

# Religion and Household Borrowing

An Yan\*      Wei Yin†

October 2021

**Abstract:** Using China's religion and household survey data, we find that high religiosity increases households' willingness to borrow, both formally from banks and informally from family and friends. Our evidence suggests that religion could affect formal household borrowing by enhancing trust in transactions. However, the trust channel does not apply to informal household borrowing. We further find that in informal household borrowing, religion plays a more important role for household borrowers from non-stereotype social groups in the borrowing markets. We conjecture that high religiosity could promote altruism and facilitate informal loans, which overwhelmingly feature zero interest rate. People could be less empathic towards those from different social groups so that religion could be more effective in promoting altruism and informal household borrowing for non-stereotype social groups.

**Key words:** Religion; Household Borrowing; Trust

\* Corresponding author: Professor of Finance, Gabelli School of Business, Fordham University, Email: [ayan@fordham.edu](mailto:ayan@fordham.edu).

† Associate Professor of Finance, School of Economics and Management, Southeast University, China, Email: [yinwei\\_seu@126.com](mailto:yinwei_seu@126.com); [yinwei\\_seu@seu.edu.cn](mailto:yinwei_seu@seu.edu.cn)

## **1. Introduction**

Religion affects a wide range of social and economic behaviors. The early literature mostly focuses on the religion effect at the macro level, such as on economic growth (e.g., Guiso et al, 2004, Barro and McCleary, 2003, McCleary and Barro, 2006). Recently, many studies show that high religiosity can also facilitate business transactions at the individual level on firms, mutual funds, and banks (see, e.g., Shu, Sulaeman, and Yeung, 2012, Hilary and Hui, 2009, Jiang et al, 2018). They suggest that the positive religion effect occurs since religious beliefs can affect the risk attitude of business entities or their trustworthiness. However, few has studied the religion effect from the perspective of households. It is still unknown whether religion affects households in the same way as it affects business entities in business transactions.

Religion could affect households and business entities differently. For any households or business entities to participate in a transaction, they must trust their counterparties not to cheat or mislead them. However, households are more risk averse than business entities, and thus more sensitive to trust in their transactions. Households also have less verifiable information for counterparties to evaluate creditworthiness. Thus, a trusting business environment promoted by religion could be more important in household transactions than in transitions between business entities as studied in the literature. On the other hand, households can resort to family members and friends to transact. Social networks of these close acquaintances are embedded with stronger trust compared to social networks of business entities. If trust from family or friend networks is sufficiently strong, it could weaken or even subsume the trust-enhancing role of religion in household transactions. Given these differences between business entities and households, it is interesting to know whether religion affects households and their transactions in the same way as it affects business entities. Also, does religion affect household transactions via the same trust

channel as in transactions between business entities? If social networks of family and friends neutralize the role of religion in enhancing trust, what is the channel for religion to affect household transactions? Our paper intends to answer these questions. We study the effect of religion on households' decisions to borrow, both formally from banks and informally from friends or family members.

In the paper, we use China's religion data and calculate religion density to measure the influence of religion on households in each city. We use China's household survey to retrieve the borrowing information at the household level. We first study formal household borrowing, i.e., borrowing by households from banks. For households to borrow from banks, they must sufficiently trust that banks will not exploit them with unfair and conceptive loan terms. We argue that high religiosity can promote a trusting environment and increase households' willingness to borrow from banks. This religion effect is unlikely to be neutralized by the social network effect as discussed above, since the social network effect is presumably weak between households and banks. As expected, we find that borrowers in high-religiosity cities are more likely to borrow from banks. We also find supporting evidence on the trust channel. High religiosity enhances the trust of households on outsiders and the enhanced trust increases the willingness of households to borrow from banks.<sup>1</sup>

The literature on trust suggests that trust can be created and maintained with the help of either formal or informal institutions. Formal institutions include constitution, laws, policies, regulations enforced by official authorities, etc. Informal institutions are unwritten social codes, customs, or traditions shared by the community. Religion, as an informal institution, could be

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<sup>1</sup> Trust involves both trusting and being trusted (trustworthy). For a borrower to borrow from a lender, she needs to not only trust the lender but also be trusted by the lender that she will not cheat or mislead the lender. Our data enable us to directly test the relation between religion and the trusting of households on banks, but not on trustworthiness of households. It is likely that religion also affects formal household borrowing from the perspective of trustworthiness of households, though we cannot directly test on this possibility.

more effective in promoting trust when formal institutions are weak. Rural areas in China typically have weaker formal institutions such as weaker legal enforcement compared to China's urban areas. Thus, if the religion effect goes through the trust channel, we expect the effect to be stronger in rural than in urban areas. We find supporting evidence.

Next, we study informal household borrowing, i.e., borrowing by households from family and friends. Informal borrowing offers an alternative borrowing channel to the households that have limited access to formal credit markets. The limited access happens since banks may not have sufficient and reliable information to evaluate the creditworthiness of households. Informal borrowing could resolve the challenge by relying on the trust fostered in the friend and family networks. In this case, since friendship and kinship can help enhance trust, the role of religion on trust could be marginalized among family members and friends. As expected, we find that the positive religion effect on informal household borrowing, while it exists, does not function through the trust channel. In particular, religion does not affect the trust between households and their relatives and friends. Also, the religion effect on household borrowing from friends and relatives is similar between the rural and urban areas in China. The latter result differs from formal household borrowing (with banks), where religion can complement weak formal institutions in rural areas to promote trust. Overall, the above results imply that the trust fostered from family ties and friendship could be sufficiently strong to marginalize the role of religion in promoting trust as an informal institution.

To further understand what drives the religion effect in informal household borrowing, we study how the effect varies cross-sectionally. We find that the effect is stronger for unusual households from non-stereotype social groups in the household borrowing markets, such as ethnic minorities, highly-educated households (with graduate degree or above), high-income

households, unmarried households, households with heads being communist party members, and households with female heads. The latter result is especially strong in the rural areas. We also find that the religion effect on informal household borrowing is also stronger in those areas that are economically more developed and financially more affluent.

We propose an altruism channel to explain the above results on informal household borrowing. Altruism is a virtue that guides an individual to behave at a material loss to herself but with a benefit to other individuals, without the expectation of direct compensation for the behavior. Altruism could be evoked by the empathic desire to help someone who is suffering, especially towards close kin, friends, and peers from similar social in-groups (see, e.g., Barclay, 2011). Some studies in evolutionary psychology propose reciprocal altruism as a mechanism of altruism (see, e.g., Trivers, 1971). They suggest that the evolution of altruism is driven by the probability of future mutual and reciprocal interactions. Other psychology research emphasizes the self-sacrificial nature of altruism (see, e.g., Batson, 2012). Our paper does not distinguish between reciprocal altruism and self-sacrificial altruism. Our argument below holds for both mechanisms of altruism.

We argue that altruism plays an important role in informal household borrowing. In particular, informal household loans in China typically have zero interest rate.<sup>2</sup> Thus, a person willing to lend to a friend or a family member does not gain in future consumption from positive interest rate as in commercial lending or formal household lending. Instead, because of zero interest rate in informal loans, lenders would suffer a loss in utility by giving up current consumption for the same amount of future consumption. In this case, lenders must balance the utility loss against the emotional gain from their kind and altruistic act or from the expected gain

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<sup>2</sup> These features of informal loans do not exist in formal household loans, which carry positive interests and impose various loan terms to compensate for the risk of the loans. This difference explains why altruism may not play a role in formal household borrowing.

from future reciprocal interactions.<sup>3</sup> Informal household borrowing/lending would take place only when lenders generate sufficient utility from reciprocal or self-sacrificial altruism. Overall, the above argument suggests that an altruistic and reciprocal environment plays an important role in facilitating informal borrowing/lending.

Most, if not all, of religions promote altruism and reciprocity, including Buddhism, Christianity, Islam, Christianity, Protestantism, and Taoism, the five religions covered in our data. For example, both Taoism and Buddhism, the two popular religions in China, prominently feature altruism as a core moral value. Buddhism advocates all beings be free from suffering. Accordingly, it spiritually rewards altruistic acts as a path to be reincarnated into heavenly transitory stages. Taoism also promotes mutual aid and altruism to achieve family and social harmony and to avoid purgatory stages. Consequently, altruistic acts promoted by religions could induce households to help each other through informal household loans.

