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Household savings and present bias among Chinese couples: A household bargaining approach

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Abstract

Family savings is crucial to long-term wellbeing for all members in a household, particularly in a Chinese context where costs of living increasingly shift from government to individuals. Savings are typically examined as a balance of financial behaviors and spending preferences; however, this study highlights how savings in a family context is also a function of relationship status. Drawing on intra-household bargaining models, we analyze data from the 2014 China Family Panel Studies to examine the extent to which men's and women's relative power in the household explain variation in savings levels across families. Our findings indicate that women's greater bargaining positions (e.g., income and assets) correspond with greater savings for the family. However, such bargaining power constitutes a net negative for family savings when women have both greater relational power and higher spending preferences. We suggest that family savings can and should be understood as an outcome of dynamic bargaining conditions in addition to income factors.

KEYWORDS

China, gender differences, household bargaining, household savings, present bias, relationship power

1 | INTRODUCTION

Around the world, family savings constitutes one of the most important sources of long-term security, which enables households to effectively weather unforeseen crises and implement strategies toward family wealth accumulation. Household savings have significant ramifications for family financial health, including but not limited to old-age security, children's educational opportunities, and the physical and emotional health of family members. Typically, savings behaviors and outcomes are examined through a culmination of financial inputs (i.e., income and cost of living) and consumption preferences. However, family savings are distinct from individual savings in that it comprises the preferences and contributions of multiple partners and family members, situations in which savings outcomes are the manifestation of cooperation, bargaining, and at times conflict.

While savings worldwide have been declining in recent years, China stands apart with one of the world's highest savings rates ranging from 35% to 45%, compared to the global average of 20% (Zhang et al., 2018). Despite rapid national growth and development, concerns regarding financial security inform and reflect high savings preferences throughout the country (Choukhmane et al., 2023). The increase in savings rates in China is largely attributed to the increasing privatized burden of essential goods such as housing, education, and health care since 1978 (Chen et al., 2016; Mees & Ahmed, 2012). In addition, borrowings for housing, education, medical care, and other big expenses can be very challenging from China's financial market and banking system, due to expensive loans and elevated down payments (Mees & Ahmed, 2012). Due to these reasons, households' savings are integral to short- and long-term financial health for Chinese households. Hence, further unpacking and nuancing the determinants of household saving is of immense importance, particularly in China, which has gained considerable interest in scholarship (Lugauer et al., 2019).

As far as savings decisions are concerned, the extant literature shows that education, income, net worth, owning a home, having health insurance, and expecting higher future income are positively related to saving (Yuh & Hanna, 2010). Numerous studies have utilized institutional factors to investigate individual savings behavior. For example, in the U.S., Hogarth and Anguelov (2003) find that owning a bank account and having good credit history is positively related to savings. Among poorer respondents, the authors highlight that although there is a desire to save, institutional constraints such as accessibility to financial services, hinders one's ability to save (Hogarth & Anguelov, 2003). In China, some scholars suggest that the growth in economic opportunities would correspond with declining savings, derived from the precautionary motive premise that savings decline with enhanced job security and state support. However, such institutional advantages in China contradict that assertion, finding that savings increased despite those improvements (Wei & Zhang, 2011). Other studies emphasize that savings are a function of individual behavioral indicators, as those with higher levels of self-control are less likely to spend money on impulsive purchases (Ha, 2018).

While saving decisions related to individuals are extensively investigated, there are relatively few studies that examine patterns of savings with respect to household relations. This is a crucial gap in the literature because savings are both individually executed but collectively shared. A parallel branch of studies that examines financial decisions suggests that each partner may have different preferences, but individuals with more control in households typically dominate the decision-making process (Brunetti et al., 2014). Spouses with more economic resources are likely to exert influence on household decisions in favor of their preferences related to consequential financial decisions (Addoum, 2013; Babiarz et al., 2012; Kim et al., 2017; Yilmazer & Lyons, 2010).

Families often benefit more generally in cases where women have enhanced bargaining power within the family (Pangaribowo et al., 2019). For example, women with enhanced financial resources and education are more likely to have a significant say in important household decisions. Among families in China, children named after their mothers have relatively improved health and education outcomes (Li et al., 2021). A prevailing assumption in gender and development perspectives is that women's decision-making is positively linked with family well-being. Bargaining power in favor of women in China strengthens their influence on household consumption decisions including investments in children's education and clothing while decreasing the budget share of alcohol and cigarettes (Song, 2008). There is ample evidence of household relationships influencing financial decisions around the world; yet the patterns of family financial wellbeing and intra-household decision-making remains relatively underexplored in the Chinese context.

This research examines the extent to which family savings for the household is explained by the gender power behaviors within a partnership. Specifically, we examine whether the association between individual spending preferences, utilizing the concept of present bias, and family savings are attenuated by household bargaining power. This study draws on the intra-household bargaining (IHHB) model to assess the impact of male and female partners' decision-making influence within the household. We hypothesize that household bargaining power directly relates to strategic decision-making. According to IHHB perspectives, household members with more individual ownership of resources have a significant advantage in meeting their consumption preferences, transposing their consumption and savings preference on the overall household. For that reason, the feminist economics literature emphasizes women's income and asset ownership as crucial to women's decision-making on behalf of themselves and the family. By examining the intersection of consumption preferences and bargaining power, we seek to highlight how gender and household power statuses can play a significant role in family financial health, net of specific income conditions.

We use the China Family Panel Studies (CFPS) data to test whether family savings, measured in total cash savings (1 USD = ¥6.0513, as of January 2014), is associated with an individual's level of present bias and their relative bargaining power in the household. The CFPS is a publicly available data and nationally representative for China. These data are a unique and rich data source that includes household-level information, adult rosters, and a financial knowledge module. The concept of present bias, one's willingness to consume now at the cost of future savings, is provided in the financial knowledge module, which was available for the 2014 survey. Because bargaining power is a central theme of this research, we limit our analytic sample to include only households with married partners ($N = 2121$). Bargaining power is measured along four dimensions: whether a woman earns more, less, or the same income; whether the woman has more, less, or the same education level; women's household decision-making levels; and whose name is on the deed of the home of residence. We analyze these data by running a series of linear regressions, using the Heckman Twostep procedure, as a significant number of households in these data have no cash savings at the time of the survey.

Our findings indicate that households in which women have greater bargaining power, in the form of relative income and homeownership tend to have higher savings in general. However, women's decision-making has a mixed relationship with family savings, particularly when evaluated simultaneously with men's and women's current spending preferences. A sub-group analysis of men's and women's present bias, separately, highlights how gender can play an important role in how preferences may be socially informed. Both men's and women's present bias is not significantly associated with family savings; however, we observe a significant

interaction between women's decision-making and their present bias. Women's present bias corresponds negatively with family savings when they are also primary decision-makers for the household. These findings suggest that women's ability to influence family savings and spending outcomes are conditional on their level of bargaining power.

This study makes several contributions to the literature. First, this study builds upon and extends prior research that has examined household savings in China (e.g., Chamon et al., 2013; Cristadoro & Marconi, 2012; Lugauer et al., 2019). Second, this study extends the intrahousehold bargaining framework by investigating the spending preferences of men and women, in the light of household relational statuses, including deed entitlement, relative income of spouse, and decision-making power. Third, this study highlights the importance of understanding household statuses that may overrule individual spending preferences when predicting household savings. With the focus on Chinese context, we test the bargaining behavior to predict savings. Our findings, highlight new possibilities of studying the household bargaining status that can serve as a foundation for future research.

2 | LITERATURE REVIEW

2.1 | The context of China

Savings in China has become increasingly vital to both short-term and long-term stability, particularly given that the cost burdens have shifted significantly away from the state and to the individual (Niu et al., 2020). Previous generations were supported by substantial state support and lower costs for essential goods and services such as housing, medical care, and state pensions. However, a combination of rising costs and the decline of state interventions have made household financial stability more precarious (Banerjee et al., 2010). Family finances have particularly significant ramifications for all household members, given that the wellbeing of multiple generations depends on the financial health of the overall family unit. Older adults, who often live with their adult children, are typically dependent on their financial and caregiving support (Schulz & Eden, 2016). Families with children also face additional constraints as the cost of education has continually increased as couples with children are tasked with planning for the future wellbeing of their children and their adulthood transitions. For example, marriageability in China often depends on parental support in purchasing a home for young couples, a cost of entry into a marriage that can be out of reach for many families (Jalan & Ravallion, 1999; Wei & Zhang, 2011). The current period of relative uncertainty is theorized as one reason for rising household savings throughout the country (Chamon et al., 2013). While unitary models of the household may presume that household savings are equally beneficial to all members within the household, bargaining perspectives suggest that each member attempts to leverage their relative positions to achieve optimal conditions for themselves (Doss, 2013). In short, the benefits conferred to individuals as a result of overall family financial statuses can vary by numerous dimensions such as gender and family position in China (Song, 2008).

