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Social norms and female labor force participation in urban China☆

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ABSTRACT

This study investigates the impact of social norms on the labor supply decision of married women in urban China. Our estimation results indicate that men raised by non-working mothers are more likely to support traditional gender roles, are more averse to having working wives, and tend to be less productive or less willing to engage in housework than other men. Consequently, the labor force participation rate of married women with non-working mothers-in-law is 5–18 percentage points lower than that of married women with working mothers-in-law in urban China.

1. Introduction

The labor market attachment of women has declined dramatically in China in the last three decades as the country transitioned from a centrally planned economy to a market-oriented one. As shown in Fig. 1, the labor force participation rate for women aged between 16 and 55 was at a peak of more than 90% in the late 1980s. It declined slowly until around 1997 and then dropped dramatically to just above 80% in the mid 2000s. Overall female labor force participation rate declined by approximately 12 percentage points between 1988 and 2006.[1] This labor market trend in China reverses the pattern of increasing female labor force participation experienced in the US and other major developed economies in the past several decades.[2] Explanations for the rising female labor force participation in the US include the increase in women's real wage and education (Eckstein and Lifshitz, 2011), the technological advances in consumer durables (Greenwood et al., 2005), and the expansion of the service sector (Goldin, 1990; Lee and Wolpin, 2006).[3] Similar socioeconomic changes have also taken place in China in the past three decades, yet there has been a continuous decline in Chinese women's involvement in the formal labor market. The conventional hypothesis for changes in women's labor market situations in former socialist economies emphasizes the effects of economic transition and market reforms (Brainerd, 2000; Paukert, 1995) whereas recent studies explaining the decline of female labor supply in China have focused on factors such as

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[1] The trend on female labor force participation rate is based on China's Urban Household Surveys (UHS) data from Beijing, Liaoning, Zhejiang, Sichuan, Guangdong, and Shaanxi for the 1988–2006 period. Using a national sample of the UHS between 1988 and 2009, Feng et al. (2015) documented the same trend and showed that female labor force participation rate has declined in all demographic groups.

[2] Although the US has seen stalled female labor force participation since the 1990s, most other developed economies still see increases (Blau and Kahn, 2013).

[3] The literature on the labor supply of married women is voluminous and cannot be fully reviewed here. See Blundell and MaCurdy (1999) for an excellent survey of related literature.

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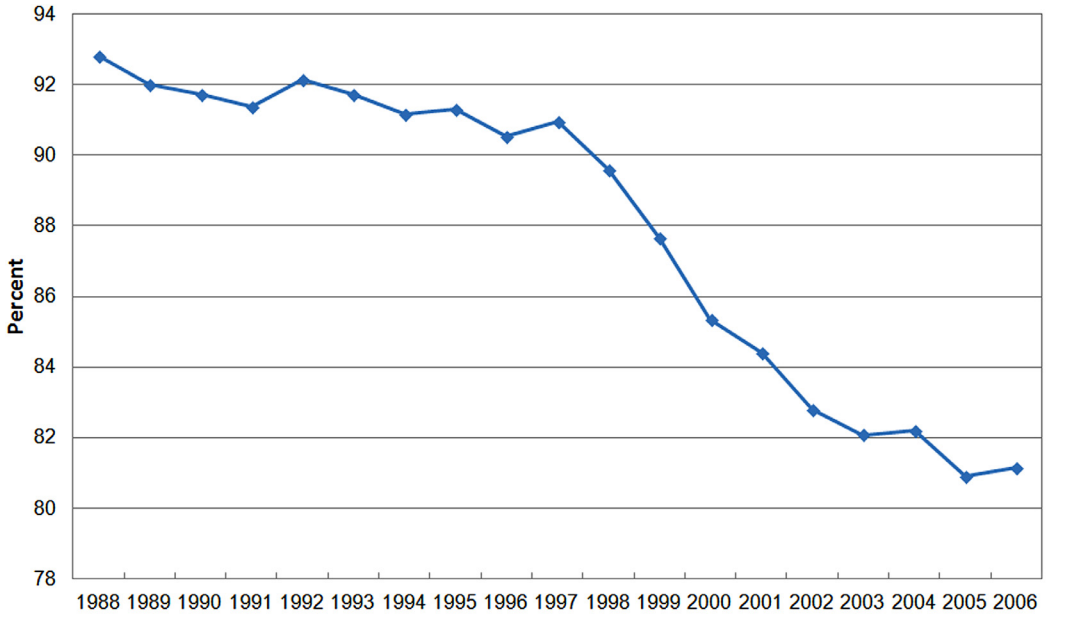

Source: Authors' calculations based on China's Urban Household Surveys (UHS) from Beijing, Liaoning, Zhejiang, Sichuan, Guangdong, and Shaanxi for the 1988-2006 period. The sample is restricted to women aged between 16 and 55. Labor force participation rate is defined as the ratio of employment plus unemployment to the total working-age population excluding those who are studying.

Fig. 1. Female labor force participation rates: 1988–2006.

the changing family structure (Maurer-Fazio et al., 2009; Shen et al., 2012), the changing child care system after the economic reform (Du and Dong, 2010), and the rising housing prices (Fu et al., 2016). The present study suggests a new and complementary hypothesis and seeks to understand the role of preference formation and social norms on female labor supply behavior in China. According to this hypothesis, the drastic decline of female labor force participation in the 1990s may have lingering effects on the labor supply behavior of young women in the current generation and may help us understand the continuing decline in female labor force participation in urban China.[4]

We follow the seminal work by Fernández et al. (2004) and argue that changes in social norms, particularly the gender role preferences and household productivity of men, can be a significant factor in the continuing decrease in female labor market participation in China. The social norms examined in this study are based on the observation that, over time, an increasing number of Chinese men during the last three decades, grew up in families with non-working mothers. Growing up with a non-working mother can make a man more averse to having a working wife as his idea of gender roles and division of labor in the household may differ from that of a man who grew up with a working mother. The growing presence of the type of man with a non-working mother will consequently make investing in market skills and becoming a working woman less attractive for women in the following generation. Alternatively, men may have similar preferences, but men brought up by non-working mothers may have lower household productivity, which arises perhaps from their lower willingness to engage in housework. As the number of working mothers decreases in China, the proportion of men raised by non-working mothers increases, a trend that may lead to a decrease in the number of working women in the next generation.

This study makes two important contributions to the existing literature. First, we are among the first to examine the impact of social norms on female labor supply in a fast-growing transition economy that has witnessed drastic socioeconomic changes since the 1980s. Fernández et al. (2004) show that in the US, the wives of men whose mothers worked are themselves significantly more likely to work; the authors argue that the growing number of men brought up in a family with a working mother is a significant factor in the increasing female labor force participation. Several studies, including those of Kawaguchi and Miyazaki (2009) and Bütikofer (2013), test similar hypotheses by employing data from other countries. Although Bütikofer (2013) finds significant results for the intergenerational link between a mother-in-law's working status and the female labor supply in Switzerland, the results are not statistically significant in Japan according to Kawaguchi and Miyazaki (2009). All previous research are limited to mature economies sharing similar institutional settings and experiencing similar patterns of increased presence of women in the labor market. The purpose of the present study is to investigate whether the former working status of a married man's mother affects his wife's labor supply behavior in China, a country with a very different economic and institutional environment from that of the aforementioned countries and experiencing a large decline in female labor force participation. This distinction is important because there is growing evidence that living under a specific political system or institution leads to the adaptation of certain attitudes, beliefs, and

[4] Feng et al. (2015) documented that female labor force participation rate continued to decline in the 2000s.

preferences.[5] We examine whether the formation of a particular set of attitudes and preferences toward the labor market participation of married women differs under the unique economic and institutional setting of China.

Second, our analysis moves beyond providing evidence that a mother-in-law's working status matters to female labor force participation and quantifying its impact. We likewise empirically explore two mechanisms through which a mother-in-law's former employment status and a married woman's employment status are linked. The first mechanism emphasizes that men brought up by non-working mothers tend to be more averse to having working wives compared with other men (preference channel). The second mechanism explores the possibility that men brought up by non-working mothers tend to be less productive or less willing to engage in housework (household productivity channel). Fernández et al. (2004) present a dynamic framework to show that both channels give rise to a similar intergenerational link between mothers-in-law and women of the next generation, but they do not provide empirical evidence on these underlying mechanisms. In this research, we directly test and distinguish these two assumptions by examining the effect of being raised by a working mother on men's stated preferences regarding gender role attitudes and the effect of the working status of mothers-in-law on the time that married women spend on household chores.

To estimate the effect of mothers-in-law's working status on married women's labor force participation, we use microdata from the China General Social Survey (CGSS) and the China Family Panel Studies (CFPS). We show that the employment status of a married woman is positively and significantly correlated with whether her mother-in-law worked, even after controlling for other background characteristics that may be driving the positive relationship. We find that a working mother-in-law increases the probability that a married woman participates in the labor market by 5.2–18.1 percentage points depending on the specification and the data set used. The estimation results provide strong evidence that social norms do influence the labor supply behavior of married women in China. Although China has a different economic and institutional environment than the US, we find a similar intergenerational link as in Fernández et al. (2004) that wives of men with working mothers are more likely to participate in the labor market.

We also obtain empirical evidence on the underlying mechanisms driving the observed intergeneration correlation. The CGSS directly asks respondents about their attitudes toward women's labor market participation and their subjective well-being. To test the validity of the preference channel, we analyze whether a mother's former working status affects her son's response to gender role questions. We also examine whether the effect of a wife's contribution to household income on her husband's satisfaction depends on the work experience of his mother. We find that men raised by non-working mothers are more likely to agree with traditional gender roles, and that a wife's contribution to household income increases her husband's satisfaction less if he was raised by a non-working mother. The CFPS contains a time use module, which includes questions about the respondents' time spent on various activities. To test the household productivity channel, we examine whether the time spent by a married woman on household chores depends on the former work experience of her mother-in-law. We find that working wives with non-working mothers-in-law on average spend 15% more time during weekdays and 11% more time overall on household chores compared with those working wives whose mothers-in-law worked. These results are likely driven by the fact that men brought up by non-working mothers tend to be less productive or less willing to participate in or outsource housework. The evidence indicates that mothers' former working status affects social norms in terms of men's gender role preferences and their household productivity, and in turn, affects the labor force participation rate of married women in the next generation.

This paper is closely related to a growing literature that emphasizes the long-run impact of changing social norms. Goldin (1991) and Fernández et al. (2004) argue that the attitudes toward working women considerably changed during World War II when a large number of women entered the labor market. Fortin (2005) finds that egalitarian views toward gender roles and work values are positively associated with female employment rates across 25 OECD countries. Fernández and Fogli (2009) and Fernández (2013) investigate the role of culture in explaining changes in female employment.[6] Our findings provide new evidence on the effects of social norms on female labor supply in China. The former employment status of a man's mother can shape his gender role preference and practice, and as a result, influence women's employment choices. This kind of intergenerational propagation mechanism may be quite robust across different economic and institutional settings. Although most studies on social norms examine the impact of social norms on human behavior (e.g., female labor supply), this work also focuses on the channels through which social norms evolve over time.[7]

The rest of the paper is organized as follows. Section 2 provides an overview of the changes in social and gender identity norms in China. Section 3 describes our sample and introduces our empirical framework. Section 4 reports the estimation. Section 5 checks the robustness of the estimation results. Section 6 presents our conclusions.

