Budig, M. J. and P. England (2001). The wage penalty for motherhood. *American Sociological Review 66*(2), 204–25.

Budig, M. J., J. Misra, and I. Boeckmann (2016). Work-family policy trade-offs for mothers? Unpacking the cross-national variation in motherhood earnings penalties. *Work and Occupations 43*(2), 119–77.

Cao, Y. and C.-Y. Hu (2007). Gender and job mobility in postsocialist China: A longitudinal study of job changes in six coastal cities. *Social Forces 85*(4), 1535–60.

Carmichael, S. (2011). Marriage and power: Age at first marriage and spousal age gap in lesser developed countries. *The History of the Family 16*(4), 416–36.

Chang, H., X. Dong, and F. Macphail (2011). Labor migration and time use patterns of the left-behind children and elderly in rural China. *World Development 39*(12), 2199–10.

Chang, H., F. MacPhail, and X. Dong (2011). The feminization of labor and the time-use gender Gap in rural China. *Feminist Economics 17*(4), 93–124.

Chen, F. (2004). The division of labor between generations of women in rural China. *Social Science Research 33*(4).

Chen, F. (2005). Residential patterns of parents and their married children in contemporary China: A life course approach. *Population Research and Policy Review 24*(2), 125–48.

Chen, F. and K. Korinek (2010). Family life course transitions and rural household economy during China's market reform. *Demography 47*(4), 963–87.

Chen, F., G. Liu, and C. A. Mair (2011). Intergenerational ties in context: Grandparents caring for grandchildren in China. *Social Forces 90*(2), 571–94.

Chen, F., S. E. Short, and B. Entwisle (2000). The impact of grandparental proximity on maternal childcare in China. *Population Research and Policy Review 19*(6), 571–90.

Chen, L. and H. Standing (2007). Gender equity in transitional China's healthcare policy reforms. *Feminist Economics 13*(3-4), 189–212.

Chen, Y. and G. Z. Jin (2012). Does health insurance coverage lead to better health and educational outcomes? evidence from rural China. *Journal of Health Economics 31*(1), 1–14.

Cheng, C. (2018). Women's education, intergenerational coresidence, and household decision-making in China. *Journal of Marriage and Farmily 81*(1), 115–32.

Compton, J. and R. A. Pollak (2014). Family proximity, childcare, and women's labor force attachment. *Journal of Urban Economics 79*, 72–90.

Craig, L., A. Powell, and N. Cortis (2012). Self-employment, work-family time and the gender division of labour. *Work, Employment and Society 26*(5), 716–34.

Crandall, A., K. VanderEnde, Y. F. Cheong, S. Dodell, and K. M. Yount (2016). Women's age at first marriage and postmarital agency in Egypt. *Social Science Research 57*, 148–60.

Da Corta, L. and D. Venkateshwarlu (1999). Unfree relations and the feminisation of agricultural labour in Andhra Pradesh, 1970-95. *Journal of Peasant Studies 26*(2-3).

Davis, S. N. and T. N. Greenstein (2009). Gender ideology: Components, predictors, and consequences. *Annual Review of Sociology 35*, 87–105.

de Brauw, A., J. Huang, and S. Rozelle (2004). The sequencing of reform policies in China's agricultural transition. *Economics of Transition 12*(3), 427–65.

de Brauw, A., J. Huang, S. Rozelle, L. Zhang, and Y. Zhang (2002). The evolution of China's rural labor markets during the reforms. *Journal of Comparitive Economics 30*(2), 329–53.

de Brauw, A., Q. Li, C. Liu, S. Rozelle, and L. Zhang (2008). Feminization of agriculture in China? Myths surrounding women's participation in farming. *The China Quarterly 194*, 327–48.

Dilli, S., S. G. Carmichael, and A. Rijpma (2019). Introducing the historical gender equality index. *Feminist Economics 25*(1), 31–57.

Ding, S., X. Dong, and S. Li (2009). Women's employment and family income inequality during China's economic transition. *Feminist Economics 15*(3), 163–90.

Dong, H. and Y. Xie (2017). Multi-generational family structure and migration in rural China. Chicago.

Drefahl, S. (2010). How does the age gap between partners affect their survival? *Demography 47*(2), 313–26.

Du, F. and X. Dong (2009). Why do women have longer durations of unemployment than men in post-restructuring urban China? *Cambridge Journal of Economics 33*(2), 233–52.

Duan, C., L. Lv, and X. Zou (2013). Major challenges for China's floating population and policy suggestions: an analysis of the 2010 population census data. *Population Research (in Chinese) 37*(2), 17–24.

Démurger, S. and S. Li (2013). Migration, remittances, and rural employment patterns: Evidence from china. *Research in Labor Economics 37*, 31–63.

Enders, C. K. and D. Tofighi (2007). Centering predictor variables in cross - sectional multilevel models: A new look at an old issue. *Psychological Methods 12*(2), 121–38.

Entwisle, B. and G. E. Henderson (Eds.) (2000). *Re-drawing boundaries: Work, households, and gender in China*. Berkeley: University of California Press.

Erola, J., S. Jalonen, and H. Lehti (2016). Parental education, class and income over early life course and children's achievement. *Research in Social Stratification and Mobility 44*, 33–43.

Fan, C. C. (2008). *China on the Move: Migration, the state, and the household*. Abingdon, Oxon: Routledge.

Fan, C. C. and T. Li (2020). Split households, family migration and urban settlement: Findings from China's 2015 national floating population survey. *Social Inclusion 8*(1), 252–63.

Filer, R. K. (1985). Male-female wage differences: The importance of compensating differentials. *Industrial & Labor Relations Review 38*(3), 426–37.

Fuller, S. (2018). Segregation across workplaces and the motherhood wage gap: Why do mothers work in low-wage establishments? *Social Forces 96*(4), 1443–76.

Fuller, S. and C. E. Hirsh (2019). "family-friendly" jobs and motherhood pay penalties: The impact of flexible work arrangements across the educational spectrum. *Work and Occupations 46*(1), 3–44.

Gangl, M. and A. Ziefle (2009). Motherhood, labor force behavior, and women's careers: An empirical assessment of the wage penalty for motherhood in Britain, Germany, and the United States. *Demography 46*(2), 341–69.

Ganzeboom, H. B., P. M. De Graaf, and D. J. Treiman (1992). A standard international socio-economic index of occupational status. *Social Science Research 21*(1), 1–56.

Gerber, T. P. and M. Hout (1998). More shock than therapy: Market transition, employment, and income in Russia, 1991-1995. *American Journal of Sociology 104*(1), 1–50.

Gerber, T. P. and M. Hout (2004). Tightening up: Declining class mobility during Russia's market transition. *American Sociological Review 69*(5), 677–703.

Gerber, T. P. and O. Mayorova (2006). Dynamic gender differences in a post-socialist labor market: Russia, 1991-1997. *Social Forces 84*(4), 2047–75.

Glick, J. E. and M. J. White (2004). Post-secondary school participation of immigrant and native youth: the role of familial resources and educational expectations. *Social Science Research 33*(2), 272–99.

Goldenberg, C., R. Gallimore, L. Reese, and H. Garnier (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. *American Educational Research Journal 38*(3), 547–82.

Goldin, C. (1994). The U-shaped female labor force function in economic development and economic history.

Goldscheider, F., E. Bernhardt, and T. Lappegård (2015). The gender revolution: A framework for understanding changing family and understanding changing family and demographic behavior. *Population and Development Review 41*(2), 207–39.

Goodburn, C. (2015). Migrant girls in Shenzhen: Gender, education and the urbanization of aspiration. *The China Quarterly 222*, 320–38.

Guo, S. and M. W. Fraser (2015). *Propensity Score Analysis: Statistical Methods and Applications* (2 ed.). Los Angeles: Sage Publications.

Hare, D. (2016). What accounts for the decline in labor force participation among married women in urban China, 1991–2011? *China Economic Review 38*, 251–66.

He, G. and X. Wu (2017). Marketization, occupational segregation, and gender earnings inequality in urban China. *Social Science Research 65*, 96–111.

He, G. and X. Wu (2018). Dynamics of the gender earnings inequality in reform-era urban China. *Work, Employment and Society 32*(4), 726–46.

Hellevik, O. (2009). Linear versus logistic regression when the dependent variable is a dichotomy. *Quality & Quantity 43*, 59–74.

Hitlin, S. (2006). Parental influences on children's values and aspirations: Bridging two theories of social class and socialization. *Sociological Perspectives 49*(1), 25–46.

Honig, E. (2000). Iron girls revisited gender and the politics of work in the cultural revolution, 1966-76. In B. Entwisle and G. E. Henderson (Eds.), *Re-drawing boundaries: Work, households, and gender in China*, Chapter 6, pp. 97–110. Berkeley: University of California Press.

Honig, E. (2015). The life of a slogan. In B. J. Bossler (Ed.), *Gender and Chinese History: Transformative Encounters*, pp. 185–207. Seattle and London: University of Washington Press. 8.

Honig, E. and G. Hershatter (1988). *Personal voices: Chinese women in the 1980's*. Stanford: Stanford University Press.

Hout, M. (2018). Americans' occupational status reflects the status of both of their parents. *Proceedings of the National Academy of Sciences 115*(38), 9527–32.

Howell, J. (2006). Women's political participation in China: in Whose interests elections? *Journal of Contemporary China 15*(49), 603–19.

Imbens, G. W. (2000). The role of the propensity score in estimating dose-response functions. *Biometrika 87*(3), 706–10.

Jackson, M. and G. Evans (2017). Rebuilding walls: Market transition and social mobility in the post-socialist societies of Europe. *Sociological Science 4*, 54–79.

Jarvis, B. F. and X. Song (2017). Rising intragenerational occupational mobility in the United States, 1969 to 2011. *American Sociological Review 82*(3), 568–99.

Ji, Y., X. Wu, S. Sun, and G. He (2017). Unequal care, unequal work: Toward a more comprehensive understanding of gender inequality in post-reform urban China. *Sex Roles 77*(11-12), 765–78.

Jia, N. and X. Dong (2013). Economic transition and the motherhood wage penalty in urban China: investigation using panel data. *Cambridge Journal of Economics 37*, 819–43.

Juhn, C. and K. M. Murphy (1997). Wage inequality and family labor supply. *Journal of Labor Economics 15*(1), 72–97.