Gender inequality can have a profound impact on household savings behaviors and outcomes. Numerous studies across national and regional contexts find that men's and women's savings behaviors differ significantly due to gender gaps in income and occupational opportunities (Feng et al., 2019; Seguino, 2006; Seguino & Floro, 2003). Consequently, risk-taking propensities are often patterned along gender lines in which women are more frequently observed to take more cautious approaches to financial decisions (Seguino & Floro, 2003). Marriage

markets, especially in China, have an important role to play as well. According to Wei and Zhang (2011) there is a strong incentive for financial health for expanded opportunities in the marriage market. Increased pressure to compete is further exacerbated by the sex ratio (the number of men per woman) imbalance in China. In response to the competition with each other, families with sons tend to increase their savings rates. Families with daughters may still have significant motivations to save on behalf of a daughter for future marital stability and well-being. The reason for such decisions is the preference to enhance a daughter's bargaining position in their future marriages as the relative wealth level of the husband and wife can profoundly influence a member's bargaining position in the family.

Wei and Zhang (2011) show that, across provinces, local savings rates differ by regions and years in which the local sex ratio is higher, after accounting for local income, social safety nets, and age profiles. Costs of supporting children are also shown to differ by sex of the children, attributed to the socio-cultural norms that require a son's parents to bear higher financial burdens such as purchasing the home for the young couple (Brown & Park, 2002; Song, 2008). It is not surprising to observe that savings levels correspond strongly with income levels; however, decisions to save in China result from complex navigation of economic and social considerations.

2.2 | Intra-household bargaining framework

To date, most studies on the dynamics of savings emphasize individual conditions and preferences. However, only a few allude to social and relational factors that determine savings. Individual preferences vary from person to person within a household, as well as contributions, culminating in a compromised family savings decision. Many economic models of savings behavior examine the optimal behavior of a single individual who manages finances remainder of their life. However, such approaches make the assumption that savings behavior reflects a collaborative decision-making system that equally represents both husband and wife (Lundberg & Ward-Batts, 2000). The intra-household bargaining (IHHB) framework suggests that members within a family system utilize the resources and capabilities at their disposal to assert decision-making power over family resources (Bolt & Bird, 2003). Rather than depicting household utility as a uniform concept across all members, each member uses their own resources and capabilities to assert their preferences within the finite resource scheme of a particular family. Doss (2013) reviews existing evidence on intra-household bargaining in developing countries and defines intra-household bargaining power as one's comparative ability to exert influence over the other. Economic scholars have relied on several proxies to capture bargaining power between the couples in the household. Some of the common proxies are education (Handa, 1996), income (Hitczenko, 2016), and spousal age difference (Friedberg & Webb, 2006). Empirical literature has linked intrahousehold bargaining power and a variety of outcome measures such as family consumption (Bekemeier et al., 2012), allocation of household chores (Hersch & Stratton, 1994), asset allocation (Friedemann-Sánchez, 2006), education (Thomas, 1994) and children's outcomes (Duflo, 2003). Ultimately, household well-being is connected to bargaining behaviors among members, which can elevate or minimize the shared resources that are distributed among its members.

In a theoretically "competitive" environment in which each member attempts to activate their preferences through the use of their own resources, family savings behavior goes beyond inherently individual thought processes toward a more compromised orientation (Wang, 2014).

In various other contexts, family resources can be highly sensitive to the bargaining mechanisms within the household. In some cases, bargaining power does not translate into greater individual financial well-being. Gibson et al. (2006) find that among New Zealand couples, generous public pensions can disincentivize private wealth accumulation, evidenced by the negative association between bargaining power and household wealth. One U.S. study of older adults shows that individuals with more bargaining power, in the form of income, financial knowledge, and decision-making power, are more financially secure in widowhood (Grinstein-Weiss et al., 2015). Utilizing the Health and Retirement study, Lundberg and Ward-Batts (2000) find that the difference between the husband's education and the wife's education significantly lowers net worth after accounting for other household characteristics. Thus, greater bargaining power for men, in terms of their relatively higher education, corresponds negatively with a household's net worth.

In feminist economic literature, a prevailing assumption is that women's economic status translates to improved outcomes for families, including higher savings for both future security and human capital investments in children. Findings show that children's health and nutrition (Shroff et al., 2009), educational attainments, and socioeconomic success positively correlate with their mother's economic attainments (Pieters & Rawlings, 2020). These findings are mirrored in China, in which mother's education and income are more strongly linked with children's outcomes. In one example, mother's education corresponds with higher adolescent school enrollment and family resources for children in China (Cui et al., 2019). This raises an important question regarding gender and financial behaviors. While studies indicate that women are more likely to utilize family resources toward children's outcomes than men (Ringdal & Sjursen, 2021), such findings also imply gendered altruism that largely ignores women's individual preferences. Consumption preferences for individuals are not uniform, and the high level of variability in those preferences likely reflects a host of personal historical and economic circumstances and experiences. In particular, women often employ more conservative savings strategies by dint of their relative lack of economic opportunities worldwide (Fisher, 2015). Savings strategies reflect not merely the preferences of the individual, but also their foresight on their bargaining position in terms of economic resources.

In bargaining models, specific economic resources are seen as crucial to women's ability and willingness to act in their own personal best interests. Among low-income countries with few occupational opportunities for women, resources such as durable assets (i.e., home or land ownership) are highly valuable as fallback options for women in their bargaining positions (Doss, 2013). This supposes that women's independent access to wages or other sources of wealth enhances their capability to assert their preferences. For mothers whose primary role is a caretaker for young and older dependents, having access to such resources increases their bargaining position to press for more equitable terms or even outright decision-making power over a family's overall income (Doss, 1996). Thus, the financial choices of households in China are not only driven by institutional factors such as labor market risks and cost of asset market participation but also by differences in preferences (Cooper & Zhu, 2017).

Taken together, we posit that family savings are manifest outcomes defined by both a family's ability to save and the internal bargaining strategies that reflect *preferences* toward saving. In short, families not only navigate the external structures of opportunities and costs of saving, but also the varied, and sometimes conflicting, preferences for savings strategies. Thus, bargaining power distributions can frame the long-term strategies family units employ to decide on whether or how to plan financially. Theoretically, preferences are inherently individualized but the behaviors that actualize those preferences is determined by the decision-makers and the

relative resources that confer power to make such decisions (Grover & Chopra, 2017). As a result, we test whether men and women, with varying dimensions of bargaining power, predicts family savings net of other factors such as family income and place of residence.

2.3 | Bargaining and present bias

Understanding saving motives is highly relevant for predicting past and future trends of savings behavior (Bartzsch, 2008; Börsch-Supan & Lusardi, 2003; Chamon & Prasad, 2010). The existing literature suggests that savings behaviors operate in a tight balance of immediate consumption needs, personal preferences, and expectations of future financial conditions (Heckman & Hanna, 2015). Future expectations can significantly influence an individual's financial behaviors by framing the relative value of immediate consumption versus longer-term considerations. An individual's present bias, or hyperbolic discounting, defines the tendency to overemphasize present consumption relative to future consumption in a dynamically inconsistent manner (Laibson, 1997; O'Donoghue & Rabin, 1999). For example, younger individuals, with limited resources, may have shorter planning horizons and are more likely to save for basic needs than the higher life motives (Becker, 1996; Devaney et al., 2007; Xiao & Noring, 1994). Yet, savings behaviors do not necessarily reflect the current financial realities and overly optimistic expectations can motivate financially irrational consumption decisions. Scholarship shows that moderate and lower levels of self-optimism correspond with a reduced level of credit card debt and higher saving habits while over-optimism relates to irrational financial behavior (Puri & Robinson, 2007).