2. Social and gender identity norms in China

Social and gender identity norms on what is appropriate for men to do and what is appropriate for women to do vary across societies and over time. China experienced tremendous changes in prevalent gender role attitudes over its history and equally drastic changes in women's labor market choices and outcomes.

[5] For example, Bowles (1998) emphasizes the role of economic institutions in the evolution of preferences and culture. Alesina and Fuchs-Schündeln (2007) show that the difference in preferences between former East and West Germans is due in large part to the direct effect of Communism. Giuliano and Spilimbergo (2014) find that the experience of macroeconomic shocks when young has long-lasting effects on beliefs and preferences. Alesina and Giuliano (2015) provide an extensive survey on the relationship between culture and institution.

[6] A few other papers linking social norms to female labor supply include Reimers (1985), Charles et al. (2009), and Farre and Vella (2013). See Bertrand (2011) for an extensive survey on the relationship between social and gender identity norms and women's labor market choices and outcomes.

[7] This study is also related to a fast growing literature on the transmission of social norms and culture (Alesina et al., 2013; Becker et al., 2016; Figlio et al., 2016; Guiso et al., 2006; Nunn and Wantchekon, 2011; Tabellini, 2008; Voigtlander and Voth, 2012).

The traditional Chinese family and society were extremely patriarchal and patrilineal. Women were at a severely disadvantaged position relative to men, and their primary roles were defined as wives and mothers. From the Han dynasty onward in imperial China, Confucianism largely defined the mainstream discourse on gender. A set of basic moral principles, known as the Three Obediences and Four Virtues, were established specifically for women. According to these principles, a virtuous woman must follow the lead of the males in her family, that is, she should obey her father before her marriage, obey her husband as a wife, and obey her son when widowed. Women were also expected to possess four feminine virtues, including morality, proper speech, modest manner and appearance, and diligent work. Women were denied the opportunity for education, and their activities were confined to the domestic arena. Although women may engage in some income-generating activities, such as domestic sidelines, they could do so only with the permission of the men (Zhang, 2015). The long history of imperial endorsement of Confucianism reinforced this obligatory gender roles and the notion of women's inferiority during the pre-modern time in China.

Since the collapse of the Qing dynasty in 1911, gender role attitudes and women's socioeconomic status had undergone remarkable changes. The New Culture Movement of the mid-1910s and 1920s revolted against Confucianism, called for an end to the patriarchal family, and advocated individual freedom and women's liberation. As a result, some women began to acquire formal education and work outside the home in order to fight for their economic independence.

After the founding of the People's Republic of China in 1949, the National Marriage Law, which legalized free choice in marriage and equalized the rights of husbands and wives in the family, was enacted and promulgated in 1950. This law also explicitly granted wives the freedom to participate in the labor market. Since the 1950s, enormous progress has been made in increasing the employment opportunities and education level of women. With guaranteed employment under the state-controlled economy, female labor force participation was almost universal. For instance, in 1988, the labor force participation rate was 93% for women between the prime ages of 16 and 55 (Ge and Yang, 2014). At the same time, women's education level improved tremendously and caught up with that of men over the years (Wu and Zhang, 2010). As women's socioeconomic status was greatly elevated, there were radical departures from traditional gender role views. Egalitarian gender role attitudes, such as women being able to "hold half of the sky," were accepted by more people as the norm.

Despite these substantial improvements, some of the traditional notions and practices concerning gender relations and the family persisted. With respect to the domestic arena, women are still mainly responsible for caring for children and the household, as well as for the major share of housework (Xie, 2013). With respect to the public arena, severe occupation segregation is common. Women's political participation is still very low, and women are underrepresented in higher-level administrative or managerial positions. After the inception of economic reform, the rate of female labor force participation started to decline in the 1980s, along with a widening gender gap in earnings (Ge and Yang, 2014). The decrease in female labor force participation accelerated in the late 1990s during the state-sector restructuring, and in recent years, female labor force participation rate dropped to less than 80% (Feng et al., 2015). As China shifted from command labor arrangement under planning, which emphasized gender equality, to a system of market determination of employment and pay, the traditional views and practices regarding gender relations and division of labor within the family have rebounded. This shift is not surprising because China has "evolved some of the most patriarchal family systems that ever existed" (Greenhalgh, 1985).

Although contemporary China has undergone tremendous improvements in women's socioeconomic status and has moved toward a more egalitarian society, continuations of traditional social and gender identity norms still exist. Therefore, it is of great empirical importance to investigate whether and how much such evolving social norms can affect the labor supply behavior of women.

3. Empirical analysis

3.1. Empirical model

Our baseline empirical specification follows the framework first proposed by Fernández et al. (2004), with several adjustments in view of the objective of our paper. In particular, to study the relationship between the working behavior of a man's mother and that of his wife, the following model is estimated:

$$P_i^w = \beta_0 + X_i^{'}\beta_1 + \beta_2 E_i^m + \epsilon_i, \tag{1}$$

where the dependent variable P_i^w is the participation indicator of the wife. The dummy variable E_i^m equals 1 if the husband's mother worked during her son's adolescence years and equals 0 otherwise, and X_i is a vector of background variables which differs in different specifications. The main purpose of this empirical model is to rule out other characteristics of the couple as the main driver of the intergeneration correlation between the employment status of a married woman and that of her mother-in-law, and thus various control variables are sequentially added.

We first control for several characteristics of the wife that may affect her participation decision, such as her age and education level, and control for several characteristics of her husband that may also affect her work decision, such as his age, education, and income. We also incorporate the total number of children and the number of children under the age of six that are present in the household and a dummy variable on whether the couple lives with a parent or a parent-in-law into the model. Afterward, we include other background variables of the husband: the education level of his parents, his own religion, and his self-assessed ranking of his family in society when he was 14 years old, and a number of additional characteristics of his wife.[8] Finally, we also control for the provincial dummies.

[8] Fernández et al. (2004) use the religion in which the husband was raised as a control variable, whereas we use the husband's own religion instead because the former information is missing for two-thirds of our sample. Therefore, using the aforementioned variable would have greatly shrunk our sample size.

The control variables are sequentially added to account for alternative explanations, given that certain background characteristics of the husband and wife may be correlated with both the working behavior of the mother-in-law and the labor force participation decision of the wife. For instance, the positive association between the employment choice of a woman and her mother-in-law could be driven by assortative matching in religion. As different religions may hold different views toward women's employment, the husband's religion may be correlated with his mother's working behavior, and through assortative matching it may also be associated with his wife's work decision. Other variables, such as the region of residence and the wealth of the husband's family of origin, could also be correlated with both his mother's and his wife's employment status. Therefore, such background variables of the couple should be included in our model to preclude them as the main drivers of the correlation between the working behavior of a man's mother and that of his wife.

Next, we attempt to obtain empirical evidence on the underlying mechanisms that drive the correlation between the working behavior of a man's mother and that of his wife. In their theoretical model, Fernández et al. (2004) outline two possible reasons why the employment status of a married woman might be affected by the former employment status of her mother-in-law. Growing up with a working mother may influence a boy's attitude toward gender roles, particularly toward female labor force participation and what the division of labor in the household should be (preference channel). Alternatively, the working behavior of a man's mother may affect the man's set of household skills and his ability and willingness to cooperate in the household (household productivity channel).

First, to examine the effect of a mother's former employment status on her son's preference formation, we analyze whether the working behavior of the mother affects her son's stated preference regarding gender roles. Specifically, we estimate a probit model based on the following specification:

$$A_i^h = \delta_0 + Z_i'\delta_1 + \delta_2 E_i^m + \mu_i, \tag{2}$$

where A_i^h is a dummy variable that is equal to 1 if the man agrees with a particular statement regarding gender roles (discussed below) and is equal to 0 otherwise. The dummy variable E_i^m equals 1 if the man's mother worked when he was 14 years old and equals 0 otherwise. The vector of background variables Z_i includes a man's age and education level, the education level of his parents, his religion, his self-assessed ranking of his family in society when he was 14 years old, and the provincial dummies. The coefficient δ_2 captures the effect of the former working status of a man's mother on his stated preference regarding gender roles. We include the vector of background variables Z_i to control for other potential explanations for the formation of a man's gender role preferences. Adding these variables likewise helps to consistently estimate the parameter δ_2 because they may affect both the working status of a man's mother during his adolescence and his gender role preference.

The preference channel also implies that men raised by working mothers may have different utility functions from those raised by non-working mothers. To account for this difference, Fernández et al. (2004) introduce a new term in married men's utility function, the disutility of having a working wife: the labor force participation activities of women have a direct negative effect on the utility function of men whose mothers did not participate in the labor market, whereas there is no disutility of having a working wife for men who were raised by working mothers. To test the proposed difference in the utility functions, we examine whether the relationship between a wife's contribution to household income and the subjective well-being of her husband depends on her mother-in-law's former working status. In particular, following Bütikofer (2013), we specify a model of husbands' subjective happiness:

$$H_i^h = \alpha_0 + Y_i'\alpha_1 + \alpha_2 C_i^w + \alpha_3 E_i^m + \alpha_4 C_i^w \times E_i^m + \nu_i, \tag{3}$$

where H_i^h is a dummy variable that is equal to 1 if the husband is reported to be happy about his life and equals 0 otherwise. The vector Y_i represents a set of husband- and household-specific control variables, including the husband's age, education level, annual personal income, religion, his parents' education level, his wife's age and education level, household income, number of children, and the provincial dummies. The key explanatory variable concerning the wife's labor market integration is measured by her contribution to the household income, C_i^w. To distinguish the two types of men, we define an indicator variable E_i^m that equals 1 for men raised by working mothers and equals 0 for men raised by non-working mothers. The coefficient α_2 measures the effect of the wife's income contribution on her husband's happiness, and α_4 is the coefficient on the interaction term of the wife's income contribution and the dummy of the husband's type that captures whether differences exist in the effect of the wife's income contribution on the husband's subjective well-being depending on his mother's former working status.

To investigate whether men brought up by working mothers possess a different set of household skills (or attitudes toward housework) that make them better partners for working women than men brought up by non-working mothers, we analyze married women's time spent on housework. The hypothesis is that the difference in the endowments of household productivity among different types of men may affect the time their wives spend on household chores and thereby influence their labor force participation decisions. On the basis of the literature on household time allocation (e.g., Hwang, 2016), we estimate the following equation:

$$T_i^w = \theta_0 + M_i'\theta_1 + \theta_2 E_i^m + \xi_i, \tag{4}$$

where T_i^w is the wife's time spent on household chores either on weekdays or on both weekdays and weekends (overall). The key variable of interest, the former working status of a woman's mother-in-law, is represented by E_i^m.[9] The vector of covariates M_i

[9] The former working status of the mother-in-law may affect the wife's housework time by influencing her son's household productivity or attitudes toward housework and thereby the husband's time spent on housework, or by influencing her son's inclination to outsource housework without affecting the husband's time spent on housework. Therefore, we use the time the wife spent on housework instead of the husband's time spent on housework as the dependent variable.

includes the working hours and income of the husband and the wife, their adjusted family income, the number of children, the age and education level of the couple, the information on whether they are living with their parents, the occupation of the wife, her health status, and the provincial dummies.