Kahn, J. R., J. García-Manglano, and S. M. Bianchi (2014). The motherhood penalty at midlife: Long-term effects of children on women's careers. *Journal of Marriage and Family 76*(1), 56–72.

Kalmijn, M. (1994). Mother's occupational status and children's schooling. *American Sociological Review 59*(2), 257–75.

Killewald, A. and M. Gough (2013). Does specialization explain marriage penalties and premiums? *American Sociological Review 78*(3), 477–502.

Knigge, A., I. Maas, M. H. van Leeuwen, and K. Mandemakers (2014). Status attainment of siblings during modernization. *American Sociological Review 79*(3), 549–74.

Kong, S., I. Maas, and M. H. D. van Leeuwen (2020). Like my mother before me: Gender and cross-gender effects on status attainment during modernization. *Research in Social Stratification and Mobility 69*, 100541.

Korupp, S. E., H. B. Ganzeboom, and T. van der Lippe (2002). Do mothers matter? A comparison of models of the influence of mothers' and fathers' educational and occupational status on children's educational attainment. *Quality & Quantity 36*, 17–42.

Kulik, L. (2002). The impact of social background on gender-role ideology: Parents' versus children's attitudes. *Journal of Family Issues 23*(1), 53–73.

Lau, L. J., Y. Qian, and G. Roland (2000). Reform without losers: An interpretation of China's dual-track approach to transition. *Journal of Political Economy 108*(1), 120–43.

Leite, W. L., F. Jimenez, Y. Kaya, L. M. Stapleton, J. W. MacInnes, and R. Sandbach (2015). An evaluation of weighting methods based on propensity scores to reduce selection bias in multilevel observational studies. *Multivariate Behavioral Research 50*(3), 265–84.

Li, J., Y. Gu, and C. Zhang (2015). Hukou-based stratification in urban China's segmented economy. *Chinese Sociological Review 47*(2), 154–76.

Li, T., W. Fan, and J. Song (2020). The household structure transition in China: 1982-2015. *Demography 57*, 1369–91.

Li, Z. and Z. Liang (2016). Gender and job mobility among rural to urban temporary migrants in the pearl river delta in China. *Urban Studies 53*(16), 3455–71.

Liang, Z. and Z. Ma (2004). China's floating population: New evidence from the 2000 census. *Population and Development Review 30*(3), 467–88.

Lin, N. (1999). Social networks and status attainment. *Annual Review of Sociology 25*, 467–87.

Lin, N., W. M. Ensel, and J. C. Vaughn (1981). Social resources and strength of ties: Structural factors in occupational status attainment. *American Sociological Review 46*(4), 393–405.

Lippényi, Z. and T. P. Gerber (2016). Inter-generational micro-class mobility during and after socialism: The power, education, autonomy, capital, and horizontal (PEACH) model in Hungary. *Social Science Research 58*, 80–103.

Liu, B. (1994). Dui "nannv pingdeng de shehuixue sikao" de sikao. *Sociological Research 2*, 68–71.

Liu, J. (2007). Gender dynamics and redundancy in urban China. *Feminist Economics 13*(3-4), 125–58.

Lunceford, J. K. and M. Davidian (2004). Stratification and weighting via the propensity score in estimation of causal treatment effects: A comparative study. *Statistics in Medicine 23*, 2937–60.

Magnusson, C. and M. Nermo (2017). Gender, parenthood and wage differences: The importance of time-consuming job characteristics. *Social Indicators Research 131*, 797–816.

Marks, G. N. (2007). Are father's or mother's socioeconomic characteristics more important influences on student performance? Recent international evidence. *Social Indicators Research 85*(2), 293–309.

Matthews, R. and V. Nee (2000). Gender inequality and economic growth in rural China. *Social Science Research 29*(4), 606–32.

Maurer-Fazio, M., R. Connelly, L. Chen, and L. Tang (2011). Childcare, eldercare, and labor force participation of married women in urban China, 1982–2000. *Journal of Human Resources 46*(2), 261–94.

McCaffrey, D. F., G. Ridgeway, and A. R. Morral (2004). Propensity score estimation with boosted regression for evaluating causal effects in observational studies. *Psychological Methods 9*(4), 403–25.

Migrant Population Service Center, N. H. C. P. (2018). Report on China's Migrant Population Development. Technical report, Beijing.

Mincer, J. (1962). Labor force participation of married women: A study of labor supply. In N. B. C. for Economic Research (Ed.), *Aspects of Labor Economics*, pp. 63–105. Princeton: Princeton University Press.

Mincer, J. and S. W. Polachek (1974). Family investments in human capital: Earnings of women. *Journal of Political Economy 82*(2), S76–S108.

Moen, P., M. A. Erickson, and D. Dempster-McClain (1997). Their mother's daughters? The intergenerational transmission of gender attitudes in a world of changing roles. *Journal of Marriage and the Family 59*(2), 281–93.

Mohapatra, S., S. Rozelle, and R. Goodhue (2007). The rise of self-employment in rural China: Development or distress? *World Development 35*(1), 163–81.

Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review 26*(1), 67–82.

Mu, R. and D. van de Walle (2011). Left behind to farm? Women's labor re-allocation in rural China. *Labour Economics 18*(Supplement1), 83–97.

Nee, V. (1989). A theory of market transition: From redistribution to markets in state socialism. *American Sociological Review 54*(5), 663–81.

Nee, V. (1991). Social inequalities in reforming state socialism: Between redistribution and markets in China. *American Sociological Review 56*(3), 267–82.

Nee, V. (1996). The emergence of a market society: Changing mechanisms of stratification in China. *American Journal of Sociology 101*(4), 908–49.

Nee, V. and R. Matthews (1996). Market transition and societal transformation in reforming state socialism. *Annual Review of Sociology 22*(1), 401–35.

Oesch, D., O. Lipps, and P. McDonald (2017). The wage penalty for motherhood: Evidence on discrimination from panel data and a survey experiment for Switzerland. *Demographic Research 37*(56), 1793–824.

Opper, S., S. M. Wong, and R. Hu (2002). Party power, market and private power: Chinese Communist Party persistence in China's listed companies. *Research in Social Stratification and Mobility 19*, 105–38.

Parcel, T. L. and M. J. Dufur (2001). Capital at home and at school: Effects on student achievement. *Social Forces 79*(3), 881–911.

Parcel, T. L., M. J. Dufur, and R. C. Zito (2010). Capital at home and at school: A review and synthesis. *Journal of Marriage and Family 72*(4), 828–46.

Parcel, T. L. and E. G. Menaghan (1990). Maternal working conditions and children's verbal facility: Studying the intergenerational transmission of inequality from mothers to young children. *Social Psychology Quarterly 53*(2), 132–47.

Parcel, T. L. and E. G. Menaghan (1994). Early parental work, family social capital, and early childhood outcomes. *American Journal of Sociology 99*(4), 972–1009.

Parkin, F. (1972). *Class Inequality and Political Order: Social Stratification in Capitalist and Communist Societies*. London: Paladin Books.

Pattnaik, I., K. Lahiri-Dutt, S. Lockie, and B. Pritchard (2018). The feminization of agriculture or the feminization of agrarian distress? Tracking the trajectory of women in agriculture in India. *Journal of the Asia Pacific Economy 23*(1), 138–55.

Peng, Y. (2018). Bringing children to the cities: gendered migrant parenting and the family dynamics of rural-urban migrants in China. *Journal of Ethnic and Migration Studies 46*(7), 1–19.

Polavieja, J. G. and L. Platt (2014). Nurse or mechanic? The role of parental socialization and children's personality in the formation of sex-typed occupational aspirations. *Social Forces 93*(1), 31–61.

Qian, Z. and R. Hodson (2011). Sent down in China: Stratification challenged but not denied. *Research in Social Stratification and Mobility 29*, 205–19.

Raymo, J. M., H. Park, Y. Xie, and W.-j. J. Yeung (2015). Marriage and family in East Asia: Continuity and change. *Annual Review of Sociology 41*(1), 471–92.

Riederer, B. and C. Berghammer (2019). The part-time revolution: Changes in the parenthood effect on women's employment in Austria. *European Sociological Review 36*(2), 284–302.

Rona-Tas, A. (1994). The first shall be last? Entrepreneurship and communist cadres in the transition from socialism. *American Journal of Sociology 100*(1), 40–69.

Rona-Tas, A. and A. Guseva (2001). The privileges of past communist party membership in Russia and endogenous switching regression. *Social Science Review 30*(4), 641–52.

Rosenfeld, R. A. (1978). Women's intergenerational occupational mobility. *American Sociological Review 43*(1), 36–46.

Rozelle, S., E. J. Taylor, and A. de Brauw (1999). Migration, remittances, and agricultural productivity in China. *The American Economic Review 89*(2), 287–91.

Schunck, R. (2013). Within and between estimates in random-effects models: Advantages and drawbacks of correlated random effects and hybrid models. *The Stata Journal 13*(1), 65–76.

Sewell, W. H., A. O. Haller, and M. A. Straus (1957). Social status and educational and occupational aspiration. *American Sociological Review 22*(1), 67–73.

Sewell, W. H., R. M. Hauser, and W. C. Wolf (1980). Sex, schooling, and occupational status. *American Journal of Sociology 86*(3), 551–83.

Shu, X. and Y. Bian (2002). Intercity variation in gender inequalities in China: Analysis of a 1995 national survey. *Research in Social Stratification and Mobility 19*, 269–309.

Shu, X. and Y. Bian (2003). Market transition and gender gap in earnings in urban China. *Social Forces 81*(4), 1107–45.

Shu, X. and M. M. Marini (1998). Gender-related change in occupational aspirations. *Sociology of Education 71*(1), 43–67.

Stark, O. (1991). *The Migration of Labor*. Cambridge: Basil Blackwell.

Stark, O. and D. E. Bloom (1985). The new economics of labor migration. *American Economic Review 75*(2), 173–78.

Su, W., T. Eriksson, L. Zhang, and Y. Bai (2016). Off-farm employment and time allocation in on-farm work in rural China from gender perspective. *China Economic Review 41*, 34–45.