The altruism channel can explain our results on the positive effect of religion on informal household borrowing. It can also explain our results on the cross-section differences in the religion effect. Evidence from the psychology research suggests that altruistic behaviors are more likely among members from similar social groups (see, e.g., Barclay, 2011). If so, household borrowings between parties from different social groups could suffer from a lack of organic altruism towards each other. Religion, an external force promoting altruism, likely can improve the sense of belongings among different social groups and facilitate informal borrowing. Following this argument, we expect the religion effect on informal household borrowing to be

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<sup>3</sup> Many studies suggest that the economics behind the informal household loans is different from that in formal household loans. See, e.g., Zeller 2006, Kropp et al 2008. The departures from pure self-interest (as in formal household and firm lending) have stimulated various models based on social preferences, including inequity aversion preferences (Fehr and Schmidt, 1999), equity and reciprocity preferences (Bolton and Ockenfels, 2000), and altruistic preferences (Andreoni and Miller, 2002).

more pronounced for atypical borrowers from non-stereotype social in-groups in the household borrowing markets. Our findings are consistent with this expectation. Ethnic minority, highly educated households, communist party members, unmarried households, high income households, households with fewer members, and female household heads are small and non-stereotype social in-groups in household borrowing. High religiosity should play a more important role in facilitating informal borrowing by these households.

In addition, richer people are likely less compassionate and empathic towards each other. Religion could improve compassion and empathy among rich households, thereby increasing the likelihood of them borrowing informally between each other. This argument could explain our findings that the religion effect on informal household borrowing is more pronounced in areas that are economically more developed and financially more affluent.

The remaining of the paper is organized as follows. In Section 2, we discuss the literature and the contribution of our paper to the literature. In Section 3, we discuss sample construction and definitions of the variables used in our empirical tests. We discuss our empirical results on religion and household borrowing in Section 4. In Section 5, we specifically focus on informal household borrowing and propose an altruism explanation. We conclude in Section 6.

## **2. Literature Review**

Our paper contributes to the literature in several ways. First, our paper contributes to the literature on how religion affects economic and business activities. The earliest works that study the economics of religion include Weber (1930) and Smith (1974), followed by Iannaccone (1991, 1998), Barro and McCleary (2003), McCleary and Barro (2006) etc. There are two common views in the economics of religion. The first view argues that the religion effect could

come from the network of people worshiping in religion. Under this view, participation in a religion helps form social capital or communal culture. For example, Fisman et al. (2017) show that religion proximity helps mitigate information frictions in lending. Gallen and Fang (2015) show that high religiosity can generate social norms and impose social pressure against manipulation of corporate news. On the other hand, the second view suggests that the religion effect occurs since religious beliefs affect personality traits. For example, religiosity is linked to risk aversion, honesty, and trustworthiness. As a result, a high-religiosity firm has a lower degree of risk exposure (Hilary and Hui, 2009), a lower cost of debt financing (Jiang et al, 2018), etc. Our paper follows the second view that religious beliefs and personality traits matter for business activities. Like the previous studies, our paper confirms that high religiosity helps promote business activities such as household borrowing by promoting a trusting environment. In addition, our paper also proposes another personality trait that could be affected by religious beliefs, namely altruism. We argue that the altruism trait promoted by religion can increase altruistic business activities such as informal household borrowing.

Second, our paper contributes to the literature on household finance. The literature focuses mostly on the lender/investor side, such as on depositing in banks, investing in stock markets (see, e.g., Guiso et al. 2008; Hong et al. 2004). In comparison, few studies have focused on the borrower side.<sup>4</sup> Our paper intends to fill this gap by studying household borrowing from the borrower side. Our results suggest that the religion effect increases the likelihood of transactions not only by affecting lenders and investors but also by affecting borrowers.

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<sup>4</sup> For example, Zinman (2015) points out that “research on household debt has lagged behind its sister literatures on the asset side of the household balance sheet.” Similarly, Tufano (2009) also points out that “most of the existing literature on consumer financial decisions is focused on the saving and investing functions.” Guiso et al. (2004) study the effect of trust on financial market participation from both the investor and the borrower sides, though they do not directly distinguish the trust effect between both sides.



Third, while the literature on household finance has studied in depth transactions with formal financial institutions, informal financial transactions are relatively under-studied. Compared to the formal channel, the informal channel in household finance can produce superior “soft” information, enhance trust, enforce contracts through social pressure, and facilitate demand from particular clientele (Pagura and Kirsten, 2006; Carpenter and Jensen, 2002; Yadav et al., 1992; Zeller, 1994). The informal channel is especially important in emerging markets.<sup>5</sup> Our paper contributes to the understanding of informal household finance by studying the role of religion in fostering a trusting and altruistic environment for transactions.

There is also a large literature on the role of altruism in informal financing. For example, Lee and Persson (2016) study informal financing between family investors and entrepreneurs. They argue that informal financing, though more efficient in trust enhancement and contract enforcement, could be less attractive as a risky capital to altruistic entrepreneurs. This is because altruistic entrepreneurs may want to avoid imposing risk on family investors and to avoid repercussions for their social relationships. Allen et al. (2019) also study informal financing and altruistic relationship such as family relationship. Following this line of research, our paper proposes altruism to explain the religion effect on informal financing.

Finally, our paper is related to the literature in psychology on religion and personality traits. This psychology literature focuses mostly on the five broad personality traits (the Big Five). Altruism is a part of the personality traits that are linked to kindness, empathy, consideration, generosity, and concern for others. Many studies further confirm that altruism is positively

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<sup>5</sup> For example, informal household borrowing is popular in China. Allen et al. (2005) attribute the success of the Chinese private sector and its economy to the informal financial system. Hasan et al. (2009) suggest that Chinese private firms rely heavily on informal financing and self-financing.

correlated with intrinsic religiosity.<sup>6</sup> See, e.g., Watson, Hood, and Morris (1985), Hunsberger and Platomow (1986), Batson et al. (2001), Batson et al. (1999), etc. In these studies, a person with an intrinsic religiosity lives the life as the way the religion teaches, or views religion as “an active directing force, not just tool used to reach self-serving ends” (Batson, 1982). Our paper builds on this relation between religion and altruism to study the economic impact of religion on household borrowing.

### **3. Sample Construction and Variable Definition**

We collect the information on household characteristics and borrowing activities from the 2013 national household survey by Chinese Household Income Project (CHIP).<sup>7</sup> We collect city-level data from China’s City Statistical Yearbook in 2014. The religion data were originally created by China Data Center 2014 (later closed) under the project of Spatial Explorer of Religion (the Explorer hereafter).<sup>8</sup> The original data of the project come from China’s 2004 economic census (China Census Bureau 2005), which includes information of 72,887 religion venues as economic units. The Explorer validated each religion site for five major Chinese religions, revised the Chinese government data, and republished the data of religion venues. The final validated data in our sample consist of 23,239 religion sites in 233 regions/cities, covering five religions in Buddhism, Taoism, Christianity, Protestantism, and Islam. In our paper, we use city as the geographic unit to calculate the number of religion sites in each city. The cities in our data cover both urban and rural areas in China. Next, we merge the data from the Explorer with

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<sup>6</sup> Some studies suggest that religiosity is related to Agreeableness, one of the Big Five traits (see, e.g., the review in Saroglou, 2002). Altruism is a lower-level trait under agreeableness (see, e.g., Matsumoto, 2012).

<sup>7</sup> Chinese Household Income Project (CHIP) has conducted six surveys by far. The recent survey was in year 2019 for recording the 2018 urban and rural household information. We use the data from CHIP 2013 to match with our other data.

<sup>8</sup> The initiative benefited from the efforts of scholars at the University of Michigan and Purdue University’s Center on Religion and Global East, and supported by the Henry Luce Foundation.

the CHIP data based on household locations (cities). The final dataset consists of 16,664 households in 116 cities. The samples in some tests may vary due to various missing values.

The key variable in our study is religion density, calculated as the number of religion sites in each city scaled by the population of the city. We use religion density to measure the influence of religion on households in each city. However, there is one potential concern on simply aggregating the number of religion sites for each city. The sites of the five religions covered in our sample have different sizes of worshipers and followers due to historical and contemporary political reasons. For example, according to the data validated by the Explorer, Buddhism and Taoism have more worshipers per site compared to Christianity and Protestantism. As a result, the Explorer recorded a large number of smaller religion sites with fewer worshipers for Christianity and Protestantism compared to Buddhism and Taoism. Naturally, a religion site with more worshipers is more influential on the households surrounding the site. If so, we would not be able to measure correctly the impact of each religion site if we equal-weight each religion site. To control for different numbers of worshipers per site, we scale each religion's density in each city by the same religion's density in all cities. The underlying assumption of this scale is that, if a religion has more worshipers per site, this worshiper effect should be the same across all cities. This assumption arguably holds since the Chinese government holds universal religion policy across all cities, so that any constraint on the size of religion site and on worshipping should be the same across all cities. Under this assumption, the worshiper effect should affect the city-level and country-level densities in the same manner for the same religion. Thus, by scaling the city-level religion density by the country-level religion density, we can control for the different sizes of worshipping in each religion.

