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"Striving for Savings" – religion and individual economic behavior

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Abstract

In the Neoclassical growth model the saving ratio and human capital might be seen as the most important factors fostering economic growth. At last since Weber [2005 (1904/05)] it seems clear, that religious beliefs and involvement shapes both social and economic human behavior. This paper tests the hypothesis whether religious belonging and believing influence a household's economic decision-making in the USA, which was found to foster economic growth, namely the saving ratio at the individual level. Using data from the Panel Study of Income Dynamics (PSID), we find religious effects on saving. Regarding the decision to save money no large differences within the Christian religions, namely Protestants and Catholics, were found. However, large differences exist compared to non-religious people as well as to Non-Christians and Jews.

Key words - growth, religion, individual saving behavior

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The data from the Panel Study of Income Dynamics (PSID) used in this paper are drawn from http://psidonline.isr.umich.edu/. For a full description of the data please see the Guide to interviewing procedures and codebooks. All analyses used Stata 10. Do-Files are available from the author on request.

1. Introduction

"For man's character has been moulded by his every-day work, and the material resources which he thereby procures, more than by any other influence unless it be that of his religious ideals; and the two great forming agencies of the world's history have been the religious and the economic." Alfred Marshall, Principles of Economics

Since Adam Smith, many theories have been developed to discuss the causes of different growth rates of per capita income between national economies. Until now, the focus usually lay on the *neoclassical growth theory*, which emphasizes the role of initial income, investment, and population growth, *on institutions,* which provide the necessary structures for economic growth, and *on geography,* which counts for the endowment with natural resources and prerequisites. However, countries not only differ in their geography, institutions, and capital (physical, human and social), but also in their culture to use these possibilities efficiently. For example, some cultures provide countries with the possibility to enhance strong family ties, and other cultures enhance a strong propensity to save which seems to be conductive to economic growth.

At last since Weber's [2005 (1904/05)] *Protestant Ethic* it seems clear that religious belief and involvement shape both social and economic behavior (see Iannaccone 1998). Hence, it is not surprising that Guiso et al. (2003) found individual attitudes towards trust, competition and thriftiness to be affected by one's religious affiliation. They showed, based on the World Values Survey for the years 1981 to 1997, that religious people, among others, are less willing to break the law, believe more in the fairness of the market and have less progressive attitudes towards working women. Moreover, they found that Protestants are trusting others and favor incentives more, Catholics value thriftiness more and favor both private property and competition more. Contrary to that, Muslims and Hindus are strongly against competition. Although the authors claim that different behavioral outcomes are the result of differing personal attitudes and the surrounding environment, it is important to note that what is only to be observed are the actions of the individuals, and not their attitudes behind. In general, large deviations often exist during the translation of values and beliefs into concrete actions and behavior. For example, social pressure might cause an individual to choose differently in public than in private (Kuran 1995). Moreover, their analysis did not consider the impact of the attitude to be thrifty taught by the religion on the individual saving ratio.

Not only the impact of religions on attitudes has been examined but also its impact on aggregate economic outcomes. Studies employing cross-country growth-regression analysis

find empirical evidence for the impact of religious beliefs on (per capita) income, (per capita) GDP growth, the saving ratio, and measures of institutional quality. Regarding the saving ratio, Guiso et al. (2006), for example, replicate their paper from 2003 using data from the General Social Survey for the USA. They found that the distinct positive attitude of Catholics towards the value of teaching thriftiness, compared to Protestants and non-religious people, have a positive impact on the national saving rate. However, they leave the question open how far religious affiliation and activities might influence the individual decision to save.

Beside the studies of Carroll (1994), who compared the saving behavior of immigrants to Canada from different cultural backgrounds using data from the Canadian Survey of Family Expenditures for 1982 and 1986 and did not find any evidence for cultural factors effecting the saving patterns, and Renneboog and Spaenjers (2009), there are no analysis of the relationship between religion and the individual saving rate. The latter analyzed whether and how religious denominations influence the financial decisions of Dutch households. Covering the years 1995 to 2008, they use data from the DNB Household Survey. They showed that religious households report more frequently that they have saved in the previous year. Thereby the effect is similar in magnitude for Catholic and Protestant households, who are about 3% more likely to save than non-religious households.

Recently, a gap in the literature can be stated in terms of empirical analyses that relate the individual saving ratio to one's religious choices. Although some studies find a impact of religious beliefs and belonging on the saving ratio on the aggregate level and some studies state a positive relationship between religious activities and thriftiness (Guiso et al. 2003, 2006), analysis on the microeconomic level are scarce. Moreover, a significant relationship between religion and thriftiness does not automatically imply a similar relationship between religion and the individual decision to save. The central question is whether religiosity has any impact on economic relevant decisions on the microeconomic level of households and individuals.