3.2. Data

The main data set used in this paper is the 2010 wave of the CGSS. The CGSS is a series of annual or biannual cross-sectional surveys that have been collected since 2003. The CGSS is designed to be the Chinese counterpart of the General Social Survey (GSS) in the US.[10] The 2010 CGSS adopts a multi-stage stratified sampling design. It covers all 31 provincial units in mainland China and 11,754 households. The data set contains rich information on the demographic characteristics, social attitudes and labor market outcomes of each respondent.

Our sample includes all married men whose wives are from 30 to 50 years old and have urban household registration (*Hukou*). Consistent with standard studies on female employment decision, we exclude from our sample women that are business employers or self-employed.[11] For the purpose of our study, the main variables of interest are the working behavior of a married woman and her husband's mother. A woman's labor force participation status is described by a dummy variable that is equal to 1 if she engaged in any type of jobs for the purpose of earning economic income in the week preceding the interview or if she did not engage in any kind of jobs but was actively seeking for a job in the last three months, and is equal to 0 otherwise. Information on the working behavior of her husband's mother comes from the husband's answer to the question "What was your mother's employment status when you were 14 years old?" The mother-in-law is defined as employed if she was an employee, a farmer, or self-employed.[12]

The 2010 CGSS has several attitudinal questions regarding the respondents' opinions about gender roles. Specifically, the respondents were asked whether they "totally disagree," "somewhat disagree," "are neutral," "somewhat agree," or "totally agree" with each of the following two statements: (1) Men should focus on career, whereas women should focus on family. (2) During a recession, female workers should be dismissed first. We recode the responses to each statement into a binary variable by combining "totally disagree" and "somewhat disagree" as $A_i = 0$, which represents the egalitarian gender role attitude; and combining "neutral," "somewhat agree," and "totally agree" as $A_i = 1$, which represents the traditional gender role attitude. When we tabulate the responses to these two statements regarding gender roles attitudes, 76.0% of men raised by non-working mothers agree with the first statement, while 68.1% of men raised by working mothers agree with the same statement. We also find that 34.1% of men raised by non-working mothers compared with 23.8% of men raised by working mothers agree with the second statement. Men raised by working mothers seem to hold a more egalitarian gender role attitude.

The CGSS also includes questions regarding the subjective well-being of the respondents. The happiness measure used in this study is obtained from the following question: "In general, do you think your life is happy?" The possible responses include "very unhappy," "somewhat unhappy," "in some in-between state," "somewhat happy," and "very happy." We recode the responses into a dummy variable, which equals 1 if the response is "somewhat happy" or "very happy," and equals 0 otherwise. Among married men with working wives, 80.1% report their life being happy, while 76.8% of married men with non-working wives report being happy. This result is likely due to the fact that a working wife helps increase family income. On the other hand, the reported happiness level of a married man also depends on the share of family income contributed by his wife. In families where the wives are the main breadwinners, that is, the wives' income consists of more than half of the family income, 77.4% of the husbands report themselves as being happy, whereas in families where the husbands are the main breadwinners, 80.5% of the husbands report they are happy.

One shortcoming of the CGSS is that it lacks simultaneous background information on both the husband and wife. For corroborative evidence, we also conduct our analysis using the CFPS. The CFPS is a nationally representative longitudinal survey of Chinese communities, families, and individuals. The baseline CFPS survey was launched in 2010 covering 14,960 households and 42,590 individuals, and the first follow-up survey was carried out in 2012. The CFPS sample covers 25 provincial units, representing 95% of the Chinese population.[13] Similar to the CGSS, the CFPS surveys also contain rich information on individual demographics and labor market outcomes. One special feature of the CFPS is that it has personal identifiers for each household member, and as a result, we can link the husband and wife for each married couple. Therefore, the data set contains detailed information on the background variables of both the husband and the wife.

[10] Bian and Li (2012) describe the sample designs and data evaluation of the CGSS.

[11] The age restriction minimizes the concerns regarding education and retirement decisions. We confine our attention to urban women because rural women have different patterns of labor supply behavior. The original 2010 CGSS has 5677 males in the sample. When we restrict the sample to married men whose wives are between 30 and 50 years old, 3,331 observations are dropped. Moreover, 1291 married women in the sample do not have urban *Hukou*, and an additional 142 women are dropped because they are employers or are self-employed. This leaves a full CGSS sample of 913 women. Another 209 women are excluded from this study because their family background information is not complete. The baseline empirical analysis is based on this final CGSS sample of 704 married women. The summary statistics for the final CGSS sample are presented in Appendix Table A.1. Appendix Table A.2 provides the descriptive statistics on the full sample. No statistical difference is observed between the final sample used for our empirical analyses and the full sample.

[12] The primary source of variations in the mother-in-law's former employment status comes from her education and family income. The mother's former work behavior seems to have little effect on her son's marriage probability. For all men in the 2010 CGSS aged between 30 and 50, the raw probability that a man is married is 0.960 if his mother did not work and 0.951 if she did. Even after controlling for all his characteristics (i.e., age, education level, and income) and his background characteristics, the probability that he is married is not significantly affected by whether his mother worked. The coefficient on the dummy for a working mother is -0.0005 and insignificant. Similar results are found when we use the CFPS data.

[13] Xie and Hu (2014) describe the background and characteristics of the CFPS.

We restrict the CFPS sample to include married urban women between 30 and 50 years old.[14] Some variables in the CFPS have a slightly different definition than those in the CGSS. A married woman's labor force participation status is captured by an indicator variable that is equal to 0 if she did not want to work, lost working capacity due to age, disability, or illness, was retired, attending schooling, or doing housework, and is equal to 1 otherwise. The retrospective information on the employment status of both spouses' mothers was collected in the 2012 follow-up survey. Thus, we use the 2012 CFPS wave for the baseline model. The employment status of the husband's (or the wife's) mother is described by a dummy variable that is equal to 0 if his (or her) answer to the question "What was your mother's occupation when you were at the age of 14?" was either "not applicable" or "unemployed" and is equal to 1 otherwise. One limitation of the CFPS is that it does not include some of the husband's background variables, such as his religion and the wealth of his family of origin. Therefore, we use the results from the CFPS as corroborative evidence on the relationship between a married woman's participation decision and her mother-in-law's former working behavior. The summary statistics for our 2012 CFPS sample are presented in Appendix Table A.1. Overall, the characteristics of the 2012 CFPS sample are similar to those of the 2010 CGSS sample, except that the CFPS women are slightly less educated, more likely to live with their parents or in-laws, and more likely to participate in the labor market.

Particularly important to our analysis, the 2010 CFPS wave contains a time use module. Each respondent was asked to report how many hours per day on average he or she spent participating in various activities in the last month that was not considered a vacation.[15] The time use information is collected for both weekdays and weekends and for six categories of daily activities, including personal life, individual work, training and study, entertainment and social activities, transportation, and others. Time use on personal life is further divided into hours spent sleeping, eating meals, or other activities, maintaining personal hygiene, household chores, and taking care of family members. We are mostly interested in the time married couple spent on household chores, which refers to any unpaid labor for the final consumption of one's family or oneself, such as preparing food, house cleaning, putting clothes and other items in order, and shopping.[16] In our sample, working wives on average spend 12.3 h per week on household chores, whereas non-working wives spend 59% more time (19.5 h) on housework. Husbands spend much less time on household chores, and husbands with working wives only spend slightly more time (6.0 versus 5.6 h) on household chores than those with non-working wives. In our empirical analysis, we will use the time use information to test whether a wife's time spent on household chores diverges depending on her mother-in-law's former working behavior.

4. Estimation results

In this section, we first present empirical evidence on a positive relationship between the employment status of a man's mother and that of his wife in China. Specifically, cross-sectional evidence suggests that the wives of men brought up by working mothers are more likely to participate in the labor force. This relationship remains robust after we control various characteristics of the husband and wife. Afterward, we show that both the preference channel and the household productivity channel contribute to the observed intergenerational correlation between the working behavior of a married woman and her mother-in-law.

4.1. Cross-sectional evidence

We estimate a probit model specified in Eq. (1) on the 2010 CGSS sample and report estimation results with robust standard errors in Table 1. We regress the labor force participation probability of the wife on her mother-in-law's former working status and other control variables and report the marginal effects calculated at the means of the independent variables.[17] Table 1 has six columns corresponding to six specifications with different control variables. In Column (1) of Table 1, we report regression results with only the former working behavior of the mother-in-law and the wife's own age and education level. Having a husband whose mother worked increases the probability that a married woman participates in the labor market by 15.9 percentage points, from 60.2% to 76.1%, and the effect is significant at the 1% level. Column (2) adds the husband's characteristics of age, education level, and income to those of his wife, and Column (3) includes the number of children and the number of children under the age of 6. With the additional control variables, the working behavior of the mother-in-law still has a significantly positive effect on the participation probability of a married woman. The point estimates have the same sign and are close in magnitude compared with those in Column

[14] We are able to link 11,553 married men to their wives in the 2012 CFPS. When we restrict the age of the wives to between 30 and 50, the sample size is reduced to 5850. A total of 4424 married women in the sample do not have urban *Hukou*, and an additional 91 women are dropped because they are employers or are self-employed. This leaves a full CFPS sample of 1335 women. Another 448 women are excluded from this study because their family background information is not complete. The final CFPS sample has 887 observations.

[15] "Non-vacation" refers to daily life. For students and teachers, it refers to school semesters instead of winter or summer break. For workers, it means that they are not on vacation, such as annual leave, marriage leave, maternity leave, and so on. However, in this context, "vacation" does not refer to weekends.

[16] Specifically, household chores include preparing food and cleaning afterward, cleaning the house and the surroundings, washing clothes and putting them in order, shopping, feeding pets, house decorating, maintaining, and do-it-yourself repairs. They also include arranging and managing family affairs, such as planning a party, decorating the room, planning a trip, making a shopping list, and searching for investment information.

[17] We also estimated the effect of the former working behavior of the husband's mother on the wife's employment probability (instead of participation probability), and the effects are positive and statistically significant. We report these results in Appendix Table B.1. The effects of mother-in-law's working status on married women's full-time working behavior are also significantly positive and similar in size as those reported in Appendix Table B.1, as 86% of the working wives work full time. To test whether our results are robust to our sample restrictions to wives from 30 to 50 years old with urban registration, we report the regression results for an extend CGSS sample including all married women without imposing any restriction on their age or *Hukou* status in Appendix Table B.2. The effects of mother-in-law's working status on married women's participation remain positive and statistically significant. Similar results hold when we relax the age and *Hukou* registration restrictions with the CFPS sample.

Table 1
Probit regressions of wife's participation status on her mother-in-law's working behavior(CGSS).