In particular, we calculate scaled religion density for each city,  $Religion_j$  as follows:

$$Religion_j = \sum_i (d_{i,j} / D_i) \quad (1)$$

Here,  $j$  stands for each city and  $i$  stands for each of the five religions in our sample.  $d_{i,j}$  and  $D_i$  are the city- and country-level religion density, respectively, for each religion  $i$ .  $d_{i,j}$ , the city-level religion density, is the ratio of religion  $i$ 's number of sites in city  $j$  to the total population in city  $j$ .  $D_i$ , the country-level religion density, is the ratio of religion  $i$ 's number of sites in all cities to the total population in all cities. We present the distribution of  $Religion_j$  across cities in Figure 1. As can be seen, our sample covers mostly Central China and South China, as well as Yunnan Province, which has a large population of ethnic minorities. It does not cover most of Northwest China where Islam is presumably the most popular religion.

In the cities covered by our sample, Buddhism and Daoism are widely regarded as the two most popular and influential religions. Thus, in some robustness checks, we also calculate scaled religion density separately for Buddhism, Daoism, Buddhism and Daoism combined (*BudTao*), and all other religions other than Buddhism and Daoism (*NonBudTao*).

We measure households' willingness to borrow by a discrete choice variable, *Borrowing*. We define household borrowing from banks as formal borrowing and household borrowing from family and friends as informal borrowing. *Borrowing* is calculated based on the household borrowing activities in the past three years. It equals 0 for no household borrowing, 1 for formal householding borrowing, and 2 for informal household borrowing. Note that a small fraction of households borrow from both banks and friends/family. We double count these families in our sample under both formal and informal borrowings. In unreported robustness checks, we have tried to exclude these households from our sample or treat these households as a separate category. Our results from the two robustness checks remain qualitatively unchanged compared to the results reported in the paper. These results are available upon request.

We also construct two trust variables to capture the level of trust each household has on transacting parties. The first trust variable is *TrustStranger*, measuring the trust of each household on strangers. The survey question related to this variable is “Would you say that others (beside your relatives or friends) are trustworthy?” The second trust variable is *TrustFriends*, measuring the trust of each household on family members and friends. The variable is related to the survey question “Would you say that your relatives or friends are trustworthy?” Based on the answers from both questions, we code *TrustStranger* and *TrustFriends* to be 1 for the answer “not trustworthy at all,” 2 for “not very trustworthy,” 3 for “indifferent,” 4 for “trustworthy,” and 5 for “very trustworthy.” We also code the answer “unsure/no answer” as missing value.

Next, we construct the following control variables from the household survey. *Female* is a dummy variable equal to 1 if the household head is a female. *Age* is the the age of the household head in 2013. *Minority* is a dummy variable equal to 1 for ethnic minority households and 0 for households with Han ethnicity. Here we consider any households not in the Han ethnic group as ethnic minority. *Communist* is a dummy variable equal to 1 if the household head is a Communist Party (CCP) member. *Education* is the years of the household head’s formal education till 2013. *High Edu* is a dummy variable equal to one if the household head’s education is at the graduate level or above. *Health* is a discrete variable measuring the health condition of the household head in 2013, with 1 standing for very good health, 2 for good, 3 for average, 4 for poor, and 5 for very poor health. *Married* is a dummy variable for married households. *Rural* is a dummy variable equal to 1 for households in rural areas and 0 in urban areas. *Income* is the log of total disposable household income. *Incomeper* is the log of the

average disposable income per household member. *Numberper* is the log of the number of household members.

We also use several macro variables as control variables. *GDP* is the log of general domestic product (GDP) in each city. *GDPER* is the log of *GDP* per capita in each city. *Population* is the log of population in each city. *Deposits* and *Loans* are the logs of total bank deposits and bank loans, respectively, of all households in the city.

We provide summary statistics for the above variables in table 2. As can be seen, households with their heads being female, CCP members, minority ethnicity, and high education are small social in-groups in our sample. In particular, only 16% of household heads in our sample are female; 3.9% are ethnic minority; 17.5% are Communist party members; and 20.8% have education above the undergraduate level. There is also a large disparity in income per household member across households. The highest income per household member is 34 times of the average and more than 5,000 times of the lowest income per member.

#### **4. The Religion Effect on Household Borrowing**

In this section, we study the effect of religion on the willingness of households to borrow. We start with evidence at the macro level by running regressions of total household loans in city  $j$ ,  $\text{Log}(\text{Loans}_j)$ , against scaled religion density in the same city,  $\text{Religion}_j$ :

$$\text{Log}(\text{Loans}_j) = \alpha_0 + \alpha_1 \text{Religion}_j + \alpha_2 \text{Control} + \varepsilon. \quad (2)$$

The control variables consist of  $\text{Log}(\text{GDP})$ ,  $\text{Log}(\text{Population})$ , *Rural*, and  $\text{Log}(\text{Deposits})$ , measured at the city level. The sample consists of 110 cities. 6 cities are missing in the regression due to missing values in  $\text{Log}(\text{GDP})$ . We run OLS regressions for equation (2). Significance tests are conducted on the basis of heteroscedasticity-consistent standard errors.

We present the results in Table 3. We introduce control variables gradually in columns 1 and 2. The coefficients of *Religion* in both columns are positive and highly significant. These results show that religion has a positive effect on household loans. One may concern that household loans could be positively related to household deposits. If so, the positive coefficient of *Religion* in columns 1 and 2 could be driven by the religion effect on deposits rather than loans. To check this possibility, we first confirm in column 3 that religion does positively affect household deposits. However, when we control for household deposits in column 4, the coefficient of *Religion* remains positive and significant, though both the significance of the coefficient reduces both economically and statistically compared to those in columns 1 and 2. This result suggests that the religion effect on deposits does not completely subsume the religion effect on household loans.

Next, we study the religion effect on household borrowing, i.e., on the likelihood of each household to borrow. We estimate the following multinomial logistic model:

$$\Pr(\text{borrowing} = k) = \frac{e^{Z\beta_k}}{e^{Z\beta_0} + e^{Z\beta_1} + e^{Z\beta_2}}, \quad (3)$$

where *borrowing* = 0, 1, 2 stands for unordered choices of no borrowing, formal household borrowing (from banks), and informal household borrowing (from family and friends), respectively. The vector of independent variable *Z* consists of scaled religion density, *Religion*, or other religion density variables such as *Buddhism*, *Taoism*, etc., as well as control variables *Rural*, *Female*, *Age*, *Minority*, *Communist*, *Education*, *Health*, *Married*, *Incomeper*, and *Numberper*. The model is estimated using the method of maximum likelihood estimation. Standard errors are controlled for heteroskedasticity across households. We treat the group of no borrowing (*borrowing* = 0) as the base category. Thus, model (3) can be viewed as simultaneously estimating two equations: a formal borrowing equation (*borrowing* = 1) on the

likelihood of formal household borrowing from banks relative to the benchmark of no borrowing and another informal borrowing equation ( $borrowing = 2$ ) on the likelihood of informal household borrowing from family and friends relative to the benchmark of no borrowing. If high religiosity helps promote household borrowing as we conjecture, we expect the coefficients of *Religion* to be positive in both equations.

We present the results in Table 4. Panels A and B report the results on the likelihood of formal and informal household borrowing, respectively, relative to no borrowing. In column 1 of Panel A, we first run a regression against *Religion*, the scaled religion variable capturing the influence of all five religions in the sample. The coefficient of *Religion* is positive and highly significant at the 1% level. An increase in *Religion* by one standard deviation (i.e., 2.53) increases the relative probability (i.e., the odds) of borrowing formally from banks (relative to no borrowing) by 20%. We also find the average marginal effect of *Religion* to be 0.005. Thus, on average, a one-standard-deviation increase in *Religion* increases the probability of formal household borrowing by 1.27%.

In columns 2-4, we run additional regressions on other religion density variables, namely, *Buddhism*, *Taoism*, and *BudTao* (the sum of *Buddhism* and *Taoism*). The coefficients of *Buddhism*, *Taoism*, and *BudTao* are all positive and statistically significant. Their economic significances are also similar to that of the coefficient in column 1. For example, the marginal effect of *BudTao* is 0.089, suggesting that an increase in *BudTao* by one standard deviation would on average increase the probability of formal household borrowing by 1.1%. We also run a regression in column 5 against *NonBudTao*, a scaled sum of Christianity, Protestantism, and Islam, the three religions other than Buddhism and Taoism. The coefficient of *NonBudTao* is insignificant. These results suggest that the religion effect on formal household borrowing could



be driven by Buddhism and Taoism, the two most popular religion in the cities covered in our sample. In comparison, the religion effect seems to be weak for the other religions. One possibility of the weak effect could be the weak influence of these religions in the areas covered in our sample, due to historical and/or contemporary political reasons in China.