Summerfield, G. (1994). Chinese women and the post-Mao economic reforms. In N. Aslanbeigui, S. Pressman, and G. Summerfield (Eds.), *Women in the Age of Eonomic Transformation: Gender Impact of Reforms in Post-Socialist and Developing Countries*, pp. 113–28. London: Routledge. Section: 8.

Sun, L. (1994). Chongjian xingbie jiaose guanxi. *Sociological Research 6*, 65–8.

Swider, S. (2015). Building China: precarious employment among migrant construction workers. *Work, Employment and Society 29*(1), 41–59.

Szelenyi, S. (1998). *Equality by Design: The Grand Experiment in Destratification in Socialist Hungary*. Stanford: Stanford University Press.

Taylor, J. E., S. Rozelle, and A. De Brauw (2003). Migration and incomes in source communities: A new economics of migration perspective from China. *Economic Development and Cultural Change 52*(1), 75–101.

Treiman, D. J. (1997). *Life Histories and Social Change in Contemporary China: Provisional Codebook*. Los Angeles.

van der Lippe, T. and É. Fodor (1998). Changes in gender inequality in six Eastern European countries. *Acta sociologica 41*(2-3), 131–49.

van der Lippe, T. and L. van Dijk (2002). Comparative research on women's employment. *Annual Review of Sociology 28*, 221–41.

Verhoeven, W.-J., W. Jansen, and J. Dessens (2005). Income attainment during transformation processes. a meta-analysis of the market transition theory. *European Sociological Review 21*(3), 201–26.

Villanueva, A. and K.-H. Lin (2019). Motherhood wage penalties in Latin America: The significance of labor informality. *Social Forces*, 59–85.

Walder, A. G. (2003). Elite opportunity in transitional economies. *American Sociological Review 68*(6), 899–916.

Waldfogel, J. (1997). The effect of children on women's wages. *American Sociological Review 62*(2), 209–17.

Waldfogel, J., W.-J. Han, and J. Brooks-Gunn (2002). The effects of early maternal employment on child cognitive development. *Demography 39*(2), 369–92.

West, C. and D. H. Zimmerman (1987). Doing Gender. *Gender & Society 1*(2), 125–51.

Whyte, M. K. and W. L. Parish (1985). *Urban Life in Contemporary China*. Chicago: University of Chicago Press.

Woo, W. T., S. Parker, and J. D. Sachs (Eds.) (1997). *Economies in Transition: Comparing Asia and Eastern Europe*. Cambridge, Massachusetts: MIT Press.

Wu, X. (2010). Economic transition, school expansion and educational inequality in China, 1990-2000. *Research in Social Stratification and Mobility 28*(1).

Wu, X. (2019). Inequality and social stratification in postsocialist China. *Annual Review of Sociology 45*, 363–82.

Wu, X. and X. Song (2014). Ethnic stratification and China's economic transition: Evidence from the Xinjiang Uyghur autonomous region. *Social Science Research 44*, 158–72.

Wu, X. and D. Treiman (2007). Inequality and equality under chinese socialism: The hukou system and intergenerational occupational mobility. *American Journal of Sociology 113*(2), 415–45.

Wu, X. and Z. Zhang (2010). Changes in educational inequality in China, 1990–2005: Evidence from the population census data. *Research in the Sociology of Education 17*, 123–52.

Wu, X. and B. Zheng (2018). Household registration, urban status attainment, and social stratification in china. *Research in Social Stratification and Mobility 53*, 40–49.

Wu, Y. (2012). Gender gap in educational attainment in urban and rural China. *Chinese Journal of Sociology 4*(32), 112–37.

Wu, Y. and D. Zhou (2015). Women's labor force participation in urban China, 1990–2010. *Chinese Sociological Review 47*(4), 314–42.

Xu, H. (2017). The time use pattern and labour supply of the left behind spouse and children in rural China. *China Economic Review 46*, 77–101.

Yao, Y. and W. You (2018). Women's political participation and gender gaps of education in China: 1950–1990. *World Development 106*, 220–37.

Young, N. A. E. (2020). Getting the teacher's attention: Parent-teacher contact and teachers' behavior in the classroom. *Social Forces*, 560–89.

Yu, J. and Y. Xie (2018). Motherhood penalties and living arrangements in China. *Journal of Marriage and Family 80*(5), 1067–86.

Yu, W.-h. and C.-L. J. Kuo (2017). The motherhood wage penalty by work conditions: How do occupational characteristics hinder or empower mothers? *American Sociological Review 82*(4), 744–69.

Zhan, H. J. and R. J. Montgomery (2003). Gender and elder care in China: The influence of filial piety and structural constraints. *GENDER & SOCIETY 17*(2), 209–29.

Zhang, L., A. de Brauw, and S. Rozelle (2004). China's rural labor market development and its gender implications. *China Economic Review 15*(2), 230–47.

Zhang, Q. F. and Z. Pan (2012). Women's entry into self-employment in urban China: The role of family in creating gendered mobility patterns. *World Development 40*(6), 1201–12.

Zhang, Y., E. Hannum, and M. Wang (2008). Gender-based employment and income differences in urban China: Considering the contributions of marriage and parenthood. *Social Forces 86*(4), 1529–60.

Zhang, Z. and X. Wu (2017). Occupational segregation and earnings inequality: Rural migrants and local workers in urban China. *Social Science Research 61*, 57–74.

Zhao, M. and E. Hannum (2019). Stark choices: Work-family tradeoffs among migrant women and men in urban China. *Chinese Sociological Review 51*(4), 1–32.

Zhao, M. and Y. Jin (2019). Migrant workers in Beijing: How hometown ties affect economic outcomes. *Work, Employment and Society 34*(5).

Zhao, Y. (1999). Leaving the countryside: Rural-to-urban migration decisions in China. *American Economic Review 89*(2), 281–86.

Zhou, X. and Y. Xie (2019). Market transition, industrialization, and social mobility trends in postrevolution China. *American Journal of Sociology 124*(6), 1810–47.

Zhou, Y. (2020). "Good mothers work": How maternal employment shapes women's expectation of work and family in contemporary urban China. *Journal of Social Issues 76*(3), 659–80.

Acknowledgment 致谢

After four and half years of blood, sweat and tears, I am finally at the finishing line of my PhD study. Throughout the writing of this dissertation, I received so much help and support from so many people. I would like to use this opportunity to say thank you to all the people who have directly or indirectly contributed to the making of this dissertation.

First and foremost, I want to express my deepest gratitude towards my supervisors Ineke Maas and Marco van Leeuwen. We started working together in 2015 when I was a master student. Throughout the years, your insightful and detailed feedbacks pushed me to sharpen my thinking and brought my work to a higher level. Your patience, emotional support, and guidance were invaluable to me, especially when I stumbled and fell. Both of you have had tremendously influence on me. Ineke, I admire your sharpness and integrity. Your rigorosity and a keen eye for details safeguarded the quality of this research. Marco, your wittiness and humour truly made every meeting and conversation with you joyful. I have benefited greatly from your expertise and fresh perspectives. I have learned so much from both of you, more than I could ever give you credit for.

I would also like to extend my deepest gratitude to my internship supervisor Hao Dong. My time at the Center of Social Science Research at Peking University would not have been so fruitful without your guidance and support. You offered a great amount of assistance to the writing of my dissertation and also to my future career for which I will always remain grateful.

I must also thank all the people I met at the Center of Social Science Research at Peking University. 程诚、陆风鸣、周扬、聂雨琪、王婷婷：谢谢你们毫不犹豫地接纳我，让我能很快适应在北大的生活。跟你们一起吃饭、逛校园和闲聊的时光，虽然短暂却是我在北大最愉快的记忆。我也需要感谢张慧老师和杜老师，她们悉心帮我处理好访学的一切琐事，因为她们，我才能顺利地在北大访学。

Some people say that pursuing for a PhD is a journey of solitude. Then I guess they must have not met Eva, Judith, Mathijs, Jannes, Marcus, and Joris. My dearest officemates and "noisy" neighbors, I cannot express enough my appreciation to all of you. Without all the good laughs, afternoon walks, and educational music ("hoe minder je werkt, hoe minder binnen komt"), I would not have had such wonderful four years. Eva, Judith, and Mathijs thank you for always lending me your ears whenever I need help, big or small. Jannes and Joris, thank you for taking such a good care of me, especially during the lock down. Marcus, your knowledge on statistics, STATA, and progressive rock have greatly facilitated the writing of my dissertation.

I would also like to thank all the fellow PhD-candidates whom I have met at Utrecht, Müge, Leonnie, Nikki, Jelle, Hendrik, Rita, Sanjana, Kim, Anne, Ana, Nick, Christian, and Ece to name a few. All your warm greetings and lunch conversations were part of the work envionment that made Sociology Department truly special for me. I appreciated our daily lunch breaks even more so having gone through the lock down. I must also thank the amazing administrative staff at Sociology Department with special mentions to Ellen, for

your patience and unfailing assistance to all the administrative issues related to my stay at Utrecht.

I am also grateful for the participants of the ICS forum days and the participants of Migration and Social Stratification seminar (MaSS) at Utrecht University with special mentions to Vardan, Antonie, Tom, Wybren, Nora, and Evi. Most chapters of this dissertation profited greatly from the stimulating discussions and insightful feedbacks.

Next to my research, I also had great pleasure working with the International Marketing team at Utrecht University. Rob and Laura, thank you both for this amazing opportunity and your unwavering trust in me. Amy, it was really a pleasure working with you. I truly wish that we had more time working together.