	(1)	(2)	(3)	(4)	(5)	(6)
Mother-in-law worked	0.1593***	0.1534***	0.1525***	0.1524***	0.1546***	0.1811***
	(0.0391)	(0.0393)	(0.0393)	(0.0393)	(0.0402)	(0.0433)
Wife's age	−0.0100***	−0.0017	−0.0019	−0.0009	0.0003	0.0022
	(0.0032)	(0.0060)	(0.0062)	(0.0062)	(0.0063)	(0.0062)
Wife's education:						
Middle school and below	−0.3714***	−0.3567***	−0.3330***	−0.3235***	−0.2859***	−0.3255***
	(0.0799)	(0.0917)	(0.0928)	(0.0936)	(0.0944)	(0.1020)
High school	−0.1458*	−0.1481*	−0.1400	−0.1346	−0.1049	−0.1346
	(0.0803)	(0.0860)	(0.0867)	(0.0878)	(0.0887)	(0.0964)
Husband's age		−0.0090*	−0.0088	−0.0091*	−0.0087	−0.0121**
		(0.0053)	(0.0054)	(0.0054)	(0.0055)	(0.0054)
Husband's education:						
Middle school and below		−0.0717	−0.0661	−0.0658	−0.0680	−0.0567
		(0.0776)	(0.0778)	(0.0778)	(0.0800)	(0.0818)
High school		−0.0017	−0.0007	0.0005	−0.0002	0.0147
		(0.0674)	(0.0678)	(0.0673)	(0.0683)	(0.0713)
Ln (husband's income)		−0.0264	−0.0282	−0.0252	−0.0310	−0.0573**
		(0.0229)	(0.0224)	(0.0222)	(0.0226)	(0.0237)
Number of children			−0.0866**	−0.0870**	−0.0874**	−0.0919**
			(0.0358)	(0.0357)	(0.0366)	(0.0385)
Number of children under six			−0.0138	−0.0130	0.0052	−0.0092
			(0.0542)	(0.0543)	(0.0552)	(0.0545)
Living with parents				0.1138**	0.1042*	0.0954*
				(0.0553)	(0.0559)	(0.0566)
Husband's parents' education					yes	yes
Husband's religion					yes	yes
Husband's family income at 14					yes	yes
Region						yes
No. of observations	704	704	704	704	704	704
Pseudo R^2	0.1177	0.1248	0.1342	0.1397	0.1578	0.2222
Log likelihood	−373.89	−370.88	−366.90	−364.58	−356.91	−329.60

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. The variable "mother-in-law worked" represents the employment status of the husband's mother when he was 14 years old. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

(1).[18] As found in other studies on female labor force participation, the woman's own education level has a significantly positive effect, whereas her husband's income and the number of children are negatively associated with her labor force participation decision.[19]

Whether a married woman lives with a parent or an in-law may affect her likelihood of working outside the home (Maurer-Fazio et al., 2009). The presence of a grandparent may increase a woman's labor force participation if the grandparent helps provide child care, or may decrease her participation if she needs to spend time caring for the elderly. The specification in Column (4) includes a co-residence dummy on whether the married woman lives with her parents or her in-laws as an additional control variable. A married woman's participation probability is 11.4 percentage points higher for women living with a parent or an in-law.[20] This result is consistent with the fact that many Chinese grandparents help take care of their grandchildren. The working behavior of the mother-in-law has similar effects on a woman's participation decision as before when additional co-residence status is included.

Although the estimates in Columns (1)–(4) have revealed a positive correlation between the former working behavior of a man's mother and his wife's labor force participation decision, we need to ensure that our estimates are not mainly driven by other

[18] Our estimates are not driven by the husband's occupation. We find that the wife of a self-employed man is significantly less likely to participate in the labor market, but the positive effect of mother-in-law's former working status on the wife's participation probability remains robust after we control for the husband's self-employment status.

[19] The statistically insignificant negative effects of the husband's income on the wife's participation decision are likely due to measurement errors in husbands' reported income. We control for husbands' education in the participation equation for the following reasons. First, husbands' education may be an indicator of their permanent income or wealth. It may also be an indicator of their tastes for work. If husbands' education is a proxy for household wealth, then economic theory predicts that women's participation will decrease along with husbands' education. On the other hand, if husbands' education is positively correlated with unmeasured aspects of tastes for work, then the correlation between husbands' education and women's participation will depend on the matching on work orientation in the marriage market. Therefore, the effects of husbands' education on women's labor supply are theoretically ambiguous. Our finding that the effects of husbands' education on women's labor force participation in urban China are not statistically different from zero is consistent with theoretical prediction.

[20] It should be noted that some of the explanatory variables in Table 1, such as husband's income, the number of children, and living with a parent or an in-law, may be endogenous. Hence, their coefficient estimates should be interpreted with caution.

Table 2
Probit regressions of wife's participation status on her mother-in-law's working behavior (CFPS).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mother-in-law worked	0.0983***	0.0979***	0.1012***	0.1024***	0.0987***	0.0710***	0.0523**
	(0.0279)	(0.0282)	(0.0281)	(0.0281)	(0.0273)	(0.0264)	(0.0260)
Wife's age	−0.0041*	0.0040	0.0015	0.0018	0.0019	0.0022	0.0020
	(0.0023)	(0.0044)	(0.0045)	(0.0044)	(0.0042)	(0.0040)	(0.0036)
Wife's education:							
Middle school and below	−0.2069***	−0.2068***	−0.2072***	−0.2117***	−0.1869***	−0.1876***	−0.1707***
	(0.0537)	(0.0564)	(0.0563)	(0.0563)	(0.0534)	(0.0494)	(0.0525)
High school	−0.1066*	−0.1100**	−0.1114**	−0.1144**	−0.0972*	−0.0882*	−0.0819*
	(0.0548)	(0.0532)	(0.0537)	(0.0537)	(0.0511)	(0.0477)	(0.0439)
Husband's age		−0.0086**	−0.0096**	−0.0091**	−0.0088**	−0.0086**	−0.0079**
		(0.0040)	(0.0039)	(0.0039)	(0.0037)	(0.0036)	(0.0035)
Husband's education:							
Middle school and below		−0.0029	0.0067	0.0024	0.0141	0.0316	0.0369
		(0.0493)	(0.0492)	(0.0494)	(0.0478)	(0.0445)	(0.0405)
High school		0.0005	0.0072	0.0045	0.0111	0.0259	0.0325
		(0.0438)	(0.0439)	(0.0440)	(0.0421)	(0.0393)	(0.0360)
Ln (husband's income)		−0.0127	−0.0128	−0.0112	−0.0123	−0.0091	−0.0090
		(0.0143)	(0.0143)	(0.0142)	(0.0141)	(0.0134)	(0.0121)
Number of children			−0.0125	−0.0124	−0.0102	−0.0278	−0.0244
			(0.0269)	(0.0268)	(0.0258)	(0.0246)	(0.0222)
Number of children under six			−0.1061***	−0.1089***	−0.1049***	−0.1019***	−0.0915***
			(0.0382)	(0.0382)	(0.0365)	(0.0344)	(0.0346)
Living with parents				0.0509	0.0517*	0.0452	0.0381
				(0.0313)	(0.0300)	(0.0275)	(0.0254)
Mother worked							0.0389
							(0.0261)
Husband's parents' education					yes	yes	yes
Region						yes	yes
Wife's parents' education							yes
No. of observations	887	887	887	887	887	887	887
Pseudo R^2	0.0524	0.0585	0.0690	0.0720	0.0798	0.1214	0.1328
Log likelihood	−418.75	−416.04	−411.42	−410.10	−406.63	−388.26	−383.20

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. The variable "mother-in-law worked" represents the employment status of the husband's mother when he was 14 years old. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Region" refers to a set of provincial dummies.*significant at 10%, ** significant at 5%, ***significant at 1%.

characteristics of the husband that are correlated with both his mother's working status and his wife's participation decision. In Column (5) of Table 1, we include the husband's parents' education level, his own religion, and his self-assessed ranking of his family in society when he was 14 years old. We control for the husband's religion because a man and woman sharing the same religion tend to marry each other. As previously discussed, if women of some religions are systematically more likely to participate in the labor force, this factor may be driving the positive coefficient on the former working status of the mother-in-law. Similarly, the wealth of the husband's family of origin may be correlated with his mother's employment decision. Through assortative matching in family wealth, the wealth of the husband's family of origin may also be correlated with his wife's employment decision. Given that the husband's parental wealth or income is not available in our data set, we control for a proxy of the parents' wealth based on the self-assessment of the son.

Finally, the employment choice of the husband's mother may be correlated with the region in which the husband grew up, for example, by its industry structure or regional employment policy. His wife working in the same region would generate the positive correlation. To control for this possibility, we include provincial dummies in Column (6). After including all our controls in the last column of Table 1, we find that the probability a married woman participates in the labor market increases by 18.1 percentage points, from 60.8% to 78.9%. The effect is both statistically and economically significant. Note that, the presence of an additional child reduces the probability that the wife participates in the labor market by approximately 9 percentage points.

Our results using the CGSS provide strong evidence that a married woman whose mother-in-law worked is more likely to participate in the labor market. This relationship remains robust to the inclusion of various control variables, excluding the characteristics of the woman's own parents. To examine whether our results are robust to the additional background characteristics of the wife, we use the 2012 sample of CFPS as an alternative data source. The estimation results are reported in Table 2. The first four columns contain the same set of control variables as those of Table 1. Given that CFPS does not have the information on the husband's own religion and his self-assessment of his family in society when he was 14 years old, these two variables are not included in Columns (5) and (6). The estimation results in the first six columns are similar to those reported in Table 1. The positive effect of the working behavior of the husband's mother on the probability that the wife participates in the labor market is statistically significant but is somewhat smaller in magnitude. In Column (7) of Table 2, we include additional control variables on the education of the

wife's parents and the wife's mother's working status when she was 14 years old. After including the background of the wife's parents, we find that the effect of the mother-in-law's working status on the wife's participation decision remains large, positive, and statistically significant. The probability that a married woman participates in the labor market increases by 5.2 percentage points, from 83.8% to 89.0%, if her mother-in-law worked.

4.2. Testing for potential underlying mechanisms

Two potential underlying mechanisms may drive the correlation between the working behavior of a man's mother and that of his wife. The positive correlation mainly occurs via the mother-in-law's influence on her son. First, men raised by working mothers may be less averse toward having a working wife than men raised by non-working mothers. Therefore, the difference in the husband's preference could serve as one underlying mechanism for this positive correlation. Alternatively, even if the husbands have a similar preference, men that grew up with working mothers may be more productive in housework than other men, which might affect the probability that his wife participates in the labor market and serve as another mechanism for this positive association. Fernández et al. (2004) propose the above two potential channels in a theoretical framework, but they do not provide empirical tests for them. In this section, we directly test these two potential underlying mechanisms. We find that the positive correlation between the working behavior of the wife and her mother-in-law is primarily driven by the fact that her mother-in-law has influenced both her husband's gender role preference and his productivity in home production.

4.2.1. Preference channel

We first use the CGSS to estimate the model specified in Eq. (2) to examine whether men's stated gender role attitudes are affected by the working behavior of their mothers. The effect of the mothers' employment status on the stated preferences of men should apply to both married and unmarried men, thus we estimate Eq. (2) for all men (both married and unmarried). Table 3 reports the results. Column (1) presents the probit estimates of men's probability of agreeing with the statement "Men should focus on work, whereas women should focus on family" on their mothers' employment status, along with their own age and education. Men brought up by working mothers are 7.2 percentage points less likely to agree with this statement than those raised by non-working mothers. The difference is statistically significant. Men with middle school education or below are more likely to agree with this statement, which reflects more traditional gender role attitudes. In Column (2), we augment the model with additional controls on men's background variables, including his parents' education, his religion, his self-assessed ranking of his family in society when he was 14, and the provincial dummies. The results are similar to those reported in Column (1). Men brought up by working mothers are found to be 6.7 percentage points less likely to agree with the idea of traditional household labor division. We repeat the same exercise for the response to the other statement "During a recession, female workers should be dismissed first" in Columns (3) and (4) of Table 3. Those men raised by working mothers are approximately 7–8 percentage points less likely to agree with the statement, and this

Table 3
Probit regressions of men's response to gender-role questions on his mother's work status (CGSS).