The results in Panel B on the likelihood of informal household borrowing are similar. The coefficients of *Religion*, *Buddhism*, *Taoism*, and *BudTao* in columns 1-4 are all positive and highly significant at the 1% level. They are all economically significant as well. For example, the marginal effect of *Religion* is 0.006. Thus, an increase of one standard deviation in *Religion* would on average increase the probability of borrowing informally from family and friends by 1.52%. In contrast, the coefficient of *NonBudTao* is insignificant in column 5. Overall, our results on informal household borrowing are similar to those on formal household borrowing. High religiosity increases households' willingness to borrow informally from family and friends. The positive effect of religion on informal household borrowing comes mostly from Buddhism and Taoism instead of the other three religions.

#### **4.1. The trust channel in formal household borrowing**

In this subsection, we study whether the trust channel can explain the religion effect on formal household borrowing from banks. To borrow from banks, households need to be sufficiently convinced that they will not be misled or deceived by banks, such as by hidden fees or opaque loan terms. Many studies in the literature suggest that high religiosity can promote a trusting environment. We conjecture the trusting environment promoted by high religiosity can increase households' willingness to borrow from banks.

To test this trust channel in formal household borrowing, we first study the difference in the religion effect between rural and urban areas. It can be argued that trust can be enhanced through

either formal institutions such as enforcement of laws and policies or informal institutions such as religion or both. Law enforcement and accordingly formal institutions are presumably weaker in China's rural areas than in urban areas. If the religion effect on formal household borrowing does go through the trusting channel, then religion, as an informal institution, should play a more pronounced role in creating a trusting environment in rural than in urban areas.

We study the different religion effects between rural and urban areas by interacting scaled religion density by the rural dummy. We then run multinomial logistic regressions (3), with the interaction  $Religion \times Rural$  as an additional independent variable. The multinomial regressions have both the formal borrowing equation ( $Borrowing = 1$ ) and the informal borrowing equation ( $Borrowing = 2$ ). Following our discussion above, we expect the coefficient of  $Religion \times Rural$  to be positive in the formal borrowing equation.

We report the results from the formal borrowing equation (on the likelihood of formal household borrowing from banks) in Table 5. We first report the results based on the subsamples of rural and urban areas in columns 1 and 2. The coefficient of  $Religion$  in column 1 (based on rural areas) is positive and highly significant, while the coefficient in column 2 (based on urban areas) is insignificant. In column 3, we run the multinomial regression against the interaction  $Religion \times Rural$  based on the whole sample. In column 4, we further control for  $Gdpper$  and  $Gdpper \times Rural$  to control for the different economic growth between rural and urban areas. In both columns 3 and 4, the coefficients of  $Religion \times Rural$  are positive and significant at the 1% level. Overall, our results in the table show that the religion effect on formal household borrowing is more significant in rural than in urban areas. They suggest that high religiosity can complement weak formal institutions to enhance trust in household borrowing in China's rural areas.

Next, we use the trust variable *TrustStranger* to measure the trust of households towards banks. We test how the religion effect is affected by this trust. We first run OLS regressions of *TrustStranger* against our religion variables. We report the result in the first three columns in Table 6. The religion variable is *Religion* (scaled religion density of all five religions) in column 1, *BudTao* (scaled religion density of Buddhism and Taoism) in column 2, and *NonBudTao* (scaled religion density of the religions other than Buddhism and Taoism) in column 3. The coefficients of all three religion variables are positive and highly significant. *TrustStranger* is a discrete variable measuring the level of trust in a monotonic and discrete order. Thus, in column 4, we also run ordered logistic regression of *TrustStranger* against *Religion*. The coefficient of *Religion* remains positive and significant. Thus, high religiosity does improve the trust of households towards strangers, such as banks.

We also run a multinomial logistic regression of the borrowing variable, *Borrowing*, against *TrustStranger*. We report the results from the formal borrowing equation in column 5. The coefficient of *TrustStranger* is negative and significant at the 1% level. This result shows that trust towards strangers such as banks plays a positive role in increasing households' willingness to borrow from banks. Overall, our results in this table suggest that high religiosity enhances trust and enhanced trust encourages households to borrow from banks.

#### **4.2. The trust channel in informal household borrowing**

In this subsection, we study whether the trust channel can explain the religion effect on informal household borrowing from family and friends. As we discussed in the introduction, the trust channel could function differently in formal and informal household borrowing. On the one hand, high religiosity can promote a trusting environment in both formal and informal household borrowing. On the other hand, social networks of family and friends can also help enhance trust

in informal household borrowing, while the social network effect is presumably weak between households and banks in formal household borrowing. As a result, while the religion effect is strong on trust building in formal household lending, such an effect on trust could be reduced or even subsumed by the network effect in informal household borrowing. Thus, it is interesting to know whether or not religion still affects informal household borrowing via the trust channel.

We first study the difference in the religion effect on informal household borrowing between China's rural and urban areas. As we discussed in Section 4.1, formal institutions such as enforcement of laws and policies are weaker in rural than in urban areas. Informal institutions such as religion can fill the void left by formal institutions to enhance trust in business transactions. Thus, the religion effect, if it functions through the trust channel, should be stronger in rural than in urban areas. To test, we first run multinomial regressions as in model (3) based on the subsamples of rural and urban areas. We present the results from the informal borrowing equation of model (3) in the first two columns of Table 7. In both columns, the coefficients of *Religion* are positive and significant with similar magnitudes. Next, we run multinomial regressions against the interaction between *Rural* and *Religion*. We present the results in columns 3 and 4. In both columns, the coefficients of *Religion*  $\times$  *Rural* are insignificant. These results show that the positive effect of religion on informal household borrowing is similar between rural and urban areas. This pattern is different from that in formal household borrowing, where religion could complement formal institution to enhance trust.

Next, we study the trust channel in informal household borrowing by using *TrustFriends*, a discrete variable measuring the trust of households towards their friends and family members. We run similar regressions to those in Table 6 with *TrustStranger* replaced by *TrustFriends*. We present the results in Table 8. In the first four columns, we report the results from either OLS or

ordered logistic regressions of *TrustFriends* against the religion density variables, namely *Religion*, *BudTao*, and *NonBudTao*. The coefficients of the religion variables are all insignificant. These results show that religion does not significantly affect the trust between friends and family members. As we discussed earlier, social connections between friends and family members could be sufficient to create and maintain trust among them. Our results imply that the trust from friendship and kinship could subsume the effect of religion on trust building. Next, we run a multinomial regression of *Borrowing* against *TrustFriends*. We report the results from the informal borrowing equation in column 5. The coefficient of *TrustFriends* is positive and significant. Thus, trust among friends and family members is still a key factor influencing households' decision to borrow from friends and family members, even if the trust may not be affected by religion. Overall, our results in this subsection show that the trust channel cannot explain the religion effect on informal household borrowing.

## **5. Informal Household Borrowing**

To further understand the religion effect on informal household borrowing, we study the cross-section differences among different households and cities. We first focus on the households in small and unusual social in-groups in the household borrowing markets. We then study the households in cities with different economic growths and household wealth. Finally, we provide an altruism explanation for all our findings on religion and informal household borrowing.

### **5.1. Cross sectional difference in the religion effect**

We start by studying whether religion affects informal borrowing differently on non-stereotype households that are different from most borrowers in the household borrowing

markets. As we show in the sample statistics in Table 2, households with their heads being Chinese Communist Party members, in ethnic minority groups, or highly educated with graduate degrees are in relatively small social in-groups and are different from most of the borrowing households in our sample. Thus, we first study whether the religion effect is different for these households. To study, we interact *Religion* with the CCP dummy, *Communist*, the ethnic minority dummy, *Minority*, or the high education dummy, *High Edu*. We then run multinomial regression (3) against each one of these interactions. The control variables are the same as those in the earlier regressions. We report the results from the informal borrowing equations of the regressions in columns 1-3, Panel A of Table 9. The coefficients of the interactions  $Religion \times Communist$  in column 1,  $Religion \times Minority$  in column 2, and  $Religion \times High Edu$  in column 3 are all positive and significant at the 5% level. These results show that the religion effect on informal household borrowing is more pronounced if the household head is a CCP member, ethnic minority, or highly educated with a graduate degree or above. They also suggest that religion has a stronger effect on the informal household borrowing by non-serotype social in-groups.