Ultimately, savings are not only a manifestation of one's ability to save, determined by the ratio of income and consumption, but also of an individual's consumption preferences and biases. While factors like incomes and rates of return play a crucial role in savings decisions, other factors such as individual behavior, preference, and bias make the outcome more complex (Clifton et al., 2020; NBER, 2016). Across studies, present bias is significantly associated with the lower retirement savings (Goda et al., 2019), higher credit card usage, reduced retirement planning, and current occupational decisions (Madrian & Shea, 2001). A 2014 study using the China Survey of Consumer Finances (Xiao & Porto, 2019) reiterates that present biased consumers are more likely to spend in the present and less inclined to save for the future. However, one underexplored aspect of present bias, within the high savings context of China, is the extent to which present biased decisions are likely to vary by gender. Bargaining power for women typically corresponds with enhanced well-being for the family unit, particularly children. However, such linkages may also be obscured by the condition that lower socioeconomic opportunities incentivize more cautious approaches to family finances, masking the preferences of each individual among various undercurrents of inequalities.

Financial behaviors and consumption preferences are ultimately individual characteristics, but scholars note that such preferences are patterned along gender lines (Fisher, 2010). Women tend to have higher savings preferences due to a number of economic and socialized conditions. Typically, women tend to save more than men in China; however, such differences also vary by socio-demographic contexts such as imbalanced sex ratios. For example, men in regions of male-biased sex ratios (more men than women) have stronger incentive to save more to stay "competitive" in the marriage market while simultaneously mitigating unmarried women's need to save due to financial expectations in for a future marriage (Wei & Zhang, 2011). However, Banerjee et al. (2010) also find that parents who had daughters as their eldest child accumulated higher savings in urban China, indicating that family savings strategies can operate similarly for both men and women in the marriage market.

The gender differences in household savings, depending on social contexts, indicates that savings for a family unit reflect particular configurations of individual circumstances and each members' own expectations for the future. Conditions of gender egalitarianism, both socially and financially, may afford women to act on more risk-taking preferences that may not be available to women in other areas. In this way, household bargaining models imply that household decisions are not the result of a single individual maximizing utility (Friedberg & Webb, 2006) but can also be shaped by the families' characteristics (e.g., decision-making control, relative income, number of dependents in family). The micro processes within household may adjust not only the savings preferences of wives and husbands (Kim et al., 2017) but also their capacities to translate those preferences into outcomes. Thus, the configurations of household power status and spending preferences can offer unique insights into how behaviors manifest. To that end, this study further examines how combinations of bargaining power and present bias correspond with family savings.

3 | METHODS

3.1 | Data

This research uses data from the 2014 China Family Panel Studies (CFPS), provided by the Institute of Social Science Survey (ISSS) at Peking University. This nationally representative data includes a number of individual modules including but not limited to financial conditions for individuals and family members, financial behaviors and knowledge, and other sociodemographic information. The full data consists of information from 3921 households in 25 provinces and special districts in China. The data was collected via a clustered sampling technique of individuals nested within households across provinces. Data files available for analysis include both micro-data for individuals and household level data. We merge household data with individual characteristics for family members.

In this study, we select a sub-sample of households along the following dimensions. First, the CFPS data includes an additional module on financial knowledge and behaviors. As a respondent's present bias is central to this analysis, we only include households which were administered the financial module ($N = 2514$). Secondly, we focus on married couples as the primary subject of analysis given the emphasis on bargaining power within relationships. This eliminates respondents who are single, widowed or divorced. Third, a number of households include multiple couples, most often family members who are related such as elderly parents or siblings. In this case, we eliminate households in which siblings share residence, but we do include households in which elderly parents reside. However, households in which elderly parents generate income are excluded from this analysis. Overall, the analytic sample of households, comprised of a primary working-age couples, amounts to ($N = 2121$) households in total. The sample largely consisted of the higher income group, which also corresponded to the sample with higher number of educated individuals.

3.2 | Measures

The CFPS data provides a substantial number of individual, family, and community level measurements of health and well-being metrics. In this study, we draw specifically from the data

for all relevant measures of family finance and household power indicators. Among the various data types, individual, family, and household, we construct a nested data format that keeps all available and pertinent measures for this study. The subsequent measures (Table 1) are as follows.

3.2.1 | Dependent variable

Savings

The dependent variable in this study is the households' overall savings, measured as total Yuan saved in cash. This measure is provided within the CFPS data, which is the total sum of cash savings. In these data, families report from zero to approximately 2,000,000 Yuan saved at the time of the survey. Given the wide range of savings values in these data, we log transform the savings measure to account for outliers and adjust the outcome to fit a more normal distribution. Thus, all coefficients are interpreted as percentage differences in savings. However, we also note that approximately 38% of our sample observations report having zero savings at the time of the survey, leading to a substantial loss of observations. One option included adding a fixed amount to all savings measurements in the analytic sample, ensuring that the log transformation does not exclude over a third of the sample. However, as will be detailed later in this section, we opt to utilize a Heckman two-step procedure to estimate our models, as we expect

TABLE 1 Descriptive statistics ($N = 2121$).

	Mean (%)	SD
Family savings (logged)	10.65	1.636
Family income (logged)	10.82	0.96
Elderly parents present	23	0.42
Urban resident	54	0.50
Number of children	1.97	1.09
Women's decision-making	34	0.47
Name on deed		
Not owned (ref)	31	0.45
Husband only	44	0.50
Wife-only	9	0.23
Joint	16	0.32
Relative income		
Woman earns less (ref)	31	0.46
Woman earns the same	59	0.49
Woman earns more	10	0.30
Relative education		
Wife has less (ref)	43%	0.50
Wife has the same	39%	0.49
Wife has more	17%	0.38

that the large class of observations with no savings may reflect a discrete difference in willingness and capacities to save. Overall, the analytic data include 1304 households which have some savings with the remaining 776 households that report no savings.

3.2.2 | Independent variables

Individual preference

Earlier, we note that the configuration of household bargaining power and individual consumption preferences may culminate in savings outcomes for families. Thus, we examine the variability in savings levels by a configuration of individual, household, and relational factors. Individual preference is operationalized as one's level of present bias. In the CFPS financial module, one household respondent is asked a series of financial knowledge and behavioral questions. The questionnaire asks three questions on a respondents' agreement with the following statements: (1) spending money makes me more satisfied than saving money, (2) I live in the present without considering the future, and (3) I spend money whenever we have it. Respondents rate their level of agreement on a five-point Likert scale ranging from (1 = totally inapplicable) to (5 = totally applicable). We construct a count measure of how many of the three items a respondent finds somewhat applicable and totally applicable. The resultant count measure ranges from zero (none of the statements are applicable) to three (all three statements are highly applicable).

One limitation to the CFPS financial module is that questions on knowledge and behaviors is limited to one household member. As a result, the measurement of present bias can only reflect the preferences of either the husband or wife. In the analyses, we include a measurement of whether it was the female (0) or male (1) partner who responds to the financial behavior questions. While this limits our capacity to assess both partners' preferences, we are able to make comparisons between men's and women's present bias associations with family savings across the sample. In our analyses, we include interactions of present bias counts and sex of the respondent.

Household bargaining power

Another set of indicators in this study consists of four measurements of relative bargaining power between partners. We examine several dimensions for women's economic empowerment corresponds with higher levels of family savings. First, we include a woman's relative level of income, which provides a useful insight into the relationship dynamics of the household (Ma & Piao, 2020). In the CFPS adult roster file, all adult members are asked for their annual incomes. We calculate women's relative incomes by first estimating the difference in incomes, subsequently categorizing all negative differences as women earning less than male partner (1), women earning the same as men (2), and women earning more than men (3). We use a similar approach to constructing a measure for women's relative education which also indicate decision-making authority for family well-being (Thomas, 1994).The adult roster information includes both men's and women's educational attainment in ordinal scale levels of education from illiterate to graduate degree. Calculated differences culminate into three categories of women having less education (1), women have the same educational attainment (2), and women having more education (3). Analyses which include these relative socioeconomic levels treat women's lower status as the reference group.

As noted earlier, home ownership is one of the most important sources of wealth in China, particularly in urban areas. The CFPS identifies who owns the household by linking whose

name is on the deed to the home by their person identification number. We match each person ID to the individual characteristics of each household member and identify whether the house is not owned by either person in the partnership (1), the house is owned solely by the male partner (2), the house is owned solely by the female partner (3), or the house is owned jointly by both (4). The analyses treat non-ownership as the reference category.