Statement	"Men should focus on career, whereas women should focus on family."		"During a recession, female workers should be dismissed first."	
	(1)	(2)	(3)	(4)
Mother worked	−0.0719**	−0.0673**	−0.0849***	−0.0682**
	(0.0306)	(0.0327)	(0.0274)	(0.0291)
Married	−0.0194	−0.0116	−0.0231	−0.0342
	(0.0344)	(0.0353)	(0.0323)	(0.0331)
Age	−0.0001	0.0002	0.0016	0.0018
	(0.0018)	(0.0019)	(0.0017)	(0.0017)
Education:				
Middle school and below	0.0918**	0.0770*	0.1186***	0.1050**
	(0.0404)	(0.0450)	(0.0387)	(0.0423)
High school	0.0060	0.0064	0.0817**	0.0825**
	(0.0331)	(0.0360)	(0.0336)	(0.0351)
Parents' education		yes		yes
Religion		yes		yes
Family income at 14		yes		yes
Region		yes		yes
No. of observations	1432	1432	1432	1432
Pseudo R2	0.0092	0.0580	0.0153	0.0659
Log likelihood	−868.72	−825.91	−808.79	−767.19

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the male respondent's response to each statement, which is a binary variable that equals 1 if the respondent agrees with the statement. The variable "mother worked" represents the employment status of the man's mother when he was 14 years old. For educational attainment, the category "university and above" serves as the reference group. "Religion" is a set of dummies on religion. "Family income at 14" is a set of dummies for self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

Table 4
Probit regressions of wife's participation status on her husband's stated preferences (CGSS).

	(1)	(2)	(3)	(4)
"Men should focus on career, whereas women should focus on family." (agree = 1)	−0.1134***	−0.0832**		
	(0.0393)	(0.0401)		
"During a recession, female workers should be dismissed first." (agree = 1)			−0.0462	−0.0289
			(0.0386)	(0.0407)
Wife's age	−0.0118***	0.0030	−0.0118***	0.0028
	(0.0031)	(0.0062)	(0.0032)	(0.0062)
Wife's education:				
Middle school and below	−0.3611***	−0.3122***	−0.3698***	−0.3186***
	(0.0798)	(0.1006)	(0.0807)	(0.0998)
High school	−0.1511*	−0.1297	−0.1473*	−0.1273
	(0.0794)	(0.0945)	(0.0810)	(0.0943)
Husband's age		−0.0139***		−0.0140***
		(0.0053)		(0.0053)
Husband's education:				
Middle school and below		−0.0624		−0.0530
		(0.0812)		(0.0806)
High school		0.0095		0.0163
		(0.0710)		(0.0702)
Ln (husband's income)		−0.0449*		−0.0458*
		(0.0244)		(0.0240)
Number of children		−0.0840**		−0.0881**
		(0.0376)		(0.0376)
Number of children under six		−0.0263		−0.0284
		(0.0529)		(0.0533)
Living with parents		0.0901		0.0897
		(0.0566)		(0.0571)
Husband's parents' education		yes		yes
Husband's religion		yes		yes
Husband's family income at 14		yes		yes
Region		yes		yes
No. of observations	703	703	703	703
Pseudo R^2	0.1161	0.2109	0.1082	0.2070
Log likelihood	−373.46	−333.43	−376.80	−335.06

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

coefficient is statistically significant. The result is robust even after controlling for men's background characteristics. These findings suggest that men raised by working mothers are more likely to disagree with traditional views on gender roles.[21]

A closely related question is whether the stated preferences of husbands affect the labor force participation of their wives. In Table 4, we report the results of probit regressions of the wives' labor force participation status on their husbands' stated gender role preferences and other control variables. The results in Columns (1) and (2) suggest that those husbands who agree with the statement "Men should focus on career, whereas women should focus on family" are 8–11 percentage points less likely to have wives who participate in the labor market than those husbands who disagree with the statement. Columns (3) and (4) indicate that agreeing with the statement "During a recession, female workers should be dismissed first" is also negatively associated with the wife's labor force participation probability, even though the effect is not statistically significant. Table 4 suggests that the stated gender role attitudes of husbands and the labor force participation status of their wives are correlated. If husbands disagree with the traditional views on gender roles, then wives are more likely to participate in the labor market.

Next, we examine whether the effect of a married woman's labor market attachment on her husband's subjective well-being depends on the former employment status of his mother. We use the CGSS to estimate the model specified in Eq. (3). The dependent variable is a dummy variable on whether the husband thinks his life is happy. The covariates include the wife's contribution to family income, which equals the wife's annual income divided by the annual household income, an indicator variable on whether the husband grew up with a working mother, and the interaction term. We also control for a vector of other explanatory variables, including the wife's and husband's age, educational attainment of the couple, husband's personal income, household income, number of children, husband's religion, his parents' education level, and the provincial dummies.

The estimation results of four specifications with different control variables are presented in Table 5. We find that a man's

[21] When we run the same regressions as those in Table 3 for married men only, the coefficients on the mothers' employment status remain negative and significant, and they are similar in magnitude.

Table 5
Probit regressions of husband's subjective well-being on wife's income contribution(CGSS).

	(1)	(2)	(3)	(4)
Wife's income contribution (i)	−0.0333	−0.0045	−0.0186	0.0137
	(0.1411)	(0.1092)	(0.1076)	(0.1176)
Mother-in-law worked (ii)	−0.1429**	−0.0785	−0.0796	−0.0776
	(0.0614)	(0.0490)	(0.0490)	(0.0500)
Interaction term (i*ii)	0.3329**	0.2203*	0.2255*	0.2189*
	(0.1659)	(0.1288)	(0.1261)	(0.1299)
Husband's age	−0.0024	−0.0011	0.0069	0.0065
	(0.0025)	(0.0019)	(0.0042)	(0.0043)
Husband's education:				
Middle school and below	0.0730	0.0652	0.0653	0.0590
	(0.0599)	(0.0465)	(0.0512)	(0.0512)
High school	0.0469	0.0531	0.0414	0.0403
	(0.0525)	(0.0416)	(0.0450)	(0.0452)
Ln (husband's income)	0.1285***	0.1113***	0.1045***	0.1216***
	(0.0211)	(0.0182)	(0.0181)	(0.0385)
Wife's age			−0.0108**	−0.0117**
			(0.0046)	(0.0047)
Wife's education:				
Middle school and below			0.0020	−0.0071
			(0.0516)	(0.0523)
High school			0.0341	0.0317
			(0.0449)	(0.0449)
Ln (household income)				−0.0188
				(0.0392)
Number of children				0.0428*
				(0.0247)
Number of children under six				−0.0404
				(0.0371)
Husband's religion		yes	yes	yes
Husband's parents' education		yes	yes	yes
Region		yes	yes	yes
No. of observations	634	634	634	634
Pseudo R^2	0.0844	0.1635	0.1747	0.1804
Log likelihood	−286.89	−262.10	−258.61	−256.82

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is a binary variable that equals 1 if the husband feels happy. The wife's income contribution equals her annual income divided by the annual household income of her family. The variable "mother-in-law worked" represents the employment status of the husband's mother when he was 14 years old. For educational attainment, the category "University and above" serves as the reference group. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

happiness increases significantly with his own income in all specifications, and he tends to be happier if his wife is younger and if they have more children. The main focus of our study is the effect of the wife's contribution to household income on the husband's happiness, particularly whether the effect differs for men raised by working mothers and men raised by non-working mothers. We find that the wife's income contribution exerts a positive and significant effect on the subjective well-being of the husband if his mother was working. The coefficient of the interaction term of the wife's income contribution and mother-in-law's employment status is significantly positive and large in size. According to our estimates, if a wife's contribution to household income is increased by 10 percentage points, the probability that a man reports himself as happy increases by 2–3 percentage points if he was raised by a working mother. For a man who grew up with a non-working mother, the effect of his wife's contribution to household income on his subjective well-being is close to 0, ranging from − 0.0333 to 0.0137 in various specifications.[22] If the wife's contribution to household income is a valid proxy for her attachment to the labor market, these results are consistent with the hypothesis that the two types of men raised by working mothers and by non-working mothers have systematically different utility functions and preferences toward the labor market integration of women.

4.2.2. Household productivity channel

We analyze whether married women's time spent on housework depends on the previous employment status of their mothers-in-law by estimating the model specified in Eq. (4). Men brought up by working mothers may be more productive at home. They also may be more willing to engage in housework or outsource housework compared to those brought up by non-working

[22] Using a similar framework, Bütikofer (2013) finds that in Switzerland a wife's income contribution has statistically insignificant effects on her husband's well-being if he was raised by a working mother and has negative effects on her husband's well-being if he was raised by a non-working mother. The divergent results support the view that cultural background and institutional setting may have long-lasting effects on individual preferences and beliefs.

Table 6
Regressions of wife's time spent on housework on her mother-in-law's working behavior (CFPS 2010).

Time spent on housework	Working wives		Non-working wives	
	Overall	Weekdays	Overall	Weekdays
	(1)	(2)	(3)	(4)
Mother-in-law worked	−1.3270*	−1.1771**	0.0689	−0.1906
	(0.7846)	(0.5968)	(1.4451)	(1.0808)
Wife's working hours	−0.0948***	−0.0681**		
	(0.0356)	(0.0295)		
Husband's working hours	0.0358*	0.0284*	0.0162	0.0042
	(0.0191)	(0.0153)	(0.0324)	(0.0246)
Number of children	−0.2220	−0.3623	0.6014	0.1260
	(0.9618)	(0.7161)	(1.4156)	(1.1109)
Number of children under 18	2.7391**	1.5434*	2.7520**	2.1869**
	(1.1207)	(0.9212)	(1.3110)	(1.0104)
Wife's age	0.2765**	0.1879**	0.0370	0.0313
	(0.1207)	(0.0950)	(0.2367)	(0.1703)
Wife's income	−0.0001***	−0.0000***		
	(0.0000)	(0.0000)		
Husband's income	0.0000**	0.0000**	−0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Family income	−0.0000	−0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Living arrangements	yes	yes	yes	yes
Husband's age and education	yes	yes	yes	yes
Wife's education	yes	yes	yes	yes
Wife's health status	yes	yes	yes	yes
Wife's occupation	yes	yes		
Region	yes	yes	yes	yes
Observations	409	409	232	232
Adjusted R-squared	0.125	0.099	0.054	0.058

Note: Robust standard errors are reported in parentheses. The dependent variables are the wife's weekly hours spent on household chores (overall or on weekdays). The "mother-in-law worked" variable represents the employment status of the husband's mother when he was 14 years old. Living arrangements are dummy variables that indicate whether the couple is living with their parents. The couple's education level, the wife's occupation and her health status are all dummy variables. "Region" refers to a set of provincial dummies.*significant at 10%, ** significant at 5%, ***significant at 1%.

mothers.[23]Thus, their wives spend less time on housework, and we expect the former working status of a woman's mother-in-law to have a negative effect on her time spent on household chores.