We also focus on other household characteristics that may be non-stereotype in the household borrowing markets. We first study high-income households. High-income households presumably are less likely to borrow than low-income households, especially through informal household borrowing. We interact *Religion* with *Incomeper*, income per household member, and run multinomial regression (3) against the interaction. We present the results in column 1 of Panel B, Table 9. The coefficient of  $Religion \times Incomeper$  is positive and significant at the 1% level. Thus, religion has a stronger effect on the informal borrowing by high-income households compared to the informal borrowing by low-income households. Second, we focus on

households with fewer household members. Less-populated households could be less likely to experience liquidity constrain, thereby less likely to borrow. To study the impact of household size on the religion effect, we run regression (3) against the interaction between *Religion* and *Numberper*, number of household members per household. We present the results from the informal borrowing equation in column 2 of Panel B. The coefficient of  $Religion \times Numberper$  is negative and significant at the 5% level, suggesting that religion has a stronger effect on informal borrowing by households with fewer household members. Third, we focus on unmarried households. Like households with small sizes, unmarried households could be perceived as being less liquidity constrained and less likely to borrow. We run regression (3) against the interaction between *Religion* and *Married*, a dummy for married households. We present the results from the informal borrowing equation in column 3 of Panel B. The coefficient of  $Religion \times Married$  is negative and significant at the 1% level. This result suggests that religion has a stronger effect on the informal borrowing by single households.

Next, we focus on households with female household heads. There is reportedly an implicit bias against female around world. For example, according to the Gender Social Norms Index released by the United Nations Development Programme (UNDP) in 2020, about half of the world's men and women feel that men make better political leaders and over 40 percent feel that men make better business executives. Similarly, there could also exist unconscious bias towards female being household heads. This is especially the case in Rural China where bias against female could be stronger than in Urban China. Under the bias, many household lenders may not feel comfortable or willing to transact with household borrowers with female heads. To study the impact of female household head on the religion effect, we run regression (3) against the interaction between *Religion* and *Female*, a dummy of female household head. We present the

results from the informal borrowing equation in column 4 of Panel B. The coefficient of *Religion*  $\times$  *Female* is positive and significant at the 5% level. We further disaggregate our sample to subsamples of rural and urban areas, and we run similar regressions for both subsamples. We present the results from the informal borrowing equation in columns 5 and 6 of Panel B. The coefficient of *Religion*  $\times$  *Female* is positive and significant in column 5 for the rural subsample and it is insignificant in column 6 for the urban subsample. These results suggest that religion has a stronger effect on informal borrowing by households with female household heads, especially in Rural China.

Finally, we study whether religion affects informal borrowing differently in areas with different levels of household wealth. We interact *Religion* with *Log(GDP/Capita)*, GDP per capita, and run multinomial regression (3) against the interaction. We present the results from the informal borrowing equation in column 1 of Table 10. The coefficient of *Religion*  $\times$  *Log(GDP/Capita)* is positive and highly significant at the 1% level. *Log(GDP/Capita)* can be viewed as an indicator of average net worth of the general population which includes both borrowers and lenders. Thus, in column 2, we control for household income on the borrower side by controlling for the interaction between *Religion* and borrowing households' income per household member (*Incomeper*). This control helps purge any income effect from the borrower side so that the coefficient of *Religion*  $\times$  *Log(GDP/Capita)* mostly captures the interaction between religion and the household wealth from the lender side. Again, the coefficient of *Religion*  $\times$  *Log(GDP/Capita)* remains positive and highly significant.

We also use household deposit per capita, *Log(Deposit/capita)* and interact it with *Religion*. We run similar regressions and present the results in columns 3-4. The coefficients of *Religion*  $\times$  *Log(Deposit/capita)* are positive and significant. These results are consistent with those in



columns 1-2. They suggest that the religion effect on informal household borrowing is more pronounced in the areas that are economically more developed and financially more affluent.

Overall, our results in this subsection show that high religiosity increases households' willingness to borrow from family and friends in a more pronounced manner when the borrowers are non-stereotype social in-groups in the household housing market or when the cities where the borrowing happens are financially more affluent.

## **5.2. An altruism explanation**

In this subsection, we propose an altruism channel for the religion effect on informal household borrowing. Altruism is a virtue and a moral practice of caring for the welfare of other human beings, even at a material loss to oneself. It is a core aspect of various religions, including the five religions covered in our study. We argue that altruism plays an important role in informal household borrowing and can explain our results on religion and informal borrowing.

In both formal and informal household loans, lenders incur a utility loss by giving up current consumptions for future consumptions. Thus, lenders would be willing to lend only if their utility loss is more than offset by any utility gain(s). In formal household loans where banks lend to households, the utility gain is the positive interest rate associated with formal loans. However, unlike formal loans, informal household loans between friends and family members typically have a stated interest rate which is overwhelming zero.<sup>9</sup> The feature of zero interest rate results in informal loans generating no material gain to lenders. Thus, for informal loans to happen, other non-interest-related utility gain needs to be in play to offset the utility loss. We argue that

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<sup>9</sup> The other important features of informal loans include limited or no collateral, lack of formal contract, and flexible terms. These features could increase the risk of lending when transacting with strangers. In this case, trust on counterparty is important to provide a sense of security on the risk associated with these features. As we discussed earlier, trust in informal loans can be generated and maintained through the network of friends and family, and religion plays a limited role in this trust. Thus, we will exclude from the discussion in this section these features and the role of trust in relation to these features. We will focus only on the feature of zero-interest-rate and on how altruism makes this feature feasible in informal loans.

one possible utility gain in informal loans is the emotional gain from a kind act of helping others, either with no expectation of payback or with an expectation of future reciprocal interactions with the borrowers. Informal loans would occur when lenders develop sufficient satisfaction from their altruistic lending, either self-sacrificial or reciprocal. In sum, this conceptual framework suggests that an altruistic and reciprocal environment could increase households' willingness to participate in informal household borrowing/lending.

Most religions in the world promote altruism and reciprocity as core moral values. For example, Buddhism promotes love and compassion that all beings care for the happiness of others. Taoism promotes social harmony and sacrifice for the greater good. Christianity draws a strong connection between lover of others and lover of God. Islam also emphasizes preference and priority to others over oneself in anticipation of fulfilling the religious duties that will qualify oneself to enter Paradise. Thus, high religiosity could help promote an altruistic and reciprocal environment and facilitate informal borrowing where altruism is a key driving force.

This altruism channel can explain our results on the positive effect of religiosity on informal household borrowing as shown in Section 4. It can also explain our cross-section results. We show in Section 5.1 that the religion effect on informal household borrowing is more pronounced for households that are non-stereotype borrowers in the household borrowing markets. Many researches have documented group-selected altruism, which suggests that human beings engage in altruistic acts based on their social group identifications or affiliations. For example, members from the same social in-group are more likely to be altruistic towards each other due to certain social emotions developed in the same social in-group such as empathy, inequity aversion, etc. Following this logic, non-stereotype households could be biased against by stereotype borrowers in informal household borrowing. In this case, religion, as an external force promoting altruism,

could be more important and more effective to facilitate informal borrowing for non-stereotype borrowers.

Communist party members, ethnic minority, highly educated families (with at least graduate-level education), high-income families, single families, and female-headed families are relatively small and non-stereotype social groups in the household borrowing markets. They could receive less empathy and compassion from stereotype social groups participating in the borrowing markets. Religion, by promoting altruism and reciprocity among different social group members, could help mitigate the sense of unfamiliar feeling or even the bias between different social groups. It thereby could induce lenders from stereotype social groups to be more willing to show altruism and more comfortable to engage in informal loans with members from non-stereotype social groups. This argument suggests that the altruism channel is also consistent with our findings of the stronger religion effect on informal borrowing by non-stereotype social groups.

Finally, the altruism channel can also explain our findings on the stronger religion effect in cities that are financially and economically more developed. High net-worth households could be less empathic towards each other (even though they may still be empathic to low income households). Religion could improve the sense of empathy among high net-worth households and facilitate informal borrowing among these households.

## **6. Conclusion**

In the paper, we study the religion effect on household borrowing, including both formal household borrowing from banks and informal household borrowing from family and friends. To study, we use China's household survey to retrieve data on household borrowing activities. We

calculate religion density based on China's religion data which cover five major religions in China, namely, Buddhism, Taoism, Islam, Christianity, and Protestantism. We find that high religiosity, i.e., high religion density, increases households' willingness to borrow. This result holds for both formal household borrowing (from banks) and informal household borrowing (from family and friends).

For formal household borrowing, our evidence suggests that the religion effect occurs since religion can enhance trust between households and banks. In particular, we find that high religiosity enhances trust between households and strangers and that enhanced trust improves households' willingness to borrow from banks. We also find that the religion effect on formal household borrowing is more pronounced in China's rural areas than in urban areas. Rural areas in China typically have weaker formal institutions such as weaker law enforcement than urban areas do. Thus, our findings on rural and urban areas suggest that religion can complement formal institutions to enhance trust and facilitate borrowing between households and banks.

However, for informal household borrowing, the trust channel does not apply. We find that religiosity does not affect trust among family members and friends. This is probably because family relation and friendship are sufficient in creating and maintaining trust between family members and friends, which subsumes the role of religion in trust building.