Lastly, we measure another dimension of bargaining power in the form of household decision-making (Ringdal & Sjursen, 2021). In the CFPS, respondents are asked who makes the decision on five separate family issues which include: (1) family expenditure, (2) family insurance, savings, and investment, (3) family real estate, (4) children's education, and (5) large expenditures such as refrigerator, furniture sets, and air conditioner. The household respondent responds whether they or their partner make the final decision on the above items. In these analyses, we construct a count measure of the number of decisions are made by women, which can range from 0 to 5 in these data.

Control variables

Lastly, we include a number of economic and sociodemographic control variables to account for other extraneous factors that determine a family's savings. Our models include a logged transformed measure of total family income. Moreover, certain household composition characteristics can have a profound impact on the motivations and capabilities for savings behaviors as well as consumption preferences (e.g. present bias). Thus, we include the number of children currently living with the couple as well as the current residence of elderly parents of either partner. The number of children can have a significant influence on savings motivations, particularly in the realm of future marriageability and long-term educational investments. Moreover, the presence of elderly parents, coded as a binary (No = 0, Yes = 1) constitutes a potential source of bargaining power, though perhaps more indirectly. Elderly parents can be a source of support for either couple member in areas of disagreement and parental authority can be both a source of legitimacy or area of contention (Klein & Milardo, 2000). Lastly, we include a binary measure for urban and rural residence to account for the large differences in socioeconomic conditions across China. Our model assumes that the saving of the household is the function of bargaining preferences and household spending preferences.

3.3 | Empirical strategy

Our dependent variable is only observable in the analyses when the family has at least some savings, given the log transformation. Moreover, the savings variable has a significant negative skew, reflecting a sizable number of households with no savings in these data. However, numerous variables of interest, such as family income, men's and women's relative bargaining power, and spending preferences may also impact the likelihood of a family's saving strategy, specifically whether savings is even possible. Thus, there is a potential self-selection issue that would arise from only including families with some savings as families with savings may over-represent conditions with more egalitarian bargaining or higher family income statuses. The consequent self-selection can bias the relationship between bargaining positions and family savings. To correct for this potential self-selection bias, we utilize a Heckman two-step procedure in these analyses.

The Heckman two-step corrects for conditions in which zero-inflated data, which may represent an initially distinct barrier to achieving any level of an outcome, can bias coefficient

estimates. There is a strong possibility of omitted variable bias when not accounting for differences between those who do and do not have any observed outcome. While one approach is to limit the sample to only households with some savings, we opt to include all households regardless of savings levels as bargaining behaviors and outcomes can occur across all households in the socioeconomic spectrum. In the Heckman two-step procedure, the models are conducted by running a first-level nested model of who does or does not have any savings. Subsequently, that instrument is added into the second-level model to estimate overall predicted savings, controlling for the factors that correlate among households that have no savings versus those that have any savings. To estimate the Heckman two-step selection model, we include four additional variables in the first stage that are not included in the second stage model. We include the man and woman's age (in single years) as well as the man and woman's education degrees in the first stage. A significant Mills Inverse Ratio (lambda) is observed in all models, supporting the appropriateness of the Heckman two-step procedure. All analyses are conducted using Stata 15 and the models shown are the results from the prediction models.

Accordingly, we define our model as following:

$$z = f(B_i, \mathrm{SP}_i, \mathrm{HF}_i), \tag{1}$$

Where "z" refers to household savings for household "i" and is predicted as a function of bargaining conditions of the household (B_i), spending preferences of the household respondent (SP_i), and household financial statuses (HF_i) that are likely to affect resources being diverted into family savings. In these models, bargaining conditions (B_i) represents the vector of relational statuses between partners including relative earnings, relative education, name on the deed, and decision-making. Spending preferences (SP_i) includes the measurement of individual spending preferences, distinguished between men's and women's responses. Lastly, household financial statuses (HF_i) consists of household-level conditions that facilitate savings such as the presence of children and elderly parents, total family income, and urban residence. Overall, the full Equation (1) is expressed as follows:

$$z(B_i, \mathrm{SP}_i, \mathrm{HF}_i) = \beta_{B_i} + \beta_{\mathrm{SP}_i} + \beta_{\mathrm{HF}_i} + \gamma. \tag{2}$$

The prediction of family savings (z) is the additive cumulation of the vector of household bargaining conditions, spending preferences, household financial status, and the instrument (γ) which is the result of the Heckman two-step procedure to account for the large number of households with zero savings.

4 | RESULTS

Figure 1, in which we display savings in Yuan, shows that households savings differ by men's and women's raw present bias scores. For households with female respondents on the financial knowledge questionnaire, increasing levels of women's present bias (ranging from 0 to 3) shows higher levels of family savings as a whole. In contrast, households in which men have higher levels of present bias tend to have lower overall savings. These descriptive averages indicate that men's and women's present bias correspond inversely with the family's total savings. One notable difference is that households in which women have higher levels of present bias tend to live in households with higher incomes, contrary to higher present bias among male respondents

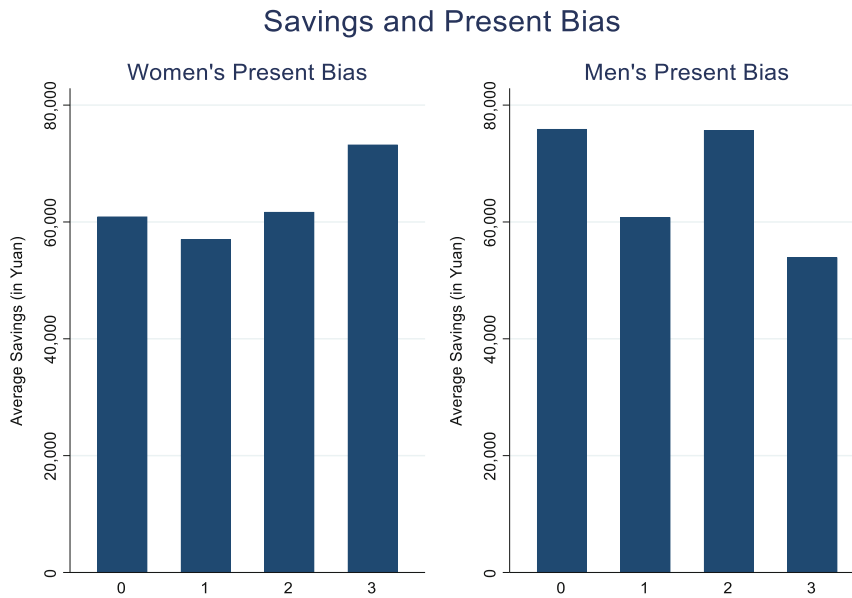

FIGURE 1 Men's and women's differences in present bias by savings.

which tend to have lower family incomes. It is plausible that the inverse nature of men's and women's present bias on savings is a function of gender differentials of how consumption preferences for women may reflect their sense of financial security.

Figure 2 highlights differences in savings outcomes along bargaining power dimensions. We show the average savings by home ownership, relative incomes, relative education, and women's decision-making in the household. We observe that average savings along bargaining dimensions is mixed. We do observe significantly higher savings among households where women are either the sole owner of the house or jointly own the house with their partners; however, the association between savings and relative educations is generally non-significant. We also note that households where women are either sole or part owners live in homes with significantly higher family incomes. As these data are cross-sectional, we are unable to distinguish whether women tend to have more bargaining power due to family affluence or whether their higher bargaining power facilitates household wealth. However, the descriptive averages do suggest that family wealth and women's bargaining power are positively correlated.

In Table 2, we further examine the associations between family savings (logged) and all covariates used in this research. Expectedly, family income (0.3916) is positively and significantly correlated with family savings. Moreover, the number of children is negatively correlated with family savings (−0.1000). Similar to the figures shown, women's bargaining power, in the form of home ownership and relative income, are positively and significantly correlated with family savings. However, the bivariate correlation coefficients along all bargaining dimensions are generally weak, with only the joint-ownership group correlated above 0.1.