Last but not the least, I would like to wholeheartedly thank my friends and family. Menglin (Mowgli), thank you for all your love and support. 峰峰、匡沈、丁丁和Hugo，我最好的朋友们，感谢你们耐心倾听我的唠叨和抱怨，分享我的喜怒哀乐。诗雨，你是我在荷兰认识的第一个朋友，幸好有你，我才能平稳地开始留学生活。我在中文学校的兼职期间认识的朋友们，尤其是霜霜和张瑜，我在荷兰的生活能如此愉快离不开你们。霜霜，很希望能有机会能跟你在上海团聚。张瑜，谢谢你和海涵，让我在荷兰也感受到了湖南老家的温暖。岑萱姐姐，如果当时没有你在荷兰，我很可能都不会选择荷兰作为留学地，谢谢你在荷兰对我的悉心照顾和关心。还有同在荷兰奋斗过的SaSR小分队成员以及所有在荷留学期间认识的伙伴们，谢谢你们。

最后，感谢我的父母：孔铁辉先生和杨湘奇女士。因为我的父母，我才能健康平安地长大，才能有机会出国留学。也正是因为他们经常像对待朋友一样跟我分享他们的人生经历，我才对社会学越学越有兴趣。我父亲的创业经历启发了我本科论文的选题：什么样的人会在改革开放初期选择创业经商。留学荷兰后，我逐渐对性别议题产生兴趣，开始重新思考一些我习以为常的事情，比如我小的时候，我母亲是怎样平衡事业与家庭的。所以，在最后写博士论文综述时，我决定开篇转述我母亲的成长故事，她的人生经历是我写这本论文的初衷。

我的父母给了我他们能给的最好的家教，为此我无比感激。同时，我也很庆幸我能用我自己的所学去讲述他们以及和他们一样的千千万万普通人的故事。

About the Author

Siyang Kong obtained her Research Master's degree in Sociology and Social Research at Utrecht University. She conducted the present study as a part of her Ph.D. research at the Interuniversity Center for Social Science Theory and Methodology (ICS) and the Department of Sociology of Utrecht University. Her research concerns gender, labor market, social stratification and mobility.

Research output

Kong, S., Maas, I., & van Leeuwen, M. H. (2020). Like My Mother Before Me: Gender and Cross-Gender Effects on Status Attainment during Modernization. Research in Social Stratification and Mobility, 69, 100541.doi.org/10.1016/j.rssm.2020.100541

Working in progress

Kong, S., Hao.D (2021). Doubly disadvantaged: The motherhood earnings penalty among internal migrants in China. under review

Kong, S. (2021). Market transition, status attainment and the role of mothers' socioeconomic status in China. under review

ICS dissertation series

The ICS series presents dissertations of the Interuniversity Center for Social Science Theory and Methodology. Each of these studies aims at integrating explicit theory formation with state of the art empirical research or at the development of advanced methods for empirical research. The ICS was founded in 1986 as a cooperative effort of the universities of Groningen and Utrecht. Since 1992, the ICS expanded to the University of Nijmegen and since 2017 to the University of Amsterdam (UvA). Most of the projects are financed by the participating universities or by the Dutch Research Council (NWO). The international composition of the ICS graduate students is mirrored in the increasing international orientation of the projects and thus of the ICS series itself.

1. Kees van Liere (1990), "Lastige Leerlingen. Een empirisch onderzoek naar sociale oorzaken van probleemgedrag op basisscholen." Amsterdam: Thesis Publishers

2. Marco van Leeuwen (1990), "Bijstand in Amsterdam, ca. 1800 - 1850. Armenzorg als beheersings en overlevingsstrategie." ICS-dissertation, Utrecht

3. Ineke Maas (1990), "Deelname aan podiumkunsten via de podia, de media en actieve beoefening. Substitutie of leereffecten?" Amsterdam: Thesis Publishers

4. Marjolein Broese van Groenou (1991), "Gescheiden Netwerken. De relaties met vrienden en verwanten na echtscheiding" Amsterdam: Thesis Publishers

5. Jan van den Bos (1991), "Dutch EC Policy Making. A Model Guided Approach to Coordination and Negotiation." Amsterdam: Thesis Publishers

6. Karin Sanders (1991), "Vrouwelijke Pioniers. Vrouwen en mannen met een 'mannelijke' hogere beroepsopleiding aan het begin van hun loopbaan." Amsterdam: Thesis Publishers

7. Sjerp de Vries (1991), "Egoism, Altruism, and Social Justice. Theory and Experiments on Cooperation in Social Dilemmas." Amsterdam: Thesis Publishers

8. Ronald Batenburg (1991), "Automatisering in bedrijf." Amsterdam: Thesis Publishers

9. Rudi Wielers (1991), "Selectie en allocatie op de arbeidsmarkt. Een uitwerking voor de informele en geïnstitutionaliseerde kinderopvang." Amsterdam: Thesis Publishers

10. Gert Westert (1991), "Verschillen in ziekenhuisgebruik." ICS-dissertation, Groningen

11. Hanneke Hermsen (1992), "Votes and Policy Preferences. Equilibria in Party Systems." Amsterdam: Thesis Publishers

12. Cora Maas (1992), "Probleemleerlingen in het basisonderwijs" Amsterdam: Thesis Publishers

13. Ed Boxman (1992), "Contacten en carrière. Een empirisch theoretisch onderzoek naar de relatie tussen sociale netwerken en arbeidsmarktposities" Amsterdam: Thesis Publishers

14. Conny Taes (1992), "Kijken naar banen. Een onderzoek naar de inschatting van arbeidsmarktkansen bij schoolverlaters uit het middelbaar beroepsonderwijs." Amsterdam:

Thesis Publishers

15. Peter van Roozendaal (1992), "Cabinets in Multi Party Democracies. The Effect of Dominant and Central Parties on Cabinet Composition and Durability." Amsterdam: Thesis Publishers

16. Marcel van Dam (1992), "Regio zonder regie. Verschillen in en effectiviteit van gemeentelijk arbeidsmarktbeleid." Amsterdam: Thesis Publishers

17. Tanja van der Lippe (1993), "Arbeidsverdeling tussen mannen en vrouwen." Amsterdam: Thesis Publishers

18. Marc Jacobs (1993), "Software: Kopen of Kopiëren? Een sociaal wetenschappelijk onderzoek onder PC gebruikers." Amsterdam: Thesis Publishers

19. Peter van der Meer (1993), "Verdringing op de Nederlandse arbeidsmarkt. Sector- en sekseverschillen." Amsterdam: Thesis Publishers

20. Gerbert Kraaykamp (1993), "Over lezen gesproken. Een studie naar sociale differentiatie in leesgedrag." Amsterdam: Thesis Publishers

21. Evelien Zeggelink (1993), "Strangers into Friends. The Evolution of Friendship Networks Using an Individual Oriented Modeling Approach." Amsterdam: Thesis Publishers

22. Jaco Berveling (1994), "Het stempel op de besluitvorming. Macht, invloed en besluitvorming op twee Amsterdamse beleidsterreinen." Amsterdam: Thesis Publishers

23. Wim Bernasco (1994), "Coupled Careers. The Effects of Spouse's Resources on Success at Work." Amsterdam: Thesis Publishers

24. Liset van Dijk (1994), "Choices in Child Care. The Distribution of Child Care Among Mothers, Fathers and Non Parental Care Providers." Amsterdam: Thesis Publishers

25. Jos de Haan (1994), "Research Groups in Dutch Sociology." Amsterdam: Thesis Publishers

26. Kwasi Boahene (1995), "Innovation Adoption as a Socio Economic Process. The Case of the Ghanaian Cocoa Industry." Amsterdam: Thesis Publishers

27. Paul Ligthart (1995), "Solidarity in Economic Transactions. An Experimental Study of Framing Effects in Bargaining and Contracting." Amsterdam: Thesis Publishers

28. Roger Leenders (1995), "Structure and Influence. Statistical Models for the Dynamics of Actor Attributes, Network Structure, and their Interdependence." Amsterdam: Thesis Publishers

29. Beate Volker (1995), "Should Auld Acquaintance Be Forgot...? Institutions of Communism, the Transition to Capitalism and Personal Networks: the Case of East Germany." Amsterdam: Thesis Publishers

30. Anneke Cancrinus-Matthijsse (1995), "Tussen hulpverlening en ondernemerschap. Beroepsuitoefening en taakopvattingen van openbare apothekers in een aantal West Europese landen." Amsterdam: Thesis Publishers

31. Nardi Steverink (1996), "Zo lang mogelijk zelfstandig. Naar een verklaring van

verschillen in oriëntatie ten aanzien van opname in een verzorgingstehuis onder fysiek kwetsbare ouderen." Amsterdam: Thesis Publishers

32. Ellen Lindeman (1996), "Participatie in vrijwilligerswerk." Amsterdam: Thesis Publishers

33. Chris Snijders (1996), "Trust and Commitments." Amsterdam: Thesis Publishers

34. Koos Postma (1996), "Changing Prejudice in Hungary. A Study on the Collapse of State Socialism and Its Impact on Prejudice Against Gypsies and Jews." Amsterdam: Thesis Publishers

35. Jooske van Busschbach (1996), "Uit het oog, uit het hart? Stabiliteit en verandering in persoonlijke relaties." Amsterdam: Thesis Publishers

36. René Torenvlied (1996), "Besluiten in uitvoering. Theorieën over beleidsuitvoering modelmatig getoetst op sociale vernieuwing in drie gemeenten." Amsterdam: Thesis Publishers

37. Andreas Flache (1996), "The Double Edge of Networks. An Analysis of the Effect of Informal Networks on Cooperation in Social Dilemmas." Amsterdam: Thesis Publishers

38. Kees van Veen (1997), "Inside an Internal Labor Market: Formal Rules, Flexibility and Career Lines in a Dutch Manufacturing Company." Amsterdam: Thesis Publishers

39. Lucienne van Eijk (1997), "Activity and Wellbeing in the Elderly." Amsterdam: Thesis Publishers

40. Róbert Gál (1997), "Unreliability. Contract Discipline and Contract Governance under Economic Transition." Amsterdam: Thesis Publishers

41. Anne-Geerte van de Goor (1997), "Effects of Regulation on Disability Duration." ICS-dissertation, Utrecht

42. Boris Blumberg (1997), "Das Management von Technologiekooperationen. Partnersuche und Verhandlungen mit dem Partner aus Empirisch Theoretischer Perspektive." ICS-dissertation, Utrecht

43. Marijke von Bergh (1997), "Loopbanen van oudere werknemers." Amsterdam: Thesis Publishers

44. Anna Petra Nieboer (1997), "Life Events and Well Being: A Prospective Study on Changes in Well Being of Elderly People Due to a Serious Illness Event or Death of the Spouse." Amsterdam: Thesis Publishers

45. Jacques Niehof (1997), "Resources and Social Reproduction: The Effects of Cultural and Material Resources on Educational and Occupational Careers in Industrial Nations at the End of the Twentieth Century." ICS-dissertation, Nijmegen

46. Ariana Need (1997), "The Kindred Vote. Individual and Family Effects of Social Class and Religion on Electoral Change in the Netherlands, 1956 1994." ICS-dissertation, Nijmegen