This paper focuses on the estimation of the effect of religiosity on a household's saving decision in the USA. The US religious market is a very interesting one for studying the effect of religion on the individual decision-making process, for mainly two reasons. First, despite the ongoing secularization trend and the growing tendency of private forms of religiosity since the beginning of the 1990's in the USA, the majority of the population is still religious affiliated. Moreover, the American religious market is very dynamic and people often change their religion. Following the U.S. Religious Landscape Survey (2008), more than a quarter of adult Americans have left the faith in which they were raised in favor of another religion - or

no religion at all. If the changes within the several Protestant denominations are included, 44% of the adults have changed their religious affiliation. Second, the US is characterized by a broad range of denominations. As a consequence of immigration, there is substantial variety in the types of religious beliefs. According to the Pew Forum on Religion & Public Life (2008), 51.3% of the American population is Protestant. However, their composition is not uniform at all. Taken together, Evangelical Protestants account for 26.3% of all Protestants. Mainline Protestants make up 18.1%, whereas 6.9% are Black Protestants. The second largest denomination is the Roman Catholic Church. 23.9% of the interviewed people claim to be Catholic. Jews, who are already widely considered in the literature, count for 1,7% of the population. Muslims, Hindus and Buddhists, to which we refer as Non-Christian religions, make up about 1.7% of the population in 2008. Almost 5% of the population belong to another religion. The other 16% of the population in the USA does not formally belong to a specific religion.

Following Carroll (1994), we examine the direct impact of religious involvement on the individual decision to save. Next to the effects of belonging, measured by the religious affiliation, on the saving behavior, the effects of believing, measured by church attendance, will also be considered. Going to church is assumed to influence the real economic behavior independently of whether the person indeed believes in the religion. In other words, we are suggesting that no differences exist between intrinsic and extrinsic religiousness (Allport and Ross 1967, Gorsuch 1988). Additionally, we will interpret our results with respect to the behavior of non-religious people, since in the literature a shortcoming concerning the inclusion of non-religious groups can be recognized.

The rest of the paper is structured as follows. In the next section a theoretical background concerning the potential economic effects of religions is developed. Section 3 will explain the methods which are used to answer the question whether there is a distinctive behavior between religious and non-religious people regarding their decision to save money. The data as well as the results are analyzed in Section 4; and Section 5 concludes.

2. Theoretical considerations

The paper focuses on individuals who were generally referred to as religious people, i.e. who share a core set of beliefs, activities, and institutions based on their faith in supernatural forces (Stark and Bainbridge 1985). The decision why people believe in a supreme being, often called God, is thereby seen as exogenous, and only the decision of how far an individual wants to be involved in the religion is open to rational considerations. Religions are primarily defined by their beliefs (e.g. about the structure of sins, piety and salvation), which shape the

individual behavior. These beliefs are anchoring in the institutional sources of the religion, like canonical texts (the Old and New Testament, the Quran, or The Vedas), the interpretations of religious teachers (priests, monks, gurus) and rituals. However, the effects on values and individual actions not only depend on the shaped norms and values, but also on their enforcement mechanisms. Briefly, different behavior patterns of religious people might be rooted in distinct belief sets and enforcement mechanisms of the religions (Arruñada 2004).

Following McCleary (2007), a comparative analysis of Catholics, Protestants Jews and Non-Christian religions, like Hinduism, Buddhism and Islam, "shows that each promotes accumulation of wealth […], while discouraging idleness, debt, and poverty". She argues that the primary difference across the religions is with respect to distinctive opinions about the concepts of salvation and the role of charity. Salvation, which is a spiritual goal, can be obtained differently. If religious doctrines provide the possibility to earn salvation by one's own effort, people will be more likely to act according to the actions that contribute to attaining salvation. As McCleary (2007) pointed out, religious doctrines concerning the earning of salvation give incentives to the believer to take certain actions. Accordingly, religious beliefs "have implications for behaviour", such as saving money or not.

Another aspect of the differences between religious and non-religious people refers to the planning horizon of religious people. Since religious people believe in an eternal life, respectively rebirth, they seem to have a longer planning horizon. which also might influence their decision to transfer current consumption in the future by saving money. Indeed, one might argue the more religious the people are, the more money they save.