Table 3[i] presents the regression models using the Heckman two-step procedure. Across all five models, the Inverse Mills Ratio (lambda) is significant, indicating the appropriateness of the Heckman procedure. Beginning with Model 1, we test whether household bargaining positions correspond with increases in logged family savings. Bargaining power is measured along four dimensions: women's household decision-making, name on the deed to residential home,

FIGURE 2 Bargaining power by savings.

women's relative earnings, and women's relative education. We do not observe any significant association between women's majority decision-making and logged savings. However, relative to those who do not own the home, we find that households in which women solely (coef. = 0.47) or jointly (coef. = 0.34) own the home are associated with higher savings, holding all else constant. Similarly, households in which women earn the same amount as men, relative to women who earn less, savings are 34% higher (coef = 0.34). We do not observe any significant differences in savings along relative education categories. In regard to control factors, family income significantly associates with savings in which a 1% increase in family income corresponds with a 95% increase in savings ($e^{0.67} = 1.95$). We also observe that the presence of elderly parents and children are both negatively associated with family savings. Taken together, these results indicate that women's bargaining positions correspond positively with family savings, holding family income and family composition factors constant.

Another major focus of this research is the intersection of individual spending preference and whether such attributes are affected by bargaining power in the household. In Model 2 and Model 3, we first examine whether men's present bias attitudes correspond with family savings. As a reminder, models which include present bias only contains a subsample of households in which the respondent for the financial literacy module is either male or female. In these models, we do not find a significant association between men's present bias and savings. In the households in which men respond to the financial literacy module (Model 3), we find that home ownership in general is significantly and positively associated with family savings when including men's present bias in the models. However, families in which women are the sole owner or joint owner of the house correspond with higher levels of savings in Model 3. Accounting for men's present bias, we find that husband's sole ownership corresponds with 30% higher savings, women's sole ownership corresponds with 53% higher savings, and joint ownership of the household corresponds with 65% higher savings, all relative to non-ownership. We also observe in Model 3 that women's equal earnings are associated with 30% higher savings for the

TABLE 2 Correlations of all covariates on family savings.

	Family savings (logged)
Family income (logged)	0.3916***
Elderly parents present	−0.0468
Urban resident	0.0778
Number of children	−0.1000***
Women's decision-making	0.0219
Name on deed	
Not owned	−0.1159***
Husband only	−0.0486
Wife-only	0.0957***
Joint	0.1303***
Relative income	
Woman earns less (ref)	−0.0636*
Woman earns the same	0.0543*
Woman earns more	0.0070
Relative education	
Wife has less (ref)	−0.0159
Wife has the same	0.0090
Wife has more	0.0082

Note: This table presents the correlation between covariates of the family savings. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

family. An additional component of Model 3 includes the interaction between men's present bias levels and women as primary decision-makers. We find no significant association for either present bias or women's decision-making in the interaction, suggesting that men's present bias has little to no association with family savings.

In Models 4 and 5, we analyze women's present bias associations with family savings. Model 4 shows no significant association of women's present bias and family savings. However, in Model 5, which includes bargaining positions and the present bias and decision-making interactions, we observe the following. First, the main effect of present bias for women is significant and positive, indicating that each unit increase in present bias scores correspond with 18% higher savings levels. However, that positive association between women's present bias and savings is conditional for women who make few to no decisions. When women themselves are primary decision-makers, the significant and negative interaction term (−0.23) suggests that each unit increase in present bias scores is associated with 23% lower savings. Thus, the positive association between women's present bias and savings applies to women with low decision-making power and is overridden among women with higher decision-making statuses. In terms of bargaining power, we continue to observe that women's home ownership is positively and significantly associated with family savings by approximately 43%. Women's same earnings, relative to lower earnings, is also positive and significant at 36% higher savings. One important, and unexpected, finding is that the negative association of family characteristics and family savings is only significant when including women's present bias, not observed for men's present bias in Models 2 and 3. We discuss these implications in the discussion.

TABLE 3 Linear regression results of savings (logged) on covariates using Heckman two-step procedure.

	Men			Women	
	Model 1 (without present bias)	**Model 2 (without interaction)**	**Model 3 (with interaction)**	**Model 4 (without interaction)**	**Model 5 (with interaction)**
Family income (logged)	0.67*** (0.09)	0.51*** (0.17)	0.55*** (0.16)	0.66*** (0.10)	0.68*** (0.10)
Elderly parents present	−0.23* (0.01)	−0.12 (0.15)	−0.02 (0.15)	−0.54*** (0.14)	−0.44*** (0.14)
Urban resident	0.28 (0.25)	−0.26 (0.44)	−0.23 (0.41)	0.61 (0.34)	0.69* (0.34)
Number of children	−0.12* (0.05)	−0.01 (0.08)	−0.06 (0.07)	−0.14 (0.10)	−0.24* (0.11)
Men's present bias (0–3)		−0.06 (0.05)	−0.07 (0.06)		
Women's present bias (0–3)				0.02 (0.05)	0.18* (0.09)
Women's decision-making	−0.06 (0.09)		−0.48 (0.20)		0.33 (0.20)
Interaction: Women's decisions × present bias			0.02 (0.14)		−0.23* (0.11)
Name on deed					
Not owned (ref)					
Husband only	0.15 (0.10)		0.30* (0.15)		0.04 (0.13)
Wife-only	0.47** (0.15)		0.53* (0.26)		0.43* (0.19)
Joint	0.34** (0.10)		0.65*** (0.18)		0.25 (0.18)
Relative income					
Woman earns less (ref)					
Woman earns the same	0.34*** (0.10)		0.30* (0.14)		0.36* (0.13)
Woman earns more	0.07 (0.12)		−0.15 (0.18)		0.23 (0.17)
Relative education					
Wife has less (ref)					
Wife has the same	0.07 (0.12)		0.11 (0.13)		0.06 (0.13)
Wife has more	0.05 (0.11)		0.15 (0.17)		−0.05 (0.15)
Lambda	−2.01*** (0.46)	−1.80*** (0.44)	−1.83*** (0.45)	−1.19** (0.41)	−1.24** (0.44)
Constant	3.11* (1.37)	6.77* (2.86)	5.49*** (2.69)	3.59* (1.62)	2.43 (1.63)
Selected	1331	635	635	657	657
Nonselected	790	790	790	789	790
Observations	2121	1425	1425	1447	1447

Note: This table presents the regression models using the Heckman two-step procedure. In all the models, we test whether household bargaining positions correspond with increases in logged family savings. Bargaining power is measured along four dimensions: women's household decision-making, name on the deed to residential home, women's relative earnings, and women's relative education. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

The above findings highlight the conditional nature of individual spending preferences on savings. In bivariate correlations, we find no significant correlation between logged family savings and present bias for either women ($r = 0.065$) or men ($r = -0.062$). However, women's increased levels of present bias manifests in conditions where women are also the primary decision-makers. However, women's enhanced bargaining power more generally corresponds with higher savings for the family overall, regardless of individual preferences.

4.1 | Robustness

Our analyses highlight the differing correspondences between family savings and gender differences in bargaining power and men's and women's consumption preferences. More specifically, when controlling for women's present bias, women's relative home ownership and their own higher statuses in income correspond positively with family savings. In the men's present bias subgroup, such households also show that joint ownership of the home is positively associated with family savings. Lastly, women's present bias, while corresponding positively with family savings generally, is negatively associated with family savings when they are also the primary decision-maker of the household.

One possibility for the findings is that the savings outcomes attributed to women's present bias is contingent on their capacity to act on their preferences, which is one explanation for the significant interaction for women but not for men. In an additional analysis (Table A1), we assess interactions with women's present bias and each of the other measures of bargaining power. Across the models, we observe no significant interaction for women's present bias and their relative income, education, and homeownership. Rather, those measures of bargaining power, with the exception of relative education, are independently associated with family savings but do not moderate present bias associations with savings for women. We take this to further suggest that women's consumption behaviors are more strongly tied to their direct decision-making capabilities rather than their relative economic statuses.

Another potential issue is whether women's present bias associations are framed by a family's motivation and capacity for savings. In particular, households with children or elderly parents likely face additional motivations, such as savings for future education and care, as well as placing considerable constraints on consumption patterns to meet conditions of a caregiving squeeze. In Table A1, we also include another set of models which assess the interactions of women's present bias by the number of children and the presence of elderly parents. We do find that there is a significant interaction between women's present bias and the number of children in which women's present bias corresponds with 23% lower savings without children. However, each additional child attenuates that association by 18%, which indicates that each additional child overrides the negative association between women's present bias and family savings.