We use the time module from the 2010 wave of the CFPS to estimate the model. We impose the same restrictions as those for the 2012 CFPS and keep married couples with the spouse present in the sample. Table 6 shows the estimation results. The dependent variables are the average (weekly) hours that a married woman spent on household chores on both weekends and weekdays (overall) in Columns (1) and (3), as well as time spent on housework on weekdays alone in Columns (2) and (4). The focus of our analysis is the coefficient on the former working status of the woman's mother-in-law.

In the first two columns, we focus on married women who have jobs and control for the couple's working hours, number of children, and various other characteristics of the wife and the husband. Consistent with previous findings, we find that a married woman spends more hours on housework if she works fewer hours, and if her husband works more hours. Older women and women with young children spend more time on housework. A working wife's time spent on household chores is also negatively associated with her own income and positively associated with her husband's income. After controlling for all the related demographic and background variables and working status of the couple, the estimates in Column (1) indicate that working wives with working mothers-in-law spend 1.33 fewer hours per week on household chores than do women with non-working mothers-in-law. Furthermore, Column (2) suggests that women with working mothers-in-law primarily spend less time on household chores on weekdays (1.18 out of 1.33 h), instead of on weekends. Given that the average hours spent on household chores of the sample of working wives are 12.3 h per week and 7.7 h during the weekdays, the effect of having a working mother-in-law on the housework time of a working wife is substantial.

In the last two columns of Table 6, we examine the effect of the mother-in-law's working behavior on non-working wives' time spent on housework and find it insignificant. In fact, if a married woman is not working, her time spent on housework is independent

[23] We examined the hours that married men spend on housework and found them to be independent of their mothers' working behavior. This result suggests that men who grew up with a working mother may not spend more time on housework themselves, but they may be able to do housework more efficiently or are more willing to outsource housework than men who grew up with a non-working mother. We also examined whether the engagement of husbands in housework affects the labor force participation of their wives. As shown in Appendix Table C.1, married women are significantly more likely to participate in the labor market if their husbands' share in total housework hours is high.

Table 7
Robustness test: father-in-law.

	CGSS			CFPS		
	(1)	(2)	(3)	(4)	(5)	(6)
Father-in-law worked	−0.0996	−0.0203	−0.0859	0.0599	0.0725**	0.0500
	(0.1604)	(0.1689)	(0.1798)	(0.0393)	(0.0364)	(0.0384)
Mother-in-law worked			0.1842***			0.0597**
			(0.0436)			(0.0276)
Wife's age	−0.0112***	0.0028	0.0022	−0.0043*	0.0028	0.0022
	(0.0032)	(0.0062)	(0.0062)	(0.0023)	(0.0040)	(0.0040)
Wife's education:						
Middle school and below	−0.3992***	−0.3322***	−0.3275**	−0.2224***	−0.1964***	−0.1891***
	(0.0800)	(0.1000)	(0.1019)	(0.0535)	(0.0484)	(0.0487)
High school	−0.1656*	−0.1361	−0.1371	−0.1181**	−0.0947**	−0.0881*
	(0.0805)	(0.0945)	(0.0963)	(0.0544)	(0.0469)	(0.0472)
Husband's age		−0.0137**	−0.0119*		−0.0094***	−0.0088**
		(0.0053)	(0.0054)		(0.0035)	(0.0035)
Husband's education:						
Middle school and below		−0.0665	−0.0556		0.0352	0.0326
		(0.0802)	(0.0819)		(0.0444)	(0.0444)
High school		0.0092	0.0158		0.0334	0.0280
		(0.0698)	(0.0712)		(0.0392)	(0.0393)
Ln (husband's income)		−0.0563*	−0.0565*		−0.0094	−0.0102
		(0.0239)	(0.0237)		(0.0136)	(0.0136)
Number of children		−0.0962*	−0.0917*		−0.0260	−0.0270
		(0.0377)	(0.0383)		(0.0248)	(0.0246)
Number of children under six		−0.0294	−0.0101		−0.1006***	−0.1020***
		(0.0542)	(0.0544)		(0.0345)	(0.0342)
Living with parents		0.0904	0.0953		0.0449	0.0475*
		(0.0567)	(0.0566)		(0.0274)	(0.0272)
Husband's parents' education		yes	yes		yes	yes
Husband's religion		yes	yes			
Husband's family income at 14		yes	yes			
Region		yes	yes		yes	yes
No. of observations	704	704	704	887	887	887
Pseudo R^2	0.0984	0.2024	0.2226	0.0418	0.1184	0.1235
Log likelihood	−382.08	−338.02	−329.42	−423.45	−389.57	−387.33

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. Models (1) and (2) use the same specifications as those reported in Table 1 Columns (1) and (6), except that the working status of the mother-in-law is substituted with the working status of the father-in-law. In model (3), we include the working status of both the mother- and the father-in-law. The dependent variable is the participation indicator of the wife. The "father-in-law worked" variable represents the working status of the husband's father when he was 14. The "mother-in-law worked" variable represents the employment status of the husband's mother when he was 14. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

of her husband's working hours or income and is only positively associated with the number of young children. These results suggest that the experience of growing up with a working mother helps men become better partners for working females, but it has little effect on men with non-working wives.

Following the literature (Fernández et al., 2004), we considered the preference channel and the household productivity channel to explain why married women with working mothers-in-law are more likely to participate in the labor market. The preference hypothesis emphasizes that the tastes or attitudes of a man are affected by having a working mother, whereas the household productivity hypothesis argues that a man with a working mother has a different set of household skills (or attitude toward housework). However, we cannot completely tease out these two hypotheses because household skills are most likely a function of having different preferences, and vice versa. For example, using a washing machine is unlikely to require a set of specialized skills, but some men are more averse than others to doing housework (or are unwilling to outsource these tasks). Similarly, the stated gender role preferences may reflect or respond to perceived gender differences in the labor market and in household productivities.

5. Robustness checks

Previous analysis shows that the positive relationship between the working behavior of a man's mother and that of his wife is robust across datasets, but the cross-section results may still suffer from omitted variable bias. In this section, we first conduct falsification tests using the information on women's fathers-in-law and their own mothers, thereby trying to rule out potential omitted variable bias. Then, we examine alternative mechanisms that may drive the positive correlation.

Table 8
Robustness test: own mother(CGSS).

	(1)	(2)	(3)	(4)	(5)	(6)
Mother worked	0.0356	0.0369	0.0393	0.0392	0.0262	0.0047
	(0.0399)	(0.0400)	(0.0401)	(0.0401)	(0.0395)	(0.0413)
Wife's age	−0.0064**	−0.0081	−0.0093	−0.0093	−0.0087	−0.0081
	(0.0030)	(0.0063)	(0.0063)	(0.0063)	(0.0062)	(0.0064)
Wife's education:						
Middle school and below	−0.4573***	−0.4091***	−0.4104***	−0.4108***	−0.3917***	−0.3735***
	(0.0926)	(0.1051)	(0.1052)	(0.1049)	(0.1003)	(0.0997)
High school	−0.2883***	−0.2529**	−0.2552**	−0.2555**	−0.2337**	−0.1991**
	(0.0920)	(0.1001)	(0.1002)	(0.1000)	(0.0944)	(0.0928)
Husband's age		0.0008	0.0006	0.0006	−0.0005	−0.0035
		(0.0056)	(0.0056)	(0.0056)	(0.0056)	(0.0058)
Husband's education:						
Middle school and below		−0.1590**	−0.1528**	−0.1525**	−0.1768**	−0.1850***
		(0.0698)	(0.0699)	(0.0700)	(0.0696)	(0.0672)
High school		−0.1021*	−0.0990	−0.0988	−0.1219**	−0.1521***
		(0.0610)	(0.0612)	(0.0612)	(0.0602)	(0.0568)
Ln (husband's income)		−0.0666***	−0.0667***	−0.0666***	−0.0757***	−0.0994***
		(0.0209)	(0.0209)	(0.0210)	(0.0207)	(0.0233)
Number of children			−0.0319	−0.0318	−0.0341	−0.0433
			(0.0305)	(0.0305)	(0.0321)	(0.0349)
Number of children under six			−0.0552	−0.0555	−0.0536	−0.0793
			(0.0498)	(0.0500)	(0.0493)	(0.0494)
Living with parents				0.0039	0.0167	0.0038
				(0.0491)	(0.0478)	(0.0475)
Wife's parents' education					yes	yes
Wife's religion					yes	yes
Wife's family income at 14					yes	yes
Region						yes
No. of observations	727	727	727	727	727	727
Pseudo R^2	0.0630	0.0773	0.0808	0.0808	0.1098	0.1576
Log likelihood	−410.31	−404.07	−402.55	−402.55	−389.82	−368.89

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. Models (1)–(6) use the same specifications as those reported in Table 1, except that the working status of the mother-in-law is substituted with the working status of the wife's own mother. The dependent variable is the participation indicator of the wife. The "mother worked" variable represents the employment status of the wife's mother when the wife was 14. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Wife's religion" is a set of dummies on religion. "Wife's family income at 14" is a set of dummies for the wife's self-assessed ranking of her family in society when she was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

5.1. Potential omitted variables

The positive relationship between the working behavior of the wife and her mother-in-law may be attributed to omitted variables. A woman who is more inclined to participate in the labor market may also be more likely to choose a husband with a working mother. In other words, if women in the labor force have systematically different characteristics, such as ambition and skills, from those not in the labor force, and if these unobserved characteristics influence the formation of the marriage match and are correlated with the former employment status of their mothers-in-law, then our estimates are contaminated by omitted variable bias.[24]

Women with their fathers-in-law

To address the concern on omitted variable bias, we use a woman's father-in-law as a falsification test. The key variable of interest is the working status of a man's father when he was 14. The reasoning is that if the unobserved characteristics of a woman that affect her labor market participation decision, such as ambition, are correlated with her mother-in-law's former working status through marriage matching, then for the same woman, those characteristics should also be correlated with the working status of her father-in-law. Therefore, if the significant and positive correlation between the working behavior of a woman and her mother-in-law is being driven by such unobserved characteristics, then this effect should also be positive and statistically significant for her father-in-law.

Table 7 shows the results of the falsification test. Columns (1) and (2) use data from the CGSS and the specifications of models (1) and (6) presented in Table 1, except that the working status of the father-in-law substitutes for the working status of the mother-in-law. In Column (3), we include the working status of both the mother- and the father-in-law. In all specifications, the coefficient on the father-in-law's working status is negative and insignificant. The coefficient on the mother-in-law's working status increases

[24] The key variable of interest in our analysis is the working status of the husband's mother when he was 14, and the dependent variable is the current participation indicator of the wife. Considering that these two variables are not contemporaneous, the unobserved characteristics of the wife should be less likely to be correlated with the former working behavior of her mother-in-law.

Table 9
Robustness test: mother-in-law with prestigious job(CGSS).