We conjecture that altruism could play a role in informal household borrowing which overwhelmingly features zero interest rate. High religiosity could promote altruism and facilitate altruistic informal loans. We also conjecture that members in different social groups could be less empathic towards each other, so that religion could be more effective in promoting altruism among members from different social groups. Our cross-section results are consistent with this prediction. We find that the religion effect on informal household loans is stronger for household

borrowers from small and non-stereotype social groups, such as those households with their heads being communist party members, highly educated, ethnic minority, wealthy, unmarried, or female. In addition, high income households could be less empathic towards each other (even though they may still be empathic to low income households). Religion could improve the sense of empathy among high-income households and facilitate informal household borrowing among these households. We also find evidence consistent with this argument.

Overall, our findings show that religion plays an important role in household borrowing. It affects formal household borrowing via the trust channel. Our evidence also suggests that it could affect informal household borrowing via the altruism channel.

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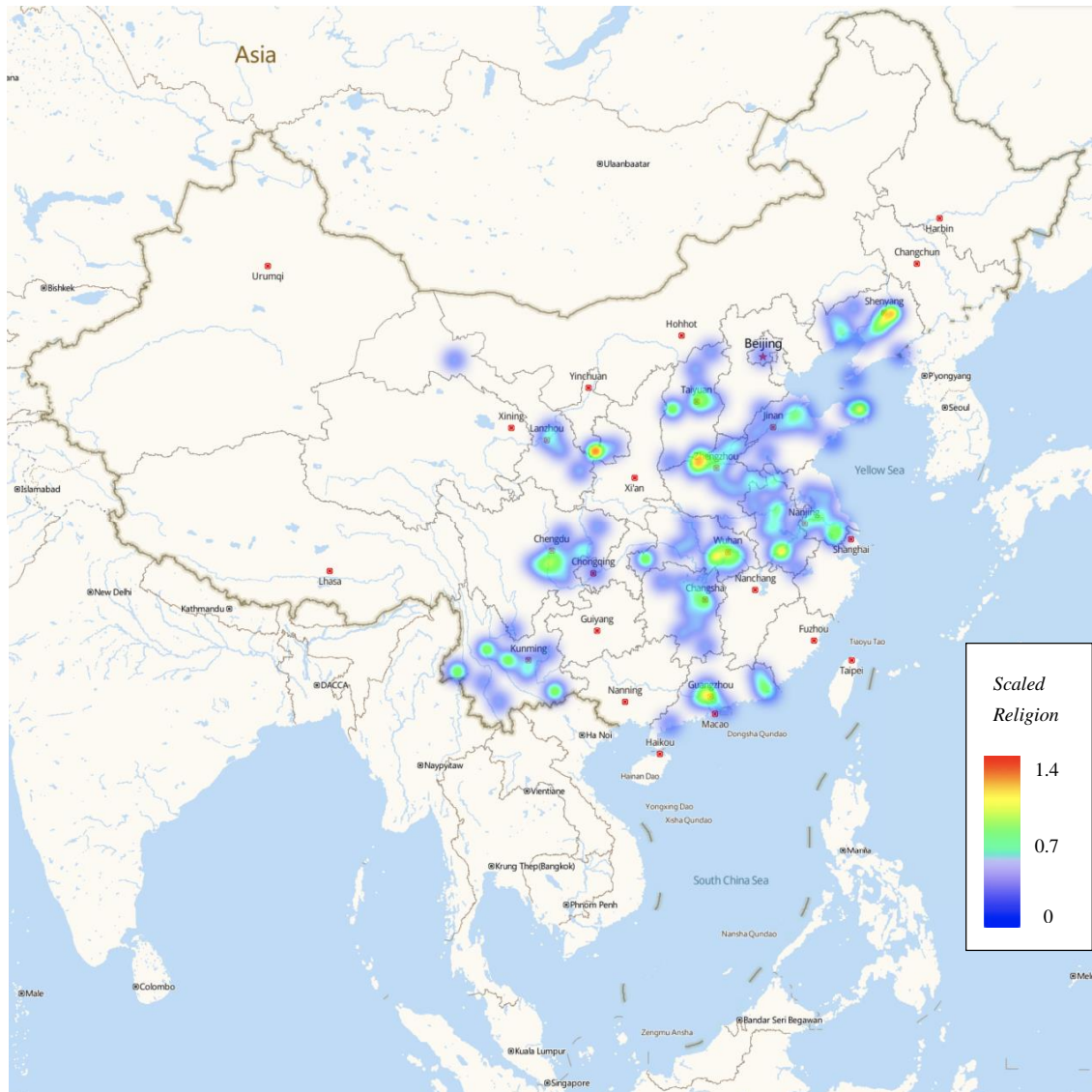
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### Figure 1: Sample Distribution

This figure depicts the distribution of scaled religion (*Religion*) across different cities in our sample. *Religion* is the city-level density scaled by the country-level density for each religion. Religion density is the number of religion site divided by the population in a city or in the country.



**Table 1: Variable Definition**

Variables	Definition
Borrowing	Household borrowing choice. No borrowing in the last three years=0; formal borrowing from banks in the last three years=1; informal borrowing from family members and friends in the last three years=2
Religion	Religion density (Number of religion sites/population) of five religions in each city scaled by the country-level religion density
Buddhism	Religion density (Number of religion sites/population) of Buddhism in a city scaled by the country-level religion density
Taoism	Religion density (Number of religion sites/population) of Taoism in a city scaled by the country-level religion density
Female	Dummy variable, Female=1; Male=0
Age	Age of household head in 2013
Married	Dummy variable, Married=1; otherwise=0
Minority	Dummy variable, minority (other than Han ethnicity) =1, Han ethnicity=0
Communist	Dummy variable, Household head being Communist Party member=1, otherwise=0
Education	Years of formal education of household head till 2013
High Edu	Dummy variable of years of formal education years longer than 12 years for household head
Health	Self-evaluation on health. very good=1; good=2; decent=3; bad=4; very bad=5
TrustStrangers <sup>10</sup>	Trust on strangers. not trustworthy at all=1; not very trustworthy=2; so-so=3; trustworthy=4; very trustworthy=5
TrustFriends <sup>11</sup>	Trust on relatives and friends. not trustworthy at all=1; not very trustworthy=2; so-so=3; trustworthy=4; very trustworthy=5
Rural	Household in rural area=1; Household in urban area=1
Incomeper	Average disposable income per household member in 2013 (in RMB)
Number	Number of household members
GDP	Annual GDP in each city (in 10 thousand RMB)
GDPPER	GDP per capita in each city (in 10 thousand RMB)
Population	Population in each city (in 10 thousand)
Loans	Annual total loans in each (in 10 thousand RMB)
Deposits	Annual total deposits in each city (in 10 thousand RMB)

<sup>10</sup> The respondents were asked to make single choice among “1.not trustworthy at all; 2.not very trustworthy; 3.so-so; 4.trustworthy; 5.very trustworthy; 6.unsure/no answer” when they answered the question “Would you say that others (beside your relatives or friends) are trustworthy?”. Answer 6 is coded as missing value.

<sup>11</sup> The respondents were asked to make single choice among “1.not trustworthy at all; 2.not very trustworthy; 3.so-so; 4.trustworthy; 5.very trustworthy; 6.unsure/no answer” when they answered the question “Would you say that your relatives or friends are trustworthy?”. Answer 6 is coded as missing value.

**Table 2: Sample Statistics**

This table provides the statistics of the variables used in the tests. Variables are defined in Table 1. *GDP, Loans, Deposits* are in million RMB. *Population* is in thousands.

Variables	Obs.	Mean	S.D.	Min	Max
Borrowing	16,664	0.597	0.857	0	2
Religion	16,664	0.219	0.289	0.003	1.550
Buddhism	16,664	0.067	0.109	0	0.884
Taoism	16,664	0.015	0.028	0	0.170
TrustStrangers	15,757	3.137	0.822	1	5
TrustFriends	15,357	3.806	0.883	1	5
Female	16,366	0.160	0.366	0	1
Age	16,664	52	12	15	98
Married	16,664	0.858	0.349	0	1
Minority	16,664	0.040	0.195	0	1
Communist	16,664	0.176	0.381	0	1
Education	16,664	8.438	3.689	0	21
High Edu	16,664	0.208	0.406	0	1
Health	16,664	2.173	0.927	1	5
Rural	16,664	0.608	0.488	0	1
Incomeper	16,664	18,934	18,669	117	633,333
Number	16,664	3.43	1.37	1	13
GDP	16,664	$4.610 \times 10^7$	$5.530 \times 10^7$	$2.522 \times 10^6$	$1.95 \times 10^8$
GDPPER	16,664	61,385	58,190	8,407	467,749
Loans	14,630	$4.260 \times 10^7$	$6.100 \times 10^7$	$2.674 \times 10^6$	$2.200 \times 10^8$
Deposits	14,630	$5.910 \times 10^7$	$8.120 \times 10^7$	$3.978 \times 10^6$	$3.380 \times 10^8$
Population	16,664	733.016	736.259	109.800	3358.400

Note: In the following regressions, BudTao stands for Buddhism+Taoism, NonBudTao stands for Religion-BudTao.