47. Jim Allen (1997), "Sector Composition and the Effect of Education on Wages: an International Comparison." Amsterdam: Thesis Publishers

48. Jack Hutten (1998), "Workload and Provision of Care in General Practice. An Empirical Study of the Relation Between Workload of Dutch General Practitioners and the Content and Quality of their Care." ICS-dissertation, Utrecht

49. Per Kropp (1998), "Berufserfolg im Transformationsprozeß. Eine theoretisch empirische Studie über die Gewinner und Verlierer der Wende in Ostdeutschland." ICS-dissertation, Utrecht

50. Maarten Wolbers (1998), "Diploma-inflatie en verdringing op de arbeidsmarkt. Een studie naar ontwikkelingen in de opbrengsten van diploma's in Nederland." ICS-dissertation, Nijmegen

51. Wilma Smeenk (1998), "Opportunity and Marriage. The Impact of Individual Resources and Marriage Market Structure on First Marriage Timing and Partner Choice in the Netherlands." ICS-dissertation, Nijmegen

52. Marinus Spreen (1999), "Sampling Personal Network Structures: Statistical Inference in Ego-Graphs." ICS-dissertation, Groningen

53. Vincent Buskens (1999), "Social Networks and Trust." ICS-dissertation, Utrecht

54. Susanne Rijken (1999), "Educational Expansion and Status Attainment. A Cross-National and Over-Time Comparison." ICS-dissertation, Utrecht

55. Mérove Gijsberts (1999), "The Legitimation of Inequality in State-Socialist and Market Societies, 1987-1996." ICS-dissertation, Utrecht

56. Gerhard van de Bunt (1999), "Friends by Choice. An Actor-Oriented Statistical Network Model for Friendship Networks Through Time." ICS-dissertation, Groningen

57. Robert Thomson (1999), "The Party Mandate: Election Pledges and Government Actions in the Netherlands, 1986 1998." Amsterdam: Thela Thesis

58. Corine Baarda (1999), "Politieke besluiten en boeren beslissingen. Het draagvlak van het mestbeleid tot 2000." ICS-dissertation, Groningen

59. Rafael Wittek (1999), "Interdependence and Informal Control in Organizations." ICS-dissertation, Groningen

60. Diane Payne (1999), "Policy Making in the European Union: an Analysis of the Impact of the Reform of the Structural Funds in Ireland." ICS-dissertation, Groningen

61. René Veenstra (1999), "Leerlingen Klassen Scholen. Prestaties en vorderingen van leerlingen in het voortgezet onderwijs." Amsterdam, Thela Thesis

62. Marjolein Achterkamp (1999), "Influence Strategies in Collective Decision Making. A Comparison of Two Models." ICS-dissertation, Groningen

63. Peter Mühlau (2000), "The Governance of the Employment Relation. A Relational Signaling Perspective." ICS-dissertation, Groningen

64. Agnes Akkerman (2000), "Verdeelde vakbeweging en stakingen. Concurrentie om leden." ICS-dissertation, Groningen

65. Sandra van Thiel (2000), "Quangocratization: Trends, Causes and Consequences." ICS-dissertation, Utrecht

66. Sylvia Peacock-Korupp (2000), "Mothers and the Process of Social Stratification." ICS-dissertation, Utrecht

67. Rudi Turksema (2000), "Supply of Day Care." ICS-dissertation, Utrecht

68. Bernard Nijstad (2000), "How the Group Affects the Mind: Effects of Communication in Idea Generating Groups." ICS-dissertation, Utrecht

69. Inge de Wolf (2000), "Opleidingsspecialisatie en arbeidsmarktsucces van sociale wetenschappers." ICS-dissertation, Utrecht

70. Jan Kratzer (2001), "Communication and Performance: An Empirical Study in Innovation Teams." ICS-dissertation, Groningen

71. Madelon Kroneman (2001), "Healthcare Systems and Hospital Bed Use." ICS/NIVEL-dissertation, Utrecht

72. Herman van de Werfhorst (2001), "Field of Study and Social Inequality. Four Types of Educational Resources in the Process of Stratification in the Netherlands." ICS-dissertation, Nijmegen

73. Tamás Bartus (2001), "Social Capital and Earnings Inequalities. The Role of Informal Job Search in Hungary." ICS-dissertation Groningen

74. Hester Moerbeek (2001), "Friends and Foes in the Occupational Career. The Influence of Sweet and Sour Social Capital on the Labour Market." ICS-dissertation, Nijmegen

75. Marcel van Assen (2001), "Essays on Actor Perspectives in Exchange Networks and Social Dilemmas." ICS-dissertation, Groningen

76. Inge Sieben (2001), "Sibling Similarities and Social Stratification. The Impact of Family Background across Countries and Cohorts." ICS-dissertation, Nijmegen

77. Alinda van Bruggen (2001), "Individual Production of Social Well Being. An Exploratory Study." ICS-dissertation, Groningen

78. Marcel Coenders (2001), "Nationalistic Attitudes and Ethnic Exclusionism in a Comparative Perspective: An Empirical Study of Attitudes Toward the Country and Ethnic Immigrants in 22 Countries." ICS-dissertation, Nijmegen

79. Marcel Lubbers (2001), "Exclusionistic Electorates. Extreme Right Wing Voting in Western Europe." ICS-dissertation, Nijmegen

80. Uwe Matzat (2001), "Social Networks and Cooperation in Electronic Communities. A theoretical-empirical Analysis of Academic Communication and Internet Discussion Groups." ICS-dissertation, Groningen

81. Jacques Janssen (2002), "Do Opposites Attract Divorce? Dimensions of Mixed Marriage and the Risk of Divorce in the Netherlands." ICS-dissertation, Nijmegen

82. Miranda Jansen (2002), "Waardenoriëntaties en partnerrelaties. Een panelstudie naar wederzijdse invloeden." ICS-dissertation, Utrecht

83. Anne-Rigt Poortman (2002), "Socioeconomic Causes and Consequences of Divorce." ICS-dissertation, Utrecht

84. Alexander Gattig (2002), "Intertemporal Decision Making." ICS-dissertation, Groningen

85. Gerrit Rooks (2000), "Contract en Conflict: Strategisch Management van Inkooptransacties." ICS-dissertation, Utrecht

86. Károly Takács (2002), "Social Networks and Intergroup Conflict." ICS-dissertation, Groningen

87. Thomas Gautschi (2002), "Trust and Exchange, Effects of Temporal Embeddedness and Network Embeddedness on Providing and Dividing a Surplus." ICS-dissertation, Utrecht

88. Hilde Bras (2002), "Zeeuwse meiden. Dienen in de levensloop van vrouwen, ca. 1850 – 1950." Aksant Academic Publishers, Amsterdam

89. Merijn Rengers (2002), "Economic Lives of Artists. Studies into Careers and the Labour Market in the Cultural Sector." ICS-dissertation, Utrecht

90. Annelies Kassenberg (2002), "Wat scholieren bindt. Sociale gemeenschap in scholen." ICS-dissertation, Groningen

91. Marc Verboord (2003), "Moet de meester dalen of de leerling klimmen? De invloed van literatuuronderwijs en ouders op het lezen van boeken tussen 1975 en 2000." ICS-dissertation, Utrecht

92. Marcel van Egmond (2003), "Rain Falls on All of Us (but Some Manage to Get More Wet than Others): Political Context and Electoral Participation." ICS-dissertation, Nijmegen

93. Justine Horgan (2003), "High Performance Human Resource Management in Ireland and the Netherlands: Adoption and Effectiveness." ICS-dissertation, Groningen

94. Corine Hoeben (2003), "LETS' Be a Community. Community in Local Exchange Trading Systems." ICS-dissertation, Groningen

95. Christian Steglich (2003), "The Framing of Decision Situations. Automatic Goal Selection and Rational Goal Pursuit." ICS-dissertation, Groningen

96. Johan van Wilsem (2003), "Crime and Context. The Impact of Individual, Neighborhood, City and Country Characteristics on Victimization." ICS-dissertation, Nijmegen

97. Christiaan Monden (2003), "Education, Inequality and Health. The Impact of Partners and Life Course." ICS-dissertation, Nijmegen

98. Evelyn Hello (2003), "Educational Attainment and Ethnic Attitudes. How to Explain their Relationship." ICS-dissertation, Nijmegen

99. Marnix Croes en Peter Tammes (2004). Gif laten wij niet voortbestaan. Een onderzoek naar de overlevingskansen van joden in de Nederlandse gemeenten, 1940-1945. Aksant Academic Publishers, Amsterdam.

100. Ineke Nagel (2004), "Cultuurdeelname in de levensloop." ICS-dissertation, Utrecht

101. Marieke van der Wal (2004), "Competencies to Participate in Life. Measurement and the Impact of School." ICS-dissertation, Groningen

102. Vivian Meertens (2004), "Depressive Symptoms in the General Population: a Multifactorial Social Approach." ICS-dissertation, Nijmegen

103. Hanneke Schuurmans (2004), "Promoting Well-Being in Frail Elderly People. Theory and Intervention." ICS-dissertation, Groningen

104. Javier Arregui Moreno (2004), "Negotiation in Legislative Decision-Making in the European Union." ICS-dissertation, Groningen

105. Tamar Fischer (2004), "Parental Divorce, Conflict and Resources. The Effects on Children's Behaviour Problems, Socioeconomic Attainment, and Transitions in the Demographic Career." ICS-dissertation, Nijmegen

106. René Bekkers (2004), "Giving and Volunteering in the Netherlands: Sociological and Psychological Perspectives." ICS-dissertation, Utrecht

107. Renée van der Hulst (2004), "Gender Differences in Workplace Authority: An Empirical Study on Social Networks." ICS-dissertation, Groningen

108. Rita Smaniotto (2004), "'You Scratch My Back and I Scratch Yours' Versus 'Love Thy Neighbour'. Two Proximate Mechanisms of Reciprocal Altruism." ICS-dissertation, Groningen

109. Maurice Gesthuizen (2004), "The Life-Course of the Low-Educated in the Netherlands: Social and Economic Risks." ICS-dissertation, Nijmegen

110. Carlijne Philips (2005), "Vakantiegemeenschappen. Kwalitatief en Kwantitatief Onderzoek naar Gelegenheid en Refreshergemeenschap tijdens de Vakantie." ICS-dissertation, Groningen