5 | DISCUSSION AND IMPLICATIONS

This study examines whether the configuration of individual present bias and household bargaining power between couples in China explains patterns in household savings. We assess whether present bias for both men and women are conditioned on their relative bargaining power in the household. The results show that economic resources for women are positively associated with household savings, particularly when women solely or jointly own the home and women have relatively higher earnings. This suggests that women's entitlement to household assets is an important factor to household savings decisions. However, we also find a negative and significant interaction between women's decision-making power and their own present bias on household savings meaning that women's higher preference for current consumption is negatively associated with family savings in situations where women have greater power in the decision-making process. We interpret this as a manifestation of present bias effects as both shaped and being shaped by existing bargaining conditions. In addition, the variation of men's

and women's saving outcomes can be attributed to differences of gender-based bargaining statuses and its interplay with spending preferences.

In investigating savings in China, existing studies have found robust associations of the demographic determinants on household savings. For example, Curtis et al. (2015) note that demographic compositions such as family size can profoundly impact household savings outcomes and behaviors. Precautionary saving motive mechanisms may be particularly prevalent in China, attributed to the country's unique demographic, family size, and life-cycle environments (Choi et al., 2017). Similarly, Zhou (2014) finds that the decline in the average number of brothers in households, induced by population policies, is one explanation of increased aggregate household savings rates in urban China. Moreover, macroeconomic forces, such as pension reforms and the declining influence of Confucian norms of filial piety, parameterize individual and family financial behaviors (Chamon et al., 2013; Chen et al., 2019; Song et al., 2015). Much of the literature on savings in China has focused on factors including income predictability, underdeveloped financial market, and effect of house prices. However, the relatively limited study of bargaining behavior within Chinese family contexts constitutes a significant gap to a nuanced understanding of savings behaviors in China.

Our findings indicate that savings are higher among households where women either own the house solely or jointly with their partner. In this regard, existing research with a cross national perspective (involving Germany, Italy, the Netherlands, the United Kingdom, Japan and the United States) indicates that when women are landowners or own independent streams of income, they have a higher capacity for household decision-making (Börsch-Supan & Lusardi, 2003; Datta, 2006; Grover et al., 2020; Unni, 1999).

From our findings, relative deed entitlement can constitute a proxy measurement for family decision-making processes that define savings preferences. To date, there is little investigation into the role of deed entitlement as a determinant of savings in China. In a notable example, one study finds that individual-level transfers of property rights increase the individual's bargaining power within the household while transferring ownership rights to men corresponds with increased household consumption of some male-favored goods and women's time spent on chores (Wang, 2014). The extant literature in China emphasizes property rights but is limited in terms of household savings. This study contributes to literature by investigating deed entitlement as a proxy for household bargaining and savings outcomes for a family.

This study finds that households with women, whose earnings are equivalent to men, are associated with higher savings. This study echoes previous findings that observe savings are dependent on couples' relative income while similar earnings for men and women promotes increased financial and purchasing decision-making for women (Browning, 2000; Hitczenko, 2016). While there are numerous of criteria of household bargaining utilized in the literature, this study brings a novel perspective by introducing interaction of present bias and household bargaining status in explaining the saving levels of household. We demonstrate how family units may operate uniformly or perhaps competitively toward specific financial outcomes. Thus, family savings can be understood as a function of bargaining behavior while complicated by underlying spending preferences among partners.

The intersection of spending preferences and bargaining power offers both a psychological and contextual perspective to predicting household savings. Our study finds women's present bias is significantly and positively associated with family savings, though such findings are not consistent with men. However, households in which women have both higher present bias and decision-making power experience lower savings. In other words, present bias effects for women reflects both their preferences and their decision-making power. Prior studies indicate

that sole decision making can translate present bias into functional decisions. For example, when there is heterogeneity in the group responsible for making decisions, the choices correspond with increasing patience over time (Jackson & Yariv, 2014), while collective discount factors may facilitate more patience in future choices (Gollier & Weitzman, 2010). Moreover, collaborative approaches to savings may result in more postponement behaviors as joint decision-making can result in more patience than husbands' decisions alone (Osamor & Grady, 2018; Yang & Carlsson, 2012). Thus, the complex intrahousehold mechanisms, which reflect partners' positions and preferences, may yield more consistent predictions on family savings and finances. This is further evidenced by the finding that women's stronger decision-making corresponds with reduced savings when they have higher consumption preferences. In short, joint and cooperative decision-making arrangements may constitute more rational decision-making than a unilateral reflection of any one individual preference, whether male or female.

In a tangential finding, family composition such as having elderly living in the household is associated significantly with household savings but varied by gender of the financial knowledge respondent. This suggests that the presence of the additional member, especially in-laws can alter the bargaining environment. One study finds that multigenerational households often undermine the contribution of women's education and decision-making power in China (Cheng, 2019). Thus, family savings, while ideally the manifestation of family decisions for the benefit of all, may very well be the culmination of intrahousehold competition. In taking family composition into account, we suggest that balances of power can be a crucial input to understanding conduits of decision-making and how the self-interest of one can be counterbalanced by the self-interest of another family system.

6 | LIMITATIONS AND FUTURE RESEARCH

This study utilizes a single cross-sectional wave of China Family Panel Studies to examine associations of household bargaining power and household savings among married couples. Thus, we do not suggest or imply causation as it is plausible that bargaining power distributions are also influenced by the wealth and asset conditions of families. While multiple waves are available in the CFPS (e.g., 2010, 2012, 2014, 2016, and 2018), a longitudinal study was not possible for this analysis as the financial behaviors' module was only available for the 2014 wave. The sample in the study is better educated and affluent than the average household in China, raising the possibility that spending preferences may also be more reflective of that affluence.

However, our findings highlight a number of potential areas of future growth. Namely, the bargaining conditions for women may also be a manner by which we understand how preferences are enacted at the individual level. By this, we suggest that further studies would benefit from a financial behavior approach that decouples assumed gender norms of women's inherent savings. Not as much a naturalistic given, women's relative family altruism may also be a function of relatively low bargaining power and a deeper reflection of embedded social inequalities. We also suggest that bargaining outcomes for family units may be better understand from cooperative frameworks rather than zero-sum power arrangements. Our findings suggest and reflect more contemporary literature findings, that joint ownership and cooperative decision-making may constitute the most optimal outcome from a whole family perspective. To that end, future studies would benefit from understanding family decisions less as a competition for power and more as an exercise in power sharing.

ENDNOTE

[i] Model 1 consists of results for the full analytic sample ($N = 2121$). Model 2 and Model 3 include a subsample of households in which the husband responds to the financial literacy questionnaire, both without and with the interaction of present bias (husband) and women's decision-making. Model 4 and Model 5 include another subsample in which the wife responds to the financial literacy questionnaire, both without and with the interaction of present bias (wife) and women's decision-making.

REFERENCES

Addoum, J. (2013) Household portfolio choice and retirement. Available at SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2355435

Babiarz, P., Robb, C.A. & Woodyard, A. (2012) Family decision making and resource protection adequacy. *Journal of Consumer Affairs*, 46(1), 1–36. Available from: https://doi.org/10.1111/j.1745-6606.2012.01224.x

Banerjee, A., Meng, X. & Qian, N. (2010) The life cycle model and household savings: micro evidence from urban China. *National Bureau of Demographic Dividends Revisited*, 21, 21.

Bartzsch, N. (2008) Precautionary saving and income uncertainty in Germany—new evidence from microdata. *Jahrbücher für Nationalökonomie Und Statistik*, 228(1), 5–24.

Becker, H.S. (1996) The epistemology of qualitative research. In Jessor, R., Colby, A. & Sweder, R. (Eds.), *Ethnography and human development: Context and meaning in social inquiry*. Chicago, Illinois: University of Chicago Press, pp. 53–71.

Bekemeier, B., Dunbar, M., Bryan, M. & Morris, M.E. (2012) Local health departments and specific maternal and child health expenditures: relationships between spending and need. *Journal of Public Health Management Practises*, 18(6), 615–622. Available from: https://doi.org/10.1097/PHH.0b013e31825d9764

Bolt, V.J. & Bird, K. (2003) The intrahousehold disadvantages framework: a framework for the analysis of intrahousehold difference and inequality. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1754431

Börsch-Supan, A. & Lusardi, A. (2003) Saving: a cross-national perspective. In: *Life-cycle savings and public policy*. San Diego, CA: Elsevier, pp. 1–31.

Brown, P.H. & Park, A. (2002) Education and poverty in rural China. *Economics of Education Review*, 21(6), 523–541. Available from: https://doi.org/10.1016/S0272-7757(01)00040-1

Browning, M. (2000) The saving behaviour of a two-person household. *Journal of Economics*, 102(2), 235–251.