**Table 3: The Religion Effect on Aggregate Household Borrowing at the City Level.**

The table reports the results from OLS regressions on the log of total amount of loans in each city. *t*-statistics are provided in parentheses. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	Log(Loans)	Log(Loans)	Log(Deposits)	Log(Loans)
Constant	-4.00*** [4.62]	-4.11*** [6.62]	-1.49*** [3.04]	-2.54*** [5.86]
Religion	0.55*** [3.91]	0.57*** [5.84]	0.42*** [4.63]	0.16** [2.12]
Ln(GDP)	1.21*** [23.93]	1.28*** [30.67]	1.09*** [30.23]	0.18** [2.62]
Log(Population)		-0.17*** [3.03]	0.00 [0.09]	-0.16*** [3.61]
Rural		-0.01 [0.17]	-0.01 [0.29]	-0.01 [0.25]
Log(Deposits)				1.00*** [17.06]
R <sup>2</sup>	0.87	0.87	0.89	0.97
N	110	217	217	110

**Table 4: The Religion Effect on Household Borrowing at the Household Level.**

This table reports the results from multinomial logistic regressions on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). Panels A and B report the results from the same regressions, with Panel A reporting the results from the formal household borrowing equation and Panel B reporting the results from the informal household borrowing equation. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

*Panel A: The religion effect on formal household borrowing from banks (vs. no borrowing).*

	(1)	(2)	(3)	(4)	(5)
Constant	2.200*** [3.03]	2.551*** [3.56]	1.849** [2.57]	2.366*** [3.31]	2.843*** [3.97]
Religion	0.068*** [7.19]				
Buddhism		1.034*** [4.84]			
Taoism			9.602*** [11.06]		
BudTao				1.286*** [6.88]	
NonBudTao					-0.000 [0.67]
Rural	0.132** [1.99]	0.119* [1.80]	0.118* [1.78]	0.117* [1.77]	0.120* [1.81]
Female	0.129* [1.72]	0.129* [1.71]	0.136* [1.81]	0.132* [1.75]	0.124* [1.65]
Log(Age)	-1.831*** [15.13]	-1.843*** [15.25]	-1.797*** [14.80]	-1.830*** [15.13]	-1.861*** [15.41]
Minority	0.264** [2.11]	0.320** [2.54]	0.132 [1.01]	0.279** [2.22]	0.368*** [2.91]
Communist	0.334*** [4.82]	0.342*** [4.94]	0.326*** [4.70]	0.341*** [4.92]	0.341*** [4.92]
Education	-0.022 [0.35]	-0.032 [0.50]	0.004 [0.06]	-0.022 [0.34]	-0.048 [0.76]
Health	0.181*** [5.54]	0.178*** [5.46]	0.165*** [5.04]	0.176*** [5.41]	0.179*** [5.47]
Married	-0.165** [2.15]	-0.140* [1.82]	-0.112 [1.46]	-0.138* [1.81]	-0.133* [1.74]
Incomeper	0.149*** [3.15]	0.125*** [2.70]	0.165*** [3.54]	0.133*** [2.88]	0.114** [2.45]
Log(Number)	0.952*** [12.84]	0.971*** [13.12]	0.970*** [12.97]	0.974*** [13.14]	0.966*** [13.06]
Observations	16,664	16,664	16,664	16,664	16,664
Pseudo R <sup>2</sup>	0.05	0.05	0.05	0.05	0.04

*Panel B: The religion effect on informal household borrowing from family and friends (vs. no borrowing).*

	(1)	(2)	(3)	(4)	(5)
Constant	6.138*** [12.22]	6.266*** [12.53]	6.005*** [11.90]	6.153*** [12.28]	6.517*** [13.05]
Religion	0.044*** [6.00]				
Buddhism		0.891*** [5.46]			
Taoism			5.922*** [9.07]		
BudTao				0.992*** [6.73]	
NonBudTao					-0.000 [0.76]
Rural	0.217*** [4.38]	0.209*** [4.22]	0.210*** [4.22]	0.209*** [4.22]	0.209*** [4.22]
Female	-0.011 [0.20]	-0.011 [0.20]	-0.007 [0.12]	-0.009 [0.15]	-0.015 [0.27]
Log(Age)	-1.549*** [17.29]	-1.555*** [17.36]	-1.532*** [17.09]	-1.546*** [17.26]	-1.573*** [17.58]
Minority	0.211** [2.33]	0.232** [2.55]	0.132 [1.43]	0.201** [2.21]	0.278*** [3.09]
Communist	0.027 [0.49]	0.031 [0.58]	0.022 [0.41]	0.030 [0.55]	0.030 [0.56]
Education	-0.075* [1.96]	-0.078** [2.04]	-0.064* [1.66]	-0.072* [1.88]	-0.091** [2.38]
Health	0.237*** [10.62]	0.235*** [10.56]	0.229*** [10.24]	0.234*** [10.48]	0.236*** [10.61]
Married	0.008 [0.13]	0.025 [0.41]	0.037 [0.59]	0.027 [0.44]	0.030 [0.48]
Incomeper	-0.248*** [8.44]	-0.257*** [8.80]	-0.242*** [8.20]	-0.252*** [8.61]	-0.266*** [9.11]
Log(Number)	0.582*** [11.77]	0.600*** [12.12]	0.590*** [11.87]	0.599*** [12.10]	0.596*** [12.04]
Observations	16,664	16,664	16,664	16,664	16,664
Pseudo R <sup>2</sup>	0.05	0.05	0.05	0.05	0.04

**Table 5: The Religion Effect on Formal Household Borrowing in Rural and Urban Areas.**

The results are from multinomial logistic regressions on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). This table reports only the results on the likelihood of formal household borrowing (*Borrowing* = 1) relative to no borrowing. The control variables, *Female*, *Age*, *Minority*, *Communist*, *Education*, *Health*, *Married*, *Incomeper*, and *Numberper*, are not reported. *Gdpper* is GDP per capita. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
Constant	2.577*** [2.89]	-0.059 [0.04]	2.207*** [3.03]	6.047*** [7.27]
Religion	0.088*** [7.69]	0.024 [1.38]	0.015 [0.85]	-0.696*** [4.62]
Rural			-0.053 [0.65]	-0.139 [1.64]
Rural × Religion			0.079*** [3.85]	0.110*** [4.73]
Log(GDPPER)				-0.450*** [9.38]
Log(GDPPER) × Religion				0.066*** [4.58]
Sample	Rural Areas	Urban Areas	All Areas	All Areas
Control Variables	Yes	Yes	Yes	Yes
Observations	10,126	6,538	16,664	16,664
Pseudo R <sup>2</sup>	0.04	0.05	0.05	0.05

**Table 6: Religion and Trust in Formal Household Borrowing.**

This table reports results from OLS regressions (columns 1-3) and ordered logistic regressions (column 4). The dependent variable is *TrustStranger*, the level of trust towards strangers. The results in column 5 are from multinomial logistic regression on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). This table reports only the results on the likelihood of formal borrowing (*Borrowing* = 1) relative to no borrowing. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

Dep. Variable	<i>TrustStranger</i>				<i>Borrowing</i>
	(1)	(2)	(3)	(4)	(5)
Constant	3.046*** [17.04]	3.120*** [17.49]	3.131*** [17.61]	3.517*** [8.47]	6.343*** [12.28]
Religion	0.014*** [5.27]			0.034*** [5.52]	
BudTao		0.122** [2.31]			
NonBudTao			0.000*** [3.17]		
TrustStranger					0.114*** [3.36]
Rural	0.114*** [6.98]	0.112*** [6.84]	0.115*** [6.99]	0.258*** [6.82]	0.112* [1.66]
Female	-0.036* [1.91]	-0.037* [1.94]	-0.039** [2.06]	-0.084* [1.92]	0.122 [1.59]
Log(Age)	0.120*** [3.87]	0.115*** [3.72]	0.113*** [3.65]	0.286*** [3.99]	-1.893*** [15.40]
Minority	-0.085** [2.46]	-0.072** [2.11]	-0.063* [1.85]	-0.146* [1.88]	0.365*** [2.84]
Communist	0.075*** [4.07]	0.076*** [4.12]	0.075*** [4.11]	0.190*** [4.43]	0.322*** [4.55]
Education	0.022 [1.59]	0.020 [1.41]	0.018 [1.29]	0.050 [1.56]	-0.077 [1.21]
Health	-0.066*** [8.36]	-0.066*** [8.38]	-0.066*** [8.27]	-0.165*** [8.96]	0.184*** [5.52]
Married	-0.008 [0.41]	-0.002 [0.12]	-0.005 [0.27]	-0.023 [0.50]	-0.145* [1.86]
Incomeper	-0.045*** [4.34]	-0.049*** [4.74]	-0.049*** [4.70]	-0.104*** [4.35]	0.142*** [3.02]
Log(Number)	0.041** [2.46]	0.045*** [2.71]	0.041** [2.47]	0.095** [2.49]	0.962*** [12.83]
Regression	OLS	OLS	OLS	Ordered Logistic	Multinomial Logistic
Observations	15,757	15,757	15,757	15,757	15,757
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.02	0.02	0.02	0.01	0.04