	(1)	(2)	(3)	(4)	(5)	(6)
Mother-in-law worked	0.1733***	0.1684***	0.1622***	0.1611***	0.1548***	0.1639***
	(0.0457)	(0.0459)	(0.0461)	(0.0462)	(0.0475)	(0.0503)
Mother-in-law with	−0.0245	−0.0264	−0.0169	−0.0153	−0.0004	0.0346
prestigious job	(0.0412)	(0.0414)	(0.0417)	(0.0416)	(0.0424)	(0.0523)
Wife's age	−0.0101***	−0.0016	−0.0018	−0.0008	0.0003	0.0020
	(0.0032)	(0.0060)	(0.0062)	(0.0062)	(0.0062)	(0.0062)
Wife's education:						
Middle school and below	−0.3678***	−0.3530***	−0.3310***	−0.3218***	−0.2858***	−0.3259***
	(0.0797)	(0.0913)	(0.0924)	(0.0932)	(0.0941)	(0.1020)
High school	−0.1446*	−0.1465*	−0.1392	−0.1338	−0.1049	−0.1328
	(0.0803)	(0.0859)	(0.0866)	(0.0876)	(0.0886)	(0.0965)
Husband's age		−0.0092*	−0.0089*	−0.0093*	−0.0087	−0.0118**
		(0.0053)	(0.0054)	(0.0054)	(0.0055)	(0.0054)
Husband's education:						
Middle school and below		−0.0711	−0.0656	−0.0653	−0.0680	−0.0573
		(0.0777)	(0.0779)	(0.0779)	(0.0800)	(0.0820)
High school		−0.0024	−0.0010	0.0002	−0.0002	0.0137
		(0.0674)	(0.0677)	(0.0672)	(0.0683)	(0.0716)
Ln (husband's income)		−0.0264	−0.0282	−0.0253	−0.0310	−0.0578**
		(0.0230)	(0.0224)	(0.0222)	(0.0226)	(0.0236)
Number of children			−0.0857**	−0.0862**	−0.0874**	−0.0930**
			(0.0359)	(0.0358)	(0.0367)	(0.0387)
Number of children under six			−0.0133	−0.0124	0.0052	−0.0095
			(0.0542)	(0.0543)	(0.0553)	(0.0544)
Living with parents				0.1134**	0.1042*	0.0946*
				(0.0553)	(0.0558)	(0.0564)
Husband's parents' education					yes	yes
Husband's religion					yes	yes
Husband's family income at 14					yes	yes
Region						yes
No. of observations	704	704	704	704	704	704
Pseudo R^2	0.1181	0.1253	0.1344	0.1398	0.1578	0.2227
Log likelihood	−373.72	−370.68	−366.82	−364.52	−356.91	−329.40

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. The variable "mother-in-law worked" represents the husband's mother's employment status when he was 14. "Prestigious job" is an indicator variable that equals 1 if the mother-in-law worked and her job position was at or above Zhengkeji when the husband was 14. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

slightly with the inclusion of the father-in-law's working status in Column (3) as compared to that in Column (6) of Table 1. In Columns (4)–(6) of Table 7, we use data from the CFPS to conduct the same falsification test and gain similar results. Although the coefficient on the father-in-law's working status is positive and significant in Column (5), it becomes insignificant once we include the working status of the mother-in-law in Column (6). The coefficients on the mother-in-law's working status are also similar in specifications with and without a control on the father-in-law's working status.

Women with their own mothers

Another way to address the concern of omitted variable bias is to test the relationship between the working behavior of a woman and her own mother. According to Fernández et al. (2004) as well as Morrill and Morrill (2013), the non-causality of the positive correlation between a married woman's participation and her mother-in-law's working behavior may be attributed to assortative mating. Specifically, they argue that the relationship between the woman and her mother-in-law may be caused by the daughter-in-law's own preference that was formed before selecting a spouse; her preference regarding labor force participation might actually be influenced by the former working behavior of her own mother. This alternative explanation implies that the positive correlation found in the cross-sectional data is the outcome of an alternative channel: women are first influenced by their own working mothers and form their preferences toward participating, then select their spouses who were also raised by working mothers.

To test this alternative, we use a sample of married female respondents from the 2010 CGSS. All six specifications in Table 1 are estimated, with mother-in-law's former working status replaced by the woman's own mother's former working status when she was 14 years old. We include the same control variables in the regressions, except that we control for the wife's own family background characteristics instead of the husband's in Columns (5) and (6). The estimation results in Table 8 indicate that the working behavior of a woman's own mother is not significant in explaining the woman's participation decision. The insignificance

of the employment status of women's own mothers on their participation decision is perhaps surprising, but it is consistent with the findings of Fernández et al. (2004), who used data from the US, and Bütikofer (2013), who used data from Switzerland.

The CGSS lacks simultaneous information on the parents of both the husband and wife.[25] But the CFPS has personal identifiers for each household member, and we can link the husband and wife for each married couple. Therefore, the data set contains detailed information on the background variables of both the husband and wife. In Column (7) of Table 2, we control simultaneously for mother-in-law's and own mother's former working status. The coefficient on mother-in-law's working status remains significant at the 5% level, but the working behavior of the wife's own mother is not significant in explaining the wife's participation behavior. Taken together, these results help us reject the possibility that the positive correlation is *entirely* driven by assortative matching in the working behavior of the husband's and the wife's mothers.

5.2. Alternative hypotheses

The two mechanisms we examined, the preference channel and the household productivity channel, both primarily work via the mothers' influence on their sons. Next, we consider certain alternative hypotheses. Specifically, we investigate if a working mother-in-law could directly affect the labor market participation choice of her daughter-in-law.

One alternative mechanism is that married women may receive direct assistance from their mothers-in-law regarding their labor market performance if their mothers-in-law have former working experience. The direct assistance could be in the forms of, but is not limited to, providing career advice, offering tips on how to balance career and family, and sharing networks. Thus, if a woman has a working mother-in-law, she is more likely to participate in the labor market. This mechanism does not work through the mothers' influence on their sons, but rather focuses on the direct relationship between the wife and her mother-in-law.

If the mother-in-law's effect on the wife's participation decision partially results from the fact that mother-in-law's former work experience can enhance her abilities to help the labor market participation of the wife, those mothers-in-law in prestigious jobs should exert an additional positive effect. This hypothesis is based on the assumption that people in prestigious jobs can offer better career assistance. In the CGSS data set, there is a question regarding the job position of the respondent's mother when the respondent was 14. Based on this information, we generate the indicator variable "prestigious job," which equals 1 if the mother-in-law worked and her position was at or above section-head level (*Zhengkeji*) when the husband was 14.[26] We include this indicator variable and re-estimate the model specifications in Table 1. If the hypothesis is true, we should expect a positive and significant estimate for the "prestigious job" indicator. Table 9 shows the results. The estimates indicate that having a mother-in-law with a prestigious job is not always positively correlated with the woman's labor force participation, and this effect is statistically insignificant in all specifications. These results provide suggestive evidence that the channel of career assistance is unlikely to be responsible for the positive correlation between mother-in-law's work experience and wife's participation decision.

Another approach to test the potential career assistance channel is to examine the relationship of the working behavior between women and their own mothers. If women of the next generation can benefit from the work experience of their predecessors, then women's own mothers should have a greater incentive to provide such assistance. Accordingly, if the career assistance mechanism exists and is the major underlying mechanism, we should observe a positive and significant correlation between the current participation status of the daughter and the former employment status of her own mother. The regression results in Table 8 therefore render additional evidence against the potential career assistance mechanism.

The results in Table 7 can also provide supplementary support for us to rule out the direct career assistance mechanism. Specifically, if the former work experience of parents is directly helpful for the participation of the next generation, the estimated coefficient of a working father-in-law should also be positive and significant. However, those estimates are statistically insignificant. In closing, the above evidence indicates that women's labor force participation is not primarily driven by career assistance directly from their mothers-in-law.[27] We conclude that mothers-in-law's influence on their sons is the major underlying mechanism that drives the positive correlation between married women's participation decision and their mothers-in-law's work experience.

6. Conclusions

This study examines the effect of social norms on female labor force participation in urban China. We present evidence that the cross-section results of the positive correlation between the labor force participation probability of a married woman and the former

[25] In Table 1, we study wives of a sample of married men in the CGSS, who reported their mothers' former working status; whereas in Table 8, we examine a sample of married women, who reported their own mothers' former working status. However, we do not observe the former working status of both the husband's mother and the wife's mother in the CGSS.

[26] A regimented rank system is used for Chinese civil servants and other personnel in the state sector. Ranks determine the level of benefits for which people are eligible and serve as a rough order of precedence. The current system has 27 ranks to reflect seniority. The section-head level (*Zhengkeji*) corresponds to the 19th and 20th ranks in the system. Examples of officials at the section-head level include town party secretary, town mayor, or head of sub-divisions of a prefecture-level department.

[27] Instead of actual career assistance in some form, a working mother-in-law might prefer a working woman to be her daughter-in-law, and this preference could have both ex ante or ex post effects on the wife's participation status. As the career assistance channel, this mechanism is also concerned with the mother-in-law's direct influence on the wife's participation decision instead of her influence on the wife via her son. Unfortunately, the relevant data sets do not include any information concerning the preference of the mother-in-law, so we cannot directly test this potential underlying mechanism. Existing evidence indicates that Chinese parents tend to have limited influence on their children's spousal choices. In the 2006 wave of the CGSS, when individuals were asked how much influence their parents had on their marriages, only 8.3% of them reported that their parents had significant influence on their spousal choices.

work experience of her mother-in-law obtained in Fernández et al. (2004) can also be found in Chinese data despite the large differences in cultural and institutional background. Our results indicate that the work experience of a man's mother influences his attitude toward having a working wife and potentially makes him a better partner. Specifically, we show that men raised by working mothers are significantly less likely to agree with statements on traditional gender roles than men raised by non-working mothers. We also show that the self-reported happiness level of a married man who grew up in a family with a working mother is affected positively by his wife's contribution to household income, whereas the effect is insignificant for men who grew up in a family with a non-working mother. This difference is interpreted as an indication of diverse preferences between these two types of men. We also demonstrate that married women whose husbands grew up in a family with a working mother spend significantly less time on household chores compared to married women whose husbands grew up in a family with a non-working mother. We argue that growing up with a working mother may have changed a man's attitude toward engaging in housework and thus made him a better partner for working women. Taken together, we present evidence that the role model who men have in their early life determines their preferences and attitudes, which in turn influences social norms and the labor market behavior of women.

As suggested by Fernández et al. (2004), a decrease (or an increase) of the proportion of men raised by working mothers can have dynamic implications on women's labor supply because it renders working less (or more) attractive to women in the next generation.[28] Such an intergenerational mechanism is potentially at work in China. Female labor force participation declined drastically in the 1990s along with economic reforms and other social economic changes. Based on our theory and cross-sectional evidence, as more men have been raised by non-working mothers, economic reforms and other factors may have lingering effects on the labor supply behavior of younger women in the next generation even as their direct effect on older women fades over time.[29] An important topic for future research is the extent to which the continuing decline in female labor force participation in urban China can be explained by the change in social norms identified in this paper.

Appendix

Table A.1
Descriptive statistics from 2010 CGSS and 2012 CFPS.