Brunetti, M., Torricelli, C. & Bertocchi, G. (2014) Who holds the purse strings within the household? The determinants of intra-family decision making. *Journal of Economic Behaviour and Organization*, 101, 65–86. Available from: https://doi.org/10.1016/j.jebo.2014.02.012

Chamon, M., Liu, K. & Prasad, E. (2013) Income uncertainty and household savings in China. *Journal of Development Economics*, 105, 164–177.

Chamon, M.D. & Prasad, E.S. (2010) Why are saving rates of urban households in China rising? *American Economic Journal: Macroeconomics*, 2(1), 93–130.

Chen, B., Yang, X. & Zhong, N. (2016) Housing demand and household saving rates in china: Evidence from a housing reform. *Journal of Housing Economics*, 49, 101693. Available from: https://doi.org/10.1016/j.jhe.2020.101693

Chen, Y.J., Chen, Z. & He, S. (2019) Social norms and household savings rates in China. *Review of Finance*, 23(5), 961–991.

Cheng, C. (2019) Women's education, intergenerational coresidence, and household decision-making in China. *Journal of Marriage and Family*, 81(1), 115–132.

Choi, H., Lugauer, S. & Mark, N.C. (2017) Precautionary saving of Chinese and US households. *Journal of Money, Credit and Banking*, 49(4), 635–661.

Choukhmane, T., Coeurdacier, N. & Jin, K. (2023). The one-child policy and household saving, *Journal of the European Economic Association*. https://doi.org/10.1093/jeea/jvad001

Curtis, C.C., Lugauer, S. & Mark, N.C. (2015). Demographic patterns and household saving in China. *American Economic Journal: Macroeconomics*, 7(2), 58–94.

Clifton, J., Díaz-Fuentes, D. & Llamosas García, G. (2020) A behavioral perspective on saving decisions. Empirical evidence for policymakers in the European Union. *Global. Policy*, 11(S1), 62–72. Available from: https://doi.org/10.1111/1758-5899.12751

Cooper, R. & Zhu, G. (2017) Household finance in China. NBER working paper series. https://doi.org/10.3386/w23741

Cristadoro, R. & Marconi, D. (2012) Household savings in China. *Journal of Chinese Economics and Business Studies*, 10(3), 275–299. Available from: https://doi.org/10.1080/14765284.2012.699702

Cui, X., Xiao, J.J., Yi, J., Porto, N. & Cai, Y. (2019) Impact of family income in early life on the financial independence of young adults: evidence from a matched panel data. *International Journal of Consumer Studies*, 43(6), 514–527.

Datta, N. (2006) Joint titling—a win-win policy? Gender and property rights in urban informal settlements in Chandigarh, India. *Feminist Economics*, 12(1–2), 271–298.

Devaney, S., Anong, S. & Whirl, S. (2007) Household savings motives. *Journal of Consumer Affairs*, 41, 174–186. Available from: https://doi.org/10.1111/j.1745-6606.2006.00073.x

Doss, C. (2013) Intrahousehold bargaining and resource allocation in developing Countries. *The World Bank Research Observer*, 28(1), 52–78. Available from: https://doi.org/10.1093/wbro/lkt001

Doss, C.R. (1996) Testing among models of intrahousehold resource allocation. *World Development*, 24(10), 1597–1609. Available from: https://doi.org/10.1016/0305-750X(96)00063-0

Duflo, E. (2003) Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa. *The World Bank Economic Review*, 17(1), 1–25.

Feng, J., Gerrans, P., Moulang, C., Whiteside, N. & Strydom, M. (2019) Why women have lower retirement savings: the Australian case. *Feminist Economics*, 25(1), 145–173.

Fisher, P. (2015) Gender differences in saving among low- to moderate-income households. *Financial Services Review*, 24(1), 1–13.

Fisher, P.J. (2010) Gender differences in personal saving behaviors. *Journal of Financial Counseling and Planning*, 21(1), 14–24.

Friedberg, L. & Webb, A. (2006) Determinants and consequences of bargaining power in households. https://EconPapers.repec.org/RePEc:crr:crrwps:wp2006-13

Friedemann-Sánchez, G. (2006) Assets in intrahousehold bargaining among women workers in Colombia's cut-flower industry. *Feminist Economics*, 12(1–2), 247–269.

Gibson, J., Le, T. & Scobie, G. (2006) Household bargaining over wealth and the adequacy of women's retirement incomes in New Zealand. *Feminist Economics*, 12(1–2), 221–246.

Goda, G.S., Levy, M., Manchester, C.F., Sojourner, A. & Tasoff, J. (2019) Predicting retirement savings using survey measures of exponential-growth bias and present bias. *Economic Inquiry*, 57(3), 1636–1658.

Gollier, C. & Weitzman, M.L. (2010) How should the distant future be discounted when discount rates are uncertain? *Economics Letters*, 107(3), 350–353. Available from: https://doi.org/10.1016/j.econlet.2010.03.001

Grinstein-Weiss, M., Guo, S., Reinertson, V. & Russell, B.D. (2015) Financial education and savings outcomes for low-income IDA participants: does age make a difference? *Journal of Consumer Affairs*, 49, 156–185.

Grover, A. & Chopra, S. (2017) Factors affecting beneficiaries' preference for biannual distribution of food grains in public distribution system of Punjab, India. *International Journal on Food System Dynamics*, 8(4), 298–316.

Grover, A.K., Chopra, S. & Krejci, C.C. (2020) A multi-criteria decision analysis for the public distribution system of food grains in Indian Punjab: towards decentralized food policies in developing countries. *Journal of Multi-Criteria Decision Analysis*, 27(3–4), 236–251.

Ha, T. (2018) *How do psychological factors affect household savings behavior? Thesis*. Nijmegen, Netherlands: Radbound University.

Handa, S. (1996) Maternal education and child attainment in Jamaica: testing the bargaining power hypothesis. *Oxford Bulletin of Economics and Statistics*, 58(1), 119–137.

Heckman, S. & Hanna, S. (2015) Individual and institutional factors related to low-income household saving behavior. *Journal of Financial Counseling and Planning*, 26, 187–199. Available from: https://doi.org/10.1891/1052-3073.26.2.187

Hersch, J. & Stratton, L.S. (1994) Housework, wages, and the division of housework time for employed spouses. *The American Economic Review*, 84(2), 120–125.

Hitczenko, M. (2016) *The influence of gender and income on the household division of financial responsibility. Working Papers 16-20*. Boston, Massachusetts: Federal Reserve Bank of Boston.

Hogarth, J.M. & Anguelov, C.E. (2003) Can the poor save? *Journal of Financial Counseling and Planning*, 14(1), 1.

Jackson, M.O. & Yariv, L. (2014) Present bias and collective dynamic choice in the lab. *American Economic Review*, 104(12), 4184–4204.

Jalan, J. & Ravallion, M. (1999) Are the poor less well insured? Evidence on vulnerability to income risk in rural China. *Journal of Development Economics*, 58(1), 61–81.

Kim, J., Gutter, M. & Spangler, T. (2017) Review of family financial decision making: suggestions for future research and implications for financial education. *Journal of Financial Counseling and Planning*, 28, 253–267. Available from: https://doi.org/10.1891/1052-3073.28.2.253

Klein, R.C. & Milardo, R.M. (2000) The social context of couple conflict: support and criticism from informal third parties. *Journal of Social and Personal Relationships*, 17(4–5), 618–637.

Laibson, D. (1997) Golden eggs and hyperbolic discounting. *The Quarterly Journal of Economics*, 112(2), 443–478. Available from: https://doi.org/10.1162/003355397555253

Li, L., Wu, X. & Zhou, Y. (2021) Intra-household bargaining power, surname inheritance, and human capital accumulation. *Journal of Population Economics*, 34(1), 35–61. Available from: https://doi.org/10.1007/s00148-020-00788-0

Lugauer, S., Ni, J. & Yin, Z. (2019) Chinese household saving and dependent children: theory and evidence. *China Economic Review*, 57, 101091. Available from: https://doi.org/10.1016/j.chieco.2017.08.005

Lundberg, S. & Ward-Batts, J. (2000) Saving for retirement: household bargaining and household net worth. https://EconPapers.repec.org/RePEc:ecm:wc2000:1414

Ma, X. & Piao, X. (2020) Income, intra-household bargaining power and the happiness of japanese married women. In: Tsai, M.-C. & Iwai, N. (Eds.) *Quality of life in Japan: contemporary perspectives on happiness*. Singapore: Springer, pp. 77–106. Available from: https://doi.org/10.1007/978-981-13-8910-8_4

Madrian, B.C. & Shea, D.F. (2001) The power of suggestion: inertia in 401(k) participation and savings behavior. *The Quarterly Journal of Economics*, 116(4), 1149–1187.