**Table 7: The Religion Effect on Informal Household Borrowing in Rural and Urban Areas.**

The results in the table are from logistic regressions on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). This table reports only the results on the likelihood of informal household borrowing (*Borrowing* = 2). The control variables, *Female*, *Age*, *Minority*, *Communist*, *Education*, *Health*, *Married*, *Incomeper*, and *Numberper*, are not reported. GDP/capita is GDP per capita. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on the standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
Constant	5.992*** [9.91]	8.794*** [8.82]	6.128*** [12.20]	9.680*** [16.45]
Religion	0.047*** [5.13]	0.042*** [3.19]	0.047*** [3.78]	-0.648*** [5.73]
Rural			0.226*** [3.70]	0.163*** [2.60]
Rural × Religion			-0.002 [0.14]	0.018 [1.12]
Log(GDPPER)				-0.412*** [11.27]
Log(GDPPER) × Religion				0.065*** [5.93]
Sample	Rural Areas	Urban Areas	All Areas	All Areas
Control Variables	Yes	Yes	Yes	Yes
Observations	10,126	6,538	16,664	16,664
Pseudo R <sup>2</sup>	0.04	0.05	0.05	0.05

**Table 8: Religion and Trust in Informal Household Borrowing.**

This table reports results from OLS regressions (columns 1-3) and ordered logistic regressions (column 4). The dependent variable is *TrustFriends*, the level of trust towards strangers. Column 5 reports only the results on the likelihood of informal household borrowing (*Borrowing* = 2) relative to no borrowing, based on multinomial logistic regressions on *Borrowing*. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on the standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

Dep. Variable	<i>TrustFriends</i>			<i>Borrowing</i>	
	(1)	(2)	(3)	(4)	(5)
Constant	3.767*** [20.42]	3.779*** [20.50]	3.779*** [20.63]	1.447*** [3.66]	5.843*** [11.43]
Religion	-0.000 [0.09]			0.003 [0.45]	
BudTao		-0.040 [0.66]			
NonBudTao			-0.000 [1.36]		
TrustFriends					0.182*** [7.72]
Rural	0.061*** [3.54]	0.061*** [3.55]	0.060*** [3.47]	0.117*** [3.22]	0.202*** [4.03]
Female	0.002 [0.12]	0.002 [0.10]	0.003 [0.15]	0.019 [0.44]	-0.026 [0.46]
Log(Age)	-0.013 [0.39]	-0.014 [0.42]	-0.013 [0.40]	-0.002 [0.03]	-1.582*** [17.51]
Minority	-0.125*** [3.36]	-0.122*** [3.31]	-0.125*** [3.43]	-0.255*** [3.44]	0.315*** [3.45]
Communist	0.065*** [3.34]	0.065*** [3.34]	0.065*** [3.34]	0.178*** [4.33]	0.004 [0.07]
Education	0.038*** [2.60]	0.038** [2.55]	0.038*** [2.59]	0.085*** [2.71]	-0.097** [2.53]
Health	-0.077*** [9.09]	-0.077*** [9.07]	-0.077*** [9.11]	-0.205*** [11.25]	0.254*** [11.23]
Married	-0.026 [1.20]	-0.026 [1.20]	-0.024 [1.14]	-0.070 [1.53]	0.024 [0.39]
Incomeper	0.013 [1.18]	0.012 [1.15]	0.012 [1.12]	0.026 [1.12]	-0.263*** [8.96]
Log(Number)	0.029* [1.67]	0.029* [1.66]	0.030* [1.75]	0.054 [1.45]	0.581*** [11.65]
Regression	OLS	OLS	OLS	Ordered Logistic	Multinomial Logistic
Observations	16,366	16,366	16,366	16,366	16,366
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.01	0.01	0.01	0.01	0.05

**Table 9: Cross-Section Difference in the Religion Effect on Informal Household Borrowing.**

The results are from multinomial logistic regressions on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). This table reports only the results on the likelihood of informal household borrowing (*Borrowing* = 2), relative to no borrowing. The control variables consist of *Rural*, *Female*, *Age*, *Minority*, *Communist*, *Education*, *Health*, *Married*, *Incomeper*, and *Numberper*. Some of the control variables are not reported. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

*Panel A: Cross-section difference among households with different social status.*

	(1)	(2)	(3)
Constant	6.273*** [12.38]	6.271*** [12.29]	6.303*** [12.35]
Religion	0.037*** [4.54]	0.039*** [5.09]	0.037*** [4.67]
Communist	-0.046 [0.65]	0.053 [0.95]	0.051 [0.92]
Religion × Communist	0.043** [2.28]		
Minority	0.215** [2.38]	-0.004 [0.03]	0.217** [2.34]
Religion × Minority		0.060** [2.19]	
High Education	-0.162*** [2.58]	-0.164*** [2.62]	-0.266*** [3.52]
Religion × High Education			0.052** [2.45]
Other Controls	Yes	Yes	Yes
Observations	16,664	16,664	16,664
Pseudo R <sup>2</sup>	0.05	0.05	0.05

*Panel B: Cross-section difference among households with other different household characteristics.*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	7.194*** [13.04]	6.039*** [11.98]	5.906*** [11.68]	6.173*** [12.29]	6.009*** [9.94]	8.834*** [8.86]
Religion	-0.370*** [4.16]	0.099*** [4.34]	0.162*** [5.58]	0.037*** [4.70]	0.042*** [4.39]	0.031** [2.05]
Incomeper	-0.351*** [9.59]	-0.250*** [8.49]	-0.245*** [8.32]	-0.248*** [8.46]	-0.177*** [5.39]	-0.508*** [7.56]
Religion × Incomeper	0.045*** [4.69]					
Log(Number)	0.593*** [11.99]	0.687*** [10.60]	0.589*** [11.88]	0.583*** [11.78]	0.542*** [9.38]	0.564*** [5.46]

Religion × Numberper		-0.044**				
		[2.51]				
Married	-0.016	0.009	0.236***	0.006	-0.004	-0.151
	[0.25]	[0.15]	[2.85]	[0.10]	[0.05]	[1.52]
Religion × Married			-0.125***			
			[4.19]			
Female	-0.009	-0.009	-0.011	-0.121*	-0.012	-0.195**
	[0.15]	[0.16]	[0.19]	[1.67]	[0.10]	[1.99]
Religion × Female				0.049**	0.066*	0.042
				[2.40]	[1.94]	[1.44]
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	All	All	All	Rural	Urban
Observations	16,664	16,664	16,664	16,664	10,126	6,538
Pseudo R <sup>2</sup>	0.05	0.05	0.05	0.05	0.04	0.05

**Table 10: The Religion Effect on Informal Household Borrowing in Different Cities**

The results in the table are from logistic regressions on *Borrowing*, the likelihood of household borrowing formally from banks (*Borrowing* = 1), informally from family and friends (*Borrowing* = 2), or no borrowing (*Borrowing* = 0, benchmark category). This table reports only the results on the likelihood of informal household borrowing (*Borrowing* = 2), relative to no borrowing. The control variables consist of *Rural*, *Female*, *Age*, *Minority*, *Communist*, *Education*, *Health*, *Married*, *Incomeper*, and *Numberper*. Their coefficients are not reported. All variables are defined in Table 1. *t*-statistics (in parentheses) are based on standard errors adjusted for heteroskedasticity. \*, \*\*, \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
Constant	9.654*** [16.46]	9.876*** [16.26]	8.191*** [13.37]	8.320*** [13.12]
Religion	-0.621*** [5.74]	-0.701*** [5.78]	-0.552*** [4.25]	-0.593*** [4.23]
Incomeper	-0.160*** [5.16]	-0.199*** [4.94]	-0.171*** [5.40]	-0.196*** [4.56]
Log(GDPPER)	-0.409*** [11.28]	-0.392*** [10.40]		
Religion × Log(GDPPER)	0.064*** [5.92]	0.058*** [5.01]		
Log(Deposit/Population)			-0.267*** [7.39]	-0.256*** [6.73]
Religion × Log(Deposit/Population)			0.055*** [4.41]	0.051*** [3.82]
Religion × Incomeper		0.015 [1.47]		-0.019 [1.21]
Other Controls	Yes	Yes	Yes	Yes
Observations	16,664	16,664	14,630	14,630
Pseudo R <sup>2</sup>	0.05	0.05	0.05	0.05