111. Esther de Ruijter (2005), "Household Outsourcing." ICS-dissertation, Utrecht

112. Frank van Tubergen (2005), "The Integration of Immigrants in Cross-National Perspective: Origin, Destination, and Community Effects." ICS-dissertation, Utrecht

113. Ferry Koster (2005), "For the Time Being. Accounting for Inconclusive Findings Concerning the Effects of Temporary Employment Relationships on Solidary Behavior of Employees." ICS-dissertation, Groningen

114. Carolien Klein Haarhuis (2005), "Promoting Anti-Corruption Reforms. Evaluating the Implementation of a World Bank Anti-Corruption Program in Seven African Countries (1999-2001)." ICS-dissertation, Utrecht

115. Martin van der Gaag (2005), "Measurement of Individual Social Capital." ICS-dissertation, Groningen

116. Johan Hansen (2005), "Shaping Careers of Men and Women in Organizational Contexts." ICS-dissertation, Utrecht

117. Davide Barrera (2005), "Trust in Embedded Settings." ICS-dissertation, Utrecht

118. Mattijs Lambooij (2005), "Promoting Cooperation. Studies into the Effects of Long-Term and Short-Term Rewards on Cooperation of Employees." ICS-dissertation, Utrecht

119. Lotte Vermeij (2006), "What's Cooking? Cultural Boundaries among Dutch Teenagers of Different Ethnic Origins in the Context of School." ICS-dissertation, Utrecht

120. Mathilde Strating (2006), "Facing the Challenge of Rheumatoid Arthritis. A 13-year Prospective Study among Patients and Cross-Sectional Study among Their Partners." ICS-dissertation, Groningen

121. Jannes de Vries (2006), "Measurement Error in Family Background Variables: The Bias in the Intergenerational Transmission of Status, Cultural Consumption, Party Preference, and Religiosity." ICS-dissertation, Nijmegen

122. Stefan Thau (2006), "Workplace Deviance: Four Studies on Employee Motives and Self-Regulation." ICS-dissertation, Groningen

123. Mirjam Plantinga (2006), "Employee Motivation and Employee Performance in Child Care. The effects of the Introduction of Market Forces on Employees in the Dutch Child-Care Sector." ICS-dissertation, Groningen

124. Helga de Valk (2006), "Pathways into Adulthood. A Comparative Study on Family Life Transitions among Migrant and Dutch Youth." ICS-dissertation, Utrecht

125. Henrike Elzen (2006), "Self-Management for Chronically Ill Older People." ICS-Dissertation, Groningen

126. Ayse Güveli (2007), "New Social Classes within the Service Class in the Netherlands and Britain. Adjusting the EGP Class Schema for the Technocrats and the Social and Cultural Specialists." ICS-dissertation, Nijmegen

127. Willem-Jan Verhoeven (2007), "Income Attainment in Post-Communist Societies." ICS-dissertation, Utrecht

128. Marieke Voorpostel (2007), "Sibling support: The Exchange of Help among Brothers and Sisters in the Netherlands." ICS-dissertation, Utrecht

129. Jacob Dijkstra (2007), "The Effects of Externalities on Partner Choice and Payoffs in Exchange Networks." ICS-dissertation, Groningen

130. Patricia van Echtelt (2007), "Time-Greedy Employment Relationships: Four Studies on the Time Claims of Post-Fordist Work." ICS-dissertation, Groningen

131. Sonja Vogt (2007), "Heterogeneity in Social Dilemmas: The Case of Social Support." ICS-dissertation, Utrecht

132. Michael Schweinberger (2007), "Statistical Methods for Studying the Evolution of Networks and Behavior." ICS-dissertation, Groningen

133. István Henrik Back (2007), "Commitment and Evolution: Connecting Emotion and Reason in Long-term Relationships." ICS-dissertation, Groningen

134. Ruben van Gaalen (2007), "Solidarity and Ambivalence in Parent-Child Relationships." ICS-dissertation, Utrecht

135. Jan Reitsma (2007), "Religiosity and Solidarity – Dimensions and Relationships Disentangled and Tested." ICS-dissertation, Nijmegen

136. Jan Kornelis Dijkstra (2007), "Status and Affection among (Pre)Adolescents and Their Relation with Antisocial and Prosocial Behavior." ICS-dissertation, Groningen

137. Wouter van Gils (2007), "Full-time Working Couples in the Netherlands. Causes and Consequences." ICS-dissertation, Nijmegen

138. Djamila Schans (2007), "Ethnic Diversity in Intergenerational Solidarity." ICS-dissertation, Utrecht

139. Ruud van der Meulen (2007), "Brug over Woelig Water: Lidmaatschap van Sportverenigingen, Vriendschappen, Kennissenkringen en Veralgemeend Vertrouwen." ICS-dissertation, Nijmegen

140. Andrea Knecht (2008), "Friendship Selection and Friends' Influence. Dynamics of Networks and Actor Attributes in Early Adolescence." ICS-dissertation, Utrecht

141. Ingrid Doorten (2008), "The Division of Unpaid Work in the Household: A Stubborn Pattern?" ICS-dissertation, Utrecht

142. Stijn Ruiter (2008), "Association in Context and Association as Context: Causes and Consequences of Voluntary Association Involvement." ICS-dissertation, Nijmegen

143. Janneke Joly (2008), "People on Our Minds: When Humanized Contexts Activate Social Norms." ICS-dissertation, Groningen

144. Margreet Frieling (2008), "'Joint production' als motor voor actief burgerschap in de buurt." ICS-dissertation, Groningen

145. Ellen Verbakel (2008), "The Partner as Resource or Restriction? Labour Market Careers of Husbands and Wives and the Consequences for Inequality Between Couples." ICS-dissertation, Nijmegen

146. Gijs van Houten (2008), "Beleidsuitvoering in gelaagde stelsels. De doorwerking van aanbevelingen van de Stichting van de Arbeid in het CAO-overleg." ICS-dissertation, Utrecht

147. Eva Jaspers (2008), "Intolerance over Time. Macro and Micro Level Questions on Attitudes Towards Euthanasia, Homosexuality and Ethnic Minorities." ICS-dissertation, Nijmegen

148. Gijs Weijters (2008), "Youth Delinquency in Dutch Cities and Schools: A Multilevel Approach." ICS-dissertation, Nijmegen

149. Jessica Nooij (2009), "The Self in Social Rejection." ICS-dissertation, Groningen

150. Gerald Mollenhorst (2009), "Networks in Contexts. How Meeting Opportunities Affect Personal Relationships." ICS-dissertation, Utrecht

151. Tom van der Meer (2009), "States of Freely Associating Citizens: Comparative Studies into the Impact of State Institutions on Social, Civic and Political Participation." ICS-dissertation, Nijmegen

152. Manuela Vieth (2009), "Commitments and Reciprocity in Trust Situations. Experimental Studies on Obligation, Indignation, and Self-Consistency." ICS-dissertation, Utrecht

153. Rense Corten (2009), "Co-evolution of Social Networks and Behavior in Social Dilemmas: Theoretical and Empirical Perspectives." ICS-dissertation, Utrecht

154. Arieke Rijken (2009), "Happy Families, High Fertility? Childbearing Choices in the Context of Family and Partner Relationships." ICS-dissertation, Utrecht

155. Jochem Tolsma (2009), "Ethnic Hostility among Ethnic Majority and Minority Groups in the Netherlands. An Investigation into the Impact of Social Mobility Experiences, the Local Living Environment and Educational Attainment on Ethnic Hostility." ICS-dissertation, Nijmegen

156. Freek Bucx (2009), "Linked Lives: Young Adults' Life Course and Relations With Parents." ICS-dissertation, Utrecht

157. Philip Wotschack (2009), "Household Governance and Time Allocation. Four studies on the combination of work and care." ICS-dissertation, Groningen

158. Nienke Moor (2009), "Explaining Worldwide Religious Diversity. The Relationship between Subsistence Technologies and Ideas about the Unknown in Pre-industrial and (Post-)industrial Societies." ICS-dissertation, Nijmegen

159. Lieke ten Brummelhuis (2009), "Family Matters at Work. Depleting and Enriching Effects of Employees' Family lives on Work Outcomes." ICS-dissertation, Utrecht

160. Renske Keizer (2010), "Remaining Childless. Causes and Consequences from a Life Course Perspective." ICS-dissertation, Utrecht

161. Miranda Sentse (2010), "Bridging Contexts: The interplay between Family, Child, and Peers in Explaining Problem Behavior in Early Adolescence." ICS-dissertation, Groningen

162. Nicole Tieben (2010), "Transitions, Tracks and Transformations. Social Inequality in Transitions into, through and out of Secondary Education in the Netherlands for Cohorts Born Between 1914 and 1985." ICS-dissertation, Nijmegen

163. Birgit Pauksztat (2010), "Speaking up in Organizations: Four Studies on Employee Voice." ICS-dissertation, Groningen

164. Richard Zijdeman (2010), "Status Attainment in the Netherlands, 1811-1941. Spatial and Temporal Variation Before and During Industrialization." ICS-dissertation, Utrecht

165. Rianne Kloosterman (2010), "Social Background and Children's Educational Careers. The Primary and Secondary Effects of Social Background over Transitions and over Time in the Netherlands." ICS-dissertation, Nijmegen

166. Olav Aarts (2010), "Religious Diversity and Religious Involvement. A Study of Religious Markets in Western Societies at the End of the Twentieth Century." ICS-dissertation, Nijmegen

167. Stephanie Wiesmann (2010), "24/7 Negotiation in Couples Transition to Parenthood." ICS-dissertation, Utrecht

168. Borja Martinovic (2010), "Interethnic Contacts: A Dynamic Analysis of Interac-

tion Between Immigrants and Natives in Western Countries." ICS-dissertation, Utrecht

169. Anne Roeters (2010), "Family Life Under Pressure? Parents' Paid Work and the Quantity and Quality of Parent-Child and Family Time." ICS-dissertation, Utrecht

170. Jelle Sijtsema (2010), "Adolescent Aggressive Behavior: Status and Stimulation Goals in Relation to the Peer Context." ICS-dissertation, Groningen