Mees, H. & Ahmed, R. (2012) Why do chinese households save so much. New York University Working Paper.

NBER. (2016) How biases affect retirement savings (Bulletin On Aging & Health). Available at: www.nber.org/bah/2016no1/how-biases-affect-retirement-savings

Niu, G., Zhou, Y. & Gan, H. (2020) Financial literacy and retirement preparation in China. *Pacific-Basin Finance Journal*, 59, 101262.

O'Donoghue, T. & Rabin, M. (1999) Doing it now or later. *American Economic Review*, 89(1), 103–124. Available from: https://doi.org/10.1257/aer.89.1.103

Osamor, P. & Grady, C. (2018) Factors associated with women's health care decision-making autonomy: empirical evidence from Nigeria. *Journal of Biosocial Science*, 50(1), 70–85.

Pangaribowo, E.H., Tsegai, D. & Sukamdi. (2019) Women's bargaining power and household expenditure in Indonesia: the role of gender-differentiated assets and social capital. *GeoJournal*, 84(4), 939–960. Available from: https://doi.org/10.1007/s10708-018-9901-4

Pieters, J. & Rawlings, S. (2020) Parental unemployment and child health in China. *Review of Economics of the Household*, 18(1), 207–237.

Puri, M. & Robinson, D. (2007) Optimism and economic choice. *Journal of Financial Economics*, 86(1), 71–99.

Ringdal, C. & Sjursen, I.H. (2021) Household bargaining and spending on children: experimental evidence from Tanzania. *Economica*, 88(350), 430–455. Available from: https://doi.org/10.1111/ecca.12353

Schulz, R. & Eden, J. (2016) Family caregiving roles and impacts. In: *Families caring for an aging America*. Washington (DC): National Academies Press.

Seguino, S. (2006) Taking gender differences in bargaining power seriously: equity, labor standards, and living wages. In: *Feminist economics and the World Bank*. London, UK: Routledge, pp. 112–134.

Seguino, S. & Floro, M.S. (2003) Does gender have any effect on aggregate saving? An empirical analysis. *International Review of Applied Economics*, 17(2), 147–166.

Shroff, M., Griffiths, P., Adair, L., Suchindran, C. & Bentley, M. (2009) Maternal autonomy is inversely related to child stunting in Andhra Pradesh, India. *Matern Child Nutrition*, 5(1), 64–74. Available from: https://doi.org/10.1111/j.1740-8709.2008.00161.x

Song, L. (2008) In search of gender bias in household resource allocation in rural China. IZA Working Paper No. 3464. Available at SSRN, https://ssrn.com/abstract=1136265. https://doi.org/10.2139/ssrn.1136265

Song, Z., Storesletten, K., Wang, Y. & Zilibotti, F. (2015) Sharing high growth across generations: pensions and demographic transition in China. *American Economic Journal: Macroeconomics*, 7(2), 1–39.

Thomas, D. (1994) Like father, like son; like mother, like daughter: parental resources and child height. *Journal of Human Resources*, 29, 950–988.

Unni, J. (1999) Property rights for women: case for joint titles to agricultural land and urban housing. *Economic and Political Weekly*, 34(21), 1281–1286.

Wang, S.-Y. (2014) Property rights and intra-household bargaining. *Journal of Development Economics*, 107, 192–201. Available from: https://doi.org/10.1016/j.jdeveco.2013.12.003

Wei, S.-J. & Zhang, X. (2011) The competitive saving motive: evidence from rising sex ratios and savings rates in China. *Journal of Political Economy*, 119(3), 511–564. Available from: https://doi.org/10.1086/660887

Xiao, J.J. & Noring, F.E. (1994) Perceived saving motives and hierarchical financial needs. *Financial Counseling and Planning*, 5(1), 25–44.

Xiao, J.J. & Porto, N. (2019) Present bias and financial behavior. *Financial Planning Review*, 2(2), e1048. Available from: https://doi.org/10.1002/cfp2.1048

Yang, X. & Carlsson, F. (2012) Intra-household decisions making on intertemporal choices: an experimental study in rural China. http://hdl.handle.net/2077/30274

Yilmazer, T. & Lyons, A.C. (2010) Marriage and the allocation of assets in Women's defined contribution plans. *Journal of Family and Economic Issues*, 31(2), 121–137. Available from: https://doi.org/10.1007/s10834-010-9191-6

Yuh, Y. & Hanna, S.D. (2010) Which households think they save? *The Journal of Consumer Affairs*, 44(1), 70–97.

Zhang, M.L., Brooks, M.R., Ding, D., Ding, H., He, H., Lu, J. et al. (2018) *China's high savings: drivers, prospects, and policies*. Asia Pacific Department: International Monetary Fund.

Zhou, W. (2014) Brothers, household financial markets and savings rate in China. *Journal of Development Economics*, 111, 34–47. Available from: https://doi.org/10.1016/j.jdeveco.2014.07.002

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APPENDIX

TABLE A1 Interactions with women's present bias and each of the other measures of bargaining power.

	Model 1	Model 2	Model 3	Model 4	Model 5
Income (logged)	0.61*** (0.10)	0.60*** (0.10)	0.61*** (0.10)	0.62*** (0.10)	0.61*** (0.10)
Elderly parents present	−0.44** (0.14)	−0.44** (0.14)	−0.45** (0.14)	−0.46** (0.14)	−0.43* (0.22)
Urban residence	0.24 (0.56)	0.17 (0.56)	0.19 (0.56)	0.22 (0.56)	0.18 (0.56)
Number of children	−0.17 (0.12)	−0.16 (0.12)	−0.16 (0.12)	−0.41** (0.16)	−0.16 (0.12)
Women's decision-making	0.01 (0.12)	0.01 (0.12)	0.00 (0.12)	−0.01 (0.12)	0.00 (0.12)
Women's present bias	−0.06 (0.08)	−0.00 (0.08)	0.05 (0.09)	−0.21* (0.11)	0.01 (0.06)
Name on deed					
Not owned (ref)					
Husband only	−0.20 (0.21)	0.06 (0.13)	0.06 (0.13)	0.04 (0.13)	0.06 (0.13)
Wife-only	0.33 (0.30)	0.43* (0.19)	0.43* (0.19)	0.41* (0.19)	0.43* (0.19)
Joint	0.33 (0.29)	0.27 (0.18)	0.26 (0.18)	0.24 (0.18)	0.26 (0.18)
Interaction: Name on deed × women's present bias					
Husband × present bias	0.19 (0.12)				
Wife × present bias	0.07 (0.17)				
Joint × present bias	−0.02 (0.15)				
Relative income					
Wife has less (ref)					
Same	0.32* (0.13)	0.32 (0.21)	0.32* (0.13)	0.30* (0.13)	0.32* (0.13)
Wife has more	0.23 (0.17)	0.13 (0.26)	0.24 (0.17)	0.21 (0.17)	0.23 (0.17)
Relative education					
Wife has less (ref)					
Same	0.06 (0.13)	0.05 (0.13)	0.18 (0.22)	0.07 (0.13)	0.06 (0.13)
Wife has more	−0.04 (0.15)	−0.05 (0.15)	−0.01 (0.23)	−0.04 (0.15)	−0.05 (0.15)
Interaction: Relative income × women's present bias					
Wife less × present bias		0.00 (0.00)			
Same × present bias		−0.00 (0.11)			
Wife more × present bias		0.08 (0.15)			
Interaction: Relative education × women's present bias					
Wife less × present bias			0.00 (0.00)		
Same × present bias			−0.08 (0.12)		
Wife more × present bias			−0.03 (0.13)		
Interaction: Child × women's present bias				0.16* (0.07)	
Interaction: Elderly parents × women's present bias					−0.01 (0.12)

(Continues)

TABLE A1 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	4.36* (1.81)	4.45* (1.82)	4.25* (1.82)	4.51* (1.80)	4.35* (1.82)
Observations	1447	1447	1447	1447	1447

Note: Standard errors in parentheses; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.