Variable	2010 CGSS	2012 CFPS
Wife participated in the labor market	0.71	0.80
	(0.45)	(0.40)
Mother-in-law worked	0.76	0.74
	(0.43)	(0.44)
Wife's age	40.18	40.34
	(5.69)	(6.04)
Wife's education (%)		
Middle school and below	37.93	43.07
High school	52.84	45.21
University and above	9.23	11.72
Husband's age	42.45	42.18
	(6.37)	(6.71)
Husband's education (%)		
Middle school and below	29.12	39.12
High school	58.24	46.56
University and above	12.64	14.32
Ln (husband's income)	10.12	10.16
	(0.92)	(0.98)
Husband's father's education (%)		
Middle school and below	81.25	79.71
High school	15.63	16.91
University and above	3.13	3.38

(*continued on next page*)

[28] The large number of women that entered the US labor force during World War II has been used to account for the increase in labor force participation of women in the next generation (Fernández et al., 2004; Morrill and Morrill, 2013)

[29] Our theory implies that, everything else being equal, provinces in which there are more married women working will have greater female labor supply in the next generation. We use the 1990 and 2005 census data to examine the relationship between female labor supply behaviors over time by running the following regression:

$$E_{ip2005} = X'_{ip2005}\beta_1 + Z'_{p1990}\beta_2 + \alpha_1 E_{p1990} + \varepsilon_{ipt},$$

where E_{ip2005} is the labor force participation of a 20–25 year-old woman in province p in 2005. X_{ip2005} is a set of individual characteristics, Z_{p1990} is a set of province characteristics such as GDP per capita and service share in 1990, and E_{p1990} is the average employment rate of women 30–35 years old in 1990 in province p. The coefficient α_1 is estimated to be positive and statistically significant (1.118 with a standard error of 0.336). The positive correlation provides suggestive evidence that favors our hypothesis. But an important limitation of this exercise is that we are unable to identify an exogenous source of variation in the female employment rates across provinces.

Table A.1 (*continued*)

Variable	2010 CGSS	2012 CFPS
Husband's mother's education (%)		
Middle school and below	88.35	90.76
High school	10.65	8.34
University and above	0.99	0.90
Father-in-law worked	0.98	0.88
	(0.12)	(0.32)
Number of children	1.20	1.18
	(0.53)	(0.52)
Number of children under six	0.16	0.19
	(0.39)	(0.41)
Living with parents	0.14	0.27
	(0.35)	(0.45)
Number of observations	704	887

Table A.2
Descriptive statistics for the full samples from 2010 CGSS and 2012 CFPS.

Variable	2010 CGSS		2012 CFPS	
	Mean	*N*	Mean	*N*
Wife participated in the labor market	0.70	913	0.79	1335
	(0.46)		(0.41)	
Mother-in-law worked	0.75	882	0.72	1335
	(0.43)		(0.45)	
Wife's age	40.53	913	40.69	1335
	(5.78)		(5.98)	
Wife's education (%)				
Middle school and below	38.23	913	47.12	1335
High school	52.68	913	43.74	1335
University and above	9.09	913	9.14	1335
Husband's age	42.97	913	42.73	1335
	(6.55)		(6.78)	
Husband's education (%)				
Middle school and below	30.48	912	44.27	1335
High school	57.46	912	44.57	1335
University and above	12.06	912	11.16	1335
Ln (husband's income)	10.12	781	10.15	956
	(0.92)		(0.98)	
Husband's father's education (%)				
Middle school and below	80.83	892	81.52	1288
High school	15.92	892	15.76	1288
University and above	3.25	892	2.72	1288
Husband's mother's education (%)				
Middle school and below	88.47	893	91.68	1310
High school	10.52	893	7.63	1310
University and above	1.01	893	0.69	1310
Father-in-law worked	0.98	863	0.86	1335
	(0.13)		(0.35)	
Number of children	1.21	901	1.23	1335
	(0.57)		(0.55)	
Number of children under six	0.14	913	0.18	1335
	(0.37)		(0.41)	
Living with parents	0.15	913	0.27	1335
	(0.36)		(0.44)	

Note: Sample restricted to married men whose wives are from 30 to 50 years old, have urban Hukou, and are not business employers or self-employed.

Table B.1
Probit regressions of wife's employment status on her mother-in-law's working behavior(CGSS).

	(1)	(2)	(3)	(4)	(5)	(6)
Mother-in-law worked	0.1357***	0.1305***	0.1292***	0.1285***	0.1307***	0.1525***
	(0.0414)	(0.0415)	(0.0416)	(0.0415)	(0.0422)	(0.0461)
Wife's age	−0.0094***	−0.0014	−0.0018	−0.0010	0.0011	0.0014
	(0.0033)	(0.0062)	(0.0064)	(0.0064)	(0.0064)	(0.0065)
Wife's education:						
Middle school and below	−0.4514***	−0.4392***	−0.4233***	−0.4162***	−0.3744***	−0.4000***
	(0.0849)	(0.0966)	(0.0979)	(0.0984)	(0.0993)	(0.1082)
High school	−0.2070**	−0.2081**	−0.2031**	−0.1995**	−0.1689*	−0.1929*
	(0.0848)	(0.0903)	(0.0909)	(0.0918)	(0.0929)	(0.1013)
Husband's age		−0.0087	−0.0086	−0.0089	−0.0091	−0.0104*
		(0.0055)	(0.0056)	(0.0056)	(0.0056)	(0.0057)
Husband's education:						
Middle school and below		−0.0547	−0.0521	−0.0531	−0.0592	−0.0625
		(0.0799)	(0.0805)	(0.0804)	(0.0827)	(0.0862)
High school		−0.0018	−0.0016	−0.0013	−0.0101	−0.0068
		(0.0681)	(0.0685)	(0.0681)	(0.0693)	(0.0732)
Ln (husband's income)		−0.0191	−0.0208	−0.0184	−0.0266	−0.0414
		(0.0240)	(0.0236)	(0.0235)	(0.0240)	(0.0258)
Number of children			−0.0596	−0.0594	−0.0608	−0.0597
			(0.0375)	(0.0375)	(0.0381)	(0.0401)
Number of children under six			−0.0241	−0.0249	−0.0076	−0.0171
			(0.0568)	(0.0573)	(0.0581)	(0.0560)
Living with parents				0.0893	0.0811	0.0853
				(0.0569)	(0.0575)	(0.0581)
Husband's parents' education					yes	yes
Husband's religion					yes	yes
Husband's family income at 14					yes	yes
Region						yes
No. of observations	704	704	704	704	704	704
Pseudo R^2	0.1113	0.1157	0.1200	0.1231	0.1420	0.1870
Log likelihood	−395.31	−393.33	−391.43	−390.04	−381.62	−361.62

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the employment indicator of the wife. The variable "mother-in-law worked" represents the employment status of the husband's mother when he was 14 years old. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

Table B.2
Probit regressions of wife's participation status on her mother-in-law's working behavior(robustness check with CGSS extended sample).

	(1)	(2)	(3)	(4)	(5)	(6)
Mother-in-law worked	0.2418***	0.2167***	0.2133***	0.2129***	0.2115***	0.1692***
	(0.0243)	(0.0251)	(0.0259)	(0.0259)	(0.0262)	(0.0279)
Wife's age	−0.0118***	−0.0058**	−0.0108***	−0.0106***	−0.0108***	−0.0104***
	(0.0008)	(0.0029)	(0.0030)	(0.0030)	(0.0030)	(0.0031)
Wife's education:						
Middle school and below	−0.3315***	−0.4340***	−0.4281***	−0.4290***	−0.4127***	−0.4785***
	(0.0607)	(0.0734)	(0.0771)	(0.0778)	(0.0801)	(0.0858)
High school	−0.2792***	−0.3227***	−0.2999***	−0.3007***	−0.2875***	−0.3240***
	(0.0623)	(0.0705)	(0.0740)	(0.0747)	(0.0767)	(0.0820)
Husband's age		−0.0075***	−0.0084***	−0.0083***	−0.0083***	−0.0082***
		(0.0028)	(0.0029)	(0.0029)	(0.0029)	(0.0029)
Husband's education:						
Middle school and below		−0.0235	−0.0468	−0.0474	−0.0474	−0.0466
		(0.0546)	(0.0556)	(0.0556)	(0.0563)	(0.0596)
High school		−0.0106	−0.0357	−0.0355	−0.0342	−0.0275
		(0.0510)	(0.0521)	(0.0521)	(0.0525)	(0.0562)
Ln (husband's income)		−0.0823***	−0.0823***	−0.0817***	−0.0833***	−0.0682***
		(0.0108)	(0.0111)	(0.0110)	(0.0110)	(0.0118)
Number of children			0.0331***	0.0335***	0.0317***	0.0233**
			(0.0105)	(0.0105)	(0.0105)	(0.0111)
Number of children under six			−0.2639***	−0.2681***	−0.2681***	−0.2822***
			(0.0275)	(0.0278)	(0.0279)	(0.0291)

(*continued on next page*)

Table B.2 (*continued*)

	(1)	(2)	(3)	(4)	(5)	(6)
Living with parents				0.0394	0.0390	0.0334
				(0.0287)	(0.0287)	(0.0294)
Husband's parents' education					yes	yes
Husband's religion					yes	yes
Husband's family income at 14					yes	yes
Region						yes
No. of observations	3310	3310	3310	3310	3310	3310
Pseudo R^2	0.1073	0.1245	0.1474	0.1479	0.1525	0.1935
Log likelihood	−2036.43	−1997.12	−1944.95	−1943.92	−1933.34	−1839.71

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. The variable "mother-in-law worked" represents the employment status of the husband's mother when he was 14 years old. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Husband's religion" is a set of dummies on religion. "Husband's family income at 14" is a set of dummies for the husband's self-assessed ranking of his family in society when he was 14. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

Table C.1
Probit regressions of wife's participation status on her husband's share of housework time(CFPS).

	(1)	(2)	(3)	(4)
Husband's share of housework time	0.2636***	0.2946***	0.2414***	0.2477***
	(0.0728)	(0.0752)	(0.0761)	(0.0766)
Wife's age	−0.0033	0.0064	0.0089	0.0089
	(0.0028)	(0.0056)	(0.0061)	(0.0061)
Wife's education:				
Middle school and below	−0.3277***	−0.2964***	−0.2919***	−0.2947***
	(0.0461)	(0.0533)	(0.0543)	(0.0547)
High school	−0.2383***	−0.2163***	−0.2210***	−0.2276***
	(0.0498)	(0.0527)	(0.0531)	(0.0538)
Husband's age		−0.0093*	−0.0088*	−0.0089*
		(0.0050)	(0.0052)	(0.0052)
Husband's education:				
Middle school and below		−0.0220	−0.0101	−0.0023
		(0.0496)	(0.0511)	(0.0515)
High school		−0.0464	−0.0409	−0.0293
		(0.0486)	(0.0499)	(0.0501)
Ln (husband's income)		0.0149	0.0083	0.0092
		(0.0183)	(0.0186)	(0.0186)
Number of children			−0.1282***	−0.1297***
			(0.0375)	(0.0374)
Number of children under six			0.0200	0.0182
			(0.0389)	(0.0391)
Living with parents			0.0605*	0.0607*
			(0.0343)	(0.0342)
Region			yes	yes
Wife's parents' education				yes
No. of observations	865	865	865	865
Pseudo R^2	0.0758	0.0817	0.1058	0.1099
Log likelihood	−494.07	−490.93	−478.06	−475.87

Note: Robust standard errors are reported in parentheses. We report the marginal effect of each variable. The dependent variable is the participation indicator of the wife. For educational attainment, the category "university and above" serves as the reference group. The dummy "living with parents" equals 1 if the married woman co-resides with her parents or her parents-in-law. "Region" refers to a set of provincial dummies. *significant at 10%, ** significant at 5%, ***significant at 1%.

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