171. Kees Keizer (2010), "The Spreading of Disorder." ICS-dissertation, Groningen

172. Michael Mäs (2010), "The Diversity Puzzle. Explaining Clustering and Polarization of Opinions." ICS-dissertation, Groningen

173. Marie-Louise Damen (2010), "Cultuurdeelname en CKV. Studies naar effecten van kunsteducatie op de cultuurdeelname van leerlingen tijdens en na het voortgezet onderwijs." ICS-dissertation, Utrecht

174. Marieke van de Rakt (2011), "Two generations of Crime: The Intergenerational Transmission of Convictions over the Life Course." ICS-dissertation, Nijmegen

175. Willem Huijnk (2011), "Family Life and Ethnic Attitudes. The Role of the Family for Attitudes Towards Intermarriage and Acculturation Among Minority and Majority Groups." ICS-dissertation, Utrecht

176. Tim Huijts (2011), "Social Ties and Health in Europe. Individual Associations, Cross-National Variations, and Contextual Explanations." ICS-dissertation, Nijmegen

177. Wouter Steenbeek (2011), "Social and Physical Disorder. How Community, Business Presence and Entrepreneurs Influence Disorder in Dutch Neighborhoods." ICS-dissertation, Utrecht

178. Miranda Vervoort (2011), "Living Together Apart? Ethnic Concentration in the Neighborhood and Ethnic Minorities' Social Contacts and Language Practices." ICS-dissertation, Utrecht

179. Agnieszka Kanas (2011), "The Economic Performance of Immigrants. The Role of Human and Social Capital." ICS-dissertation, Utrecht

180. Lea Ellwardt (2011), "Gossip in Organizations. A Social Network Study." ICS-dissertation, Groningen

181. Annemarije Oosterwaal (2011), "The Gap between Decision and Implementation. Decision making, Delegation and Compliance in Governmental and Organizational Settings." ICS-dissertation, Utrecht

182. Natascha Notten (2011), "Parents and the Media. Causes and Consequences of Parental Media Socialization." ICS-dissertation, Nijmegen

183. Tobias Stark (2011), "Integration in Schools. A Process Perspective on Students' Interethnic Attitudes and Interpersonal Relationships." ICS-dissertation, Groningen

184. Giedo Jansen (2011), "Social Cleavages and Political Choices. Large-scale Comparisons of Social Class, Religion and Voting Behavior in Western Democracies." ICS-dissertation, Nijmegen

185. Ruud van der Horst (2011), "Network Effects on Treatment Results in a Closed Forensic Psychiatric Setting." ICS-dissertation, Groningen

186. Mark Levels (2011), "Abortion Laws in European Countries between 1960 and 2010. Legislative Developments and Their Consequences for Women's Reproductive Decision-making." ICS-dissertation, Nijmegen

187. Marieke van Londen (2012), "Exclusion of ethnic minorities in the Netherlands. The effects of individual and situational characteristics on opposition to ethnic policy and ethnically mixed neighbourhoods." ICS-dissertation, Nijmegen

188. Sigrid Mohnen (2012), "Neighborhood context and health: How neighborhood social capital affects individual health." ICS-dissertation, Utrecht

189. Asya Zhelyazkova (2012), "Compliance under Controversy: Analysis of the Transposition of European Directives and their Provisions." ICS-dissertation, Utrecht

190. Valeska Korff (2012), "Between Cause and Control: Management in a Humanitarian Organization." ICS-dissertation, Groningen

191. Maike Gieling (2012), "Dealing with Diversity: adolescents' support for civil liberties and immigrant rights." ICS-dissertation, Utrecht

192. Katya Ivanova (2012), "From Parents to Partners: The Impact of Family on Romantic Relationships in Adolescence and Emerging Adulthood." ICS-dissertation, Groningen

193. Jelmer Schalk (2012), "The Performance of Public Corporate Actors: Essays on Effects of Institutional and Network Embeddedness in Supranational, National, and Local Collaborative Contexts." ICS-dissertation, Utrecht

194. Alona Labun (2012), "Social Networks and Informal Power in Organizations." ICS-dissertation, Groningen

195. Michal Bojanowski (2012), "Essays on Social Network Formation in Heterogeneous Populations: Models, Methods, and Empirical Analyses." ICS-dissertation, Utrecht

196. Anca Minescu (2012), "Relative Group Position and Intergroup Attitudes in Russia." ICS-dissertation, Utrecht

197. Marieke van Schellen (2012), "Marriage and crime over the life course. The criminal careers of convicts and their spouses." ICS-dissertation, Utrecht

198. Mieke Maliepaard (2012), "Religious Trends and Social Integration: Muslim Minorities in the Netherlands." ICS-dissertation, Utrecht

199. Fransje Smits (2012), "Turks and Moroccans in the Low Countries around the year 2000: determinants of religiosity, trend in religiosity and determinants of the trend." ICS-dissertation, Nijmegen

200. Roderick Sluiter (2012), "The Diffusion of Morality Policies among Western European Countries between 1960 and 2010. A Comparison of Temporal and Spatial Diffusion Patterns of Six Morality and Eleven Non-morality Policies." ICS-dissertation, Nijmegen

201. Nicoletta Balbo (2012), "Family, Friends and Fertility." ICS-dissertation, Groningen

202. Anke Munniksma (2013), "Crossing ethnic boundaries: Parental resistance to and consequences of adolescents' cross-ethnic peer relations" ICS-dissertation, Groningen

203. Anja-Kristin Abendroth (2013), "Working Women in Europe. How the Country, Workplace, and Family Context Matter." ICS-dissertation, Utrecht

204. Katia Begall (2013), "Occupational Hazard? The Relationship between Working Conditions and Fertility." ICS-dissertation, Groningen

205. Hidde Bekhuis (2013), "The Popularity of Domestic Cultural Products: Cross-national Differences and the Relation to Globalization." ICS-dissertation, Utrecht

206. Lieselotte Blommaert (2013), "Are Joris and Renske more employable than Rashid and Samira? A study on the prevalence and sources of ethnic discrimination in recruitment in the Netherlands using experimental and survey data." ICS-dissertation, Utrecht

207. Wiebke Schulz (2013), "Careers of Men and Women in the 19th and 20th Centuries." ICS-dissertation, Utrecht

208. Ozan Aksoy (2013), "Essays on Social Preferences and Beliefs in Non-embedded Social Dilemmas." ICS-dissertation, Utrecht

209. Dominik Morbitzer (2013), "Limited Farsightedness in Network Formation." ICS-dissertation, Utrecht

210. Thomas de Vroome (2013), "Earning Your Place: The Relation Between Immigrants' Economic and Psychological Integration in the Netherlands." ICS-dissertation, Utrecht

211. Marloes de Lange (2013), "Causes and Consequences of Employment Flexibility Among Young People. Recent Developments in the Netherlands and Europe." ICS-dissertation, Nijmegen

212. Roza Meuleman (2014), "Consuming the Nation. Domestic cultural consumption: its stratification and relation with nationalist attitudes." ICS-dissertation, Utrecht

213. Esther Havekes (2014), "Putting interethnic attitudes in context. The relationship between neighbourhood characteristics, interethnic attitudes and residential behaviour." ICS-dissertation, Utrecht

214. Zoltán Lippényi (2014), "Transitions toward an open society? Intergenerational occupational mobility in Hungary in the 19th and 20th centuries." ICS-dissertation, Utrecht

215. Anouk Smeekes (2014), "The presence of the past: Historical rooting of national identity and current group dynamics." ICS-dissertation, Utrecht

216. Michael Savelkoul (2014), "Ethnic Diversity and Social capital. Testing Underlying Explanations Derived from Conflict and Contact Theories in Europe and the United States." ICS-dissertation, Nijmegen

217. Martijn Hogerbrugge (2014), "Misfortune and family: How negative events, family ties, and lives are linked." ICS-dissertation, Utrecht

218. Gina-Felicia Potarca (2014), "Modern Love. Comparative Insights in Online Dating Preferences and Assortative Mating." ICS dissertation, Groningen

219. Mariska van der Horst (2014), "Gender, Aspirations, and Achievements: Relating work and family aspirations to occupational outcomes." ICS-dissertation, Utrecht

220. Gijs Huitsing (2014), "A Social network perspective on bullying" ICS dissertation, Groningen

221. Thomas Kowalewski (2015), "Personal growth in organizational contexts." ICS-dissertation, Groningen

222. Manuel Muñoz-Herrera (2015), "The impact of individual differences on network relations: Social exclusion and inequality in productive exchange and coordination games." ICS-dissertation, Groningen

223. Tim Immerzeel (2015), "Voting for a change. The democratic lure of populist radical right parties in voting behavior." ICS-dissertation, Utrecht

224. Fernando Nieto Morales (2015), "The control imperative: Studies on reorganization in the public and private sectors." ICS-dissertation, Groningen

225. Jellie Sierksma (2015), "Bounded helping: How morality and intergroup relations shape children's reasoning about helping." ICS-dissertation, Utrecht

226. Tinka Veldhuis (2015), "Captivated by fear. An evaluation of terrorism detention policy." ICS-dissertation, Groningen

227. Miranda Visser (2015), "Loyality in humanity.Turnover among expatriate humanitarian aid workers." ICS-dissertation, Groningen

228. Sarah Westphal (2015), "Are the kids alright? Essays on postdivorce residence arrangements and children's well-being." ICS-dissertation, Utrecht

229. Britta Rüschoff (2015), "Peers in careers: Peer relationships in the transition from school to work." ICS dissertation, Groningen

230. Nynke van Miltenburg (2015), "Cooperation under peer sanctioning institutions: Collective decisions, noise, and endogenous implementation." ICS-dissertation, Utrecht

231. Antonie Knigge (2015), "Sources of sibling similarity. Status attainment in the Netherlands during modernization." ICS-dissertation, Utrecht

232. Sanne Smith (2015), "Ethnic segregation in friendship networks. Studies of its determinants in English, German, Dutch, and Swedish school classes." ICS-dissertation, Utrecht

233. Patrick Präg (2015), "Social stratification and health. Four essays on social determinants of health and wellbeing." ICS dissertation, Groningen

234. Wike Been (2015), "European top managers' support for work-life arrangements" ICS-dissertation, Utrecht

235. André Grow (2016), "Status differentiation: New insights from agent-based modeling and social network analysis" ICS-dissertation, Groningen

236. Jesper Rözer (2016), "Family and personal networks. How a partner and children affect social relationships" ICS-dissertation, Utrecht

237. Kim Pattiselanno (2016), "At your own risk: The importance of group dynamics and peer processes in adolescent peer groups for adolescents' involvement in risk behaviors" ICS- dissertation, Groningen

238. Vincenz Frey (2016), "Network formation and trust" ICS-dissertation, Utrecht

239. Rozemarijn van der Ploeg (2016), "Be a buddy, not a bully? Four studies on social and emotional processes related to bullying, defending, and victimization" ICS-dissertation, Groningen

240. Tali Spiegel (2016), "Identity, career trajectories and wellbeing: A closer look at individuals with degenerative eye conditions" ICS- dissertation, Groningen

241. Felix Christian Tropf (2016), "Social Science Genetics and Fertility" ICS-dissertation, Groningen

242. Sara Geven (2016), "Adolescent problem behavior in school: the role of peer networks" ICS-dissertation, Utrecht

243. Josja Rokven (2016), "The victimization-offending relationship from a longitudinal perspective" ICS-dissertation, Nijmegen

244. Maja Djundeva (2016), "Healthy ageing in context: Family welfare state and the life course" ICS-dissertation, Groningen

245. Mark Visser (2017), "Inequality between older workers and older couples in the Netherlands. A dynamic life course perspective on educational and social class differences in the late career" ICS-dissertation, Nijmegen

246. Beau Oldenburg (2017), "Bullying in schools: The role of teachers and classmates" ICS-dissertation, Groningen

247. Tatang Muttaqin (2017), "The education divide in Indonesia: Four essays on determinants of unequal access to and quality of education" ICS-dissertation, Groningen

248. Margriet van Hek (2017), "Gender inequality in educational attainment and reading performance. A contextual approach." ICS-dissertation, Nijmegen

249. Melissa Verhoef-van Dorp (2017), "Work schedules, childcare and well-being. Essays on the associations between modern-day job characteristics, childcare arrangements and the well-being of parents and children" ICS-dissertation, Utrecht

250. Timo Septer (2017), "Goal priorities, cognition and conflict: Analyses of cognitive maps concerning organizational change" ICS-dissertation, Groningen

251. Bas Hofstra (2017), "Online Social Networks: Essays on Membership, Privacy, and Structure" ICS-dissertation, Utrecht

252. Yassine Khoudja (2018), "Women's labor market participation across ethnic groups: The role of household conditions, gender role attitudes, and religiosity in different national contexts" ICS-dissertation, Utrecht

253. Joran Laméris (2018), "Living together in diversity. Whether, why and where ethnic diversity affects social cohesion" ICS-dissertation, Nijmegen

254. Maaike van der Vleuten (2018), "Gendered Choices. Fields of study of adolescents in the Netherlands" ICS-dissertation, Utrecht

255. Mala Sondang Silitonga (2018), "Corruption in Indonesia: The impact of institutional change, norms, and networks" ICS-dissertation, Groningen

256. Manja Coopmans (2018), "Rituals of the past in the context of the present. The role of Remembrance Day and Liberation Day in Dutch society" ICS-dissertation, Utrecht

257. Paul Hindriks (2018), "The Struggle for Power: Attitudes towards the political participation of ethnic minorities" ICS-dissertation, Utrecht

258. Nynke Niezink (2018), "Modeling the dynamics of networks and continuous behavior" ICS-dissertation, Groningen

259. Simon de Bruijn (2018), "Reaching agreement after divorce and separation. Essays on the effectiveness of parenting plans and divorce mediation" ICS-dissertation, Utrecht

260. Susanne van 't Hoff-de Goede (2018), "While you were locked up. An empirical study on the characteristics, social surroundings and wellbeing of partners of prisoners in The Netherlands" ICS-dissertation, Utrecht

261. Loes van Rijsewijk (2018), "Antecedents and Consequences of Helping among Adolescents" ICS-dissertation, Groningen

262. Mariola Gremmen (2018), "Social network processes and academic functioning. The role of peers in students' school well-being, academic engagement, and academic achievement" ICS-dissertation, Groningen

263. Jeanette Renema (2018), "Immigrants' support for welfare spending. The causes and consequences of welfare usage and welfare knowledgeability" ICS-dissertation, Nijmegen

264. Suwatin Miharti (2018), "Community health centers in Indonesia in the era of decentralization. The impact of structure, staff composition and management on health outcomes" ICS-dissertation, Groningen

265. Chaïm la Roi (2019), "Stigma and stress: Studies on attitudes towards sexual minority orientations and the association between sexual orientation and mental health" ICS-dissertation, Groningen

266. Jelle Lössbroek (2019), "Turning grey into gold. Employer-employee interplay in an ageing workforce" ICS-dissertation, Utrecht

267. Nikki van Gerwen (2019), "Employee cooperation through training. A multimethod approach" ICS-dissertation, Utrecht

268. Paula Thijs (2019), "Trends in cultural conservatism: The role of educational expansion, secularisation, and changing national contexts" ICS-dissertation, Nijmegen

269. Renske Verweij (2019), "Understanding childlessness: Unravelling the link with

genes and the socio-environment" ICS-dissertation, Groningen

270. Niels Blom (2019), "Partner relationship quality under pressing work conditions. Longitudinal and cross-national investigation" ICS-dissertation, Nijmegen

271. Müge Simsek (2019), "The dynamics of religion among native and immigrant youth in Western Europe" ICS-dissertation, Utrecht

272. Leonie van Breeschoten (2019), "Combining a career and childcare: The use and usefulness of work-family policies in European organizations" ICS-dissertation, Utrecht

273. Roos van der Zwan (2019), "The political representation of ethnic minorities and their vote choice" ICS-dissertation, Nijmegen

274. Ashwin Rambaran (2019), "The classroom as context for bullying: A social network approach" ICS-dissertation, Groningen

275. Dieko Bakker (2019), "Cooperation and social control: Effects of preferences, institutions, and social structure" ICS-dissertation, Groningen

276. Femke van der Werf (2019), "Shadow of a rainbow? National and ethnic belonging in Mauritius" ICS-dissertation, Utrecht

277. Robert Krause (2019), "Multiple Imputation for Missing Network Data" ICS-dissertation, Groningen

278. Take Sipma (2020), "Economic insecurity and populist radical right voting" ICS-dissertation, Nijmegen

279. Mathijs Kros (2020), "The nature of negative contact: studies on interethnic relations in western societies" ICS-dissertation, Utrecht

280. Lonneke van den Berg (2020), "Time to leave: Individual and contextual explanations for the timing of leaving home" ICS-dissertation, Amsterdam

281. Marianne Hooijsma (2020), "Clashrooms: Interethnic peer relationships in schools" ICS-dissertation, Groningen

282. Marina Tulin (2020), "Blind Spots in Social Resource Theory: Essays on the Creation, Maintenance and Returns of Social Capital" ICS-dissertation, Amsterdam

283. Tessa Kaufman (2020), "Toward Tailored Interventions: Explaining, Assessing, and Preventing Persistent Victimization of Bullying" ICS-dissertation, Groningen

284. Lex Thijssen (2020), "Racial and Ethnic Discrimination in Western Labor Markets: Empirical Evidence from Field Experiments" ICS-dissertation, Utrecht

285. Lukas Norbutas (2020), "Trust on the Dark Web: An analysis of illegal online drug markets" ICS-dissertation, Utrecht

286. Tomáš Diviák (2020), "Criminal Networks: Actors, Mechanisms, and Structures" ICS-dissertation, Groningen

287. Tery Setiawan (2020), "Support for Interreligious Conflict in Indonesia" ICS-dissertation, Nijmegen

288. Vera de Bel (2020), "The ripple effect in family networks. Relational structures and well-being in divorced and non-divorced families" ICS-dissertation, Groningen

289. Diego Palacios (2020), "How Context and the Perception of Peers' Behaviors Shape Relationships in Adolescence: A Multiplex Social Network Perspective" ICS-dissertation, Groningen

290. Saskia Glas (2020), "Where are the Muslim Feminists?: Religiosity and Support for Gender Equality in the Arab region" ICS-dissertation, Nijmegen

291. Tomas Turner-Zwinkels (2020), "A New Macro-Micro Approach to the Study of Political Careers: Theoretical, Methodological and Empirical Challenges and Solutions" ICS-dissertation, Groningen

292. Lotte Scheeren (2020), "Not on the Same Track? Tracking Age and Gender Inequality in Education" ICS-dissertation, Amsterdam

293. Joris Broere (2020), "Essays on how social network structure affects asymmetric coordination and trust" ICS-dissertation, Utrecht

294. Marcus Kristiansen (2021), "Contact with Benefits: How Social Networks affect Benefit Receipt Dynamics in the Netherlands" ICS-dissertation, Utrecht

295. Judith Kas (2021), "Trust and reputation in the peer-to-peer platform economy" ICS-dissertation, Utrecht

296. Andrea Forster (2021), "Navigating Educational Institutions: Mechanisms of Educational Inequality and Social Mobility in Different Educational Systems" ICS-dissertation, Amsterdam

297. Jannes ten Berge (2021), "Technological change and work: The relation between technology implementation within organizations and changes in workers' employment" ICS-dissertation, Utrecht

298. Jolien Geerlings (2021),"Teaching in culturally diverse classrooms: The importance of dyadic relations between teachers and children" ICS-dissertation, Utrecht

299. Kirsten van Houdt (2021), "Stepfamilies in adulthood: Solidarity between parents and adult children" ICS-dissertation, Amsterdam

300. Suzanne de Leeuw (2021), "The intergenerational transmission of educational attainment after divorce and remarriage" ICS-dissertation, Amsterdam

301. Fleur Goedkoop (2021), "Involvement in bottom-up energy transitions: The role of local and contextual embeddedness" ICS-dissertation, Groningen

302. Eva Vriens (2021), "Mutualism in the 21st century: The why, when, and how behind successful risk-sharing institutions" ICS-dissertation, Utrecht

303. Ardita Muja (2021), "From school to work: The role of the vocational specificity of education in young people's labor market integration" ICS-dissertation, Nijmegen

304. Siyang Kong (2021), "Women and work in contemporary China. The effect of market transition on women's employment, earnings, and status attainment" ICS-dissertation, Utrecht