For example, when looking at the differences between Catholics and Protestants it becomes clear that, although both religions are even based on the same religious scripture, their main values, which are related to economic issues, are different (Cervellati et al. 2008). Whereas Catholicism is based on the theology of salvation by works and faith in God, Protestants believe in Predestination. They cannot earn salvation by good works or good conduct alone, since the decision, who comes to heaven and who comes to hell, is taken solely by God. Good works merely were seen as means to show one's fate to others. Worldly success served as a signal to be chosen by God; it was a mark of His blessing (Noland 2005). In contrast, in Catholicism it is said that God do not want the believer to strive for fortune, since "the use of the things of this world" and the "attachment to riches" is "against the spirit of evangelical poverty" and "hinder them in their quest for perfect love" (Lumen gentium 42, 235). Furthermore, McCleary highlighted another way of salvation: charitable giving.

Although acts of charity are seen as increasing the grace for the doer, the Catholic Church values the imitation of Christ "to the degree that one assumes a state of poverty or subjects oneself to the will of another (forms of servitude)" (McCleary 2007:66) over giving to others. To the contrary, Protestants see good works as obligatory, since they believe more in a subjective relation to God, and that God acts in and through the people. universal charity is seen as obligatory and the doer cannot earn salvation through it.

As Arruñada (2004) showed, another point which differentiates Catholics from Protestants is with respect to the norm enforcing role of the religious institutions. Catholicism provides the believers with the ability of private confession to the priest. However, this fact lowers dramatically the positive effect of the system of salvation by good works. Whereas the Roman Catholic church plays a central role in the enforcement of moral rules, the empathize of salvation by grace alone reduces the role of the church as a mediating agent in Protestantism, and fosters the enforcement of the rules by self-examination as well as by the other religious group members. Religions not only differ concerning their enforcement mechanisms, but also with respect to the strictness of the enforcement of the norms and rules.

What might these distinct beliefs and enforcement mechanisms mean with respect to the saving decision? Religious people, in general, and especially Protestants have a "greater sense of individual responsibility" (Guiso et. al. 2003). Because of this stronger external locus of control inherent in Protestantism, which means that each individual has to decide on his own what is right and wrong, Protestantism focus on the individual and social responsibly (Stolz and Williamson 2003). Self-responsibility and Predestination, on the one side, which might foster savings, and the concept of universal charity, on the other side, which might hamper savings, seem to be reverse forces. With respect to Catholics, on the one hand, the possibility of confessing one's sins, and, on the other hand, the belief that the "imitation" of Jesus Christ is more important than charitable giving limit the positive effects of good works on the saving behavior. The relatively low self-responsibility seems therefore to have negative effects on the saving of Catholics. To summarize, we are suggesting that there are no big differences concerning the saving behavior of Protestants and Catholics, since it seems as if the positive and negative impacts of the both religions on the decision to save are countervailing forces. In any case, Catholics and Protestants should save more than non-religious people.

Although there are enormous differences across the Non-Christian religions, like Islam, Hindus and Buddhists, unfortunately our data do neither outline differences in the Non-Christian religions nor the differences between Non-Christians and non-religious people at all. Nevertheless it is worth to mention some facts. For example, the Quran explicitly demands

that nobody should accumulate more wealth than that required to meet one's needs (Quran 2:219 "They also ask you what to give to charity: say, "The excess."). Moreover, living in religious asceticism is prohibited and doing acts of charity, like performing zakat, is obligatory. (Quran 2:277 "Truly those who believe, and do deeds of righteousness, […], and give Zakat, they will have their reward with their Lord."). Contrary to the Islam, in Buddhism worldly success and wealth is seen as a result of good karma. Wealth on itself is not seen as sinful, only the underlying intensions when using the resources can be good or bad (McCleary 2007) The next section is dealing with the data and methods which will be used to investigate the influence of one's religious belonging and believing on the decision to save.

3. Methodology

To measure the impact of religion on measures for economic growth, namely the individual saving behavior, we estimate, depending on the nature of the dependent variable, two different models. In general, our multivariate estimation equation is given as

(1) $Y = \beta R_i + \gamma D_i + \varepsilon_i$

where *Y* is our dependent variable. It is a measure for the decision to save, namely the net value of the amount which was saved by the family (SAVINGS), or the underlying decision whether to save or not (SAVED). *R* and *D* are the vectors of different sets of independent variables, and ε is a stochastic error. *R* is a vector of dummy variables for the religious affiliation, i.e. being Catholic, Protestant, Jew, Non-Christian or non-religious; and *D* is a vector of demographic variables. The subscript *i* indicates a specific individual head of household from N random individuals. In the two models we will use cluster-robust standard errors by person to deal with possible unobserved household effects, that is, that decisions of the same individual might be correlated across time. (Petersen.2009).

Using Equation (1) we employ an Ordinary Least Squares (OLS) regression regarding the variable SAVINGS. Therefore the usual assumptions about the independent variables and the distribution of the stochastic error (Long 1997: 12) are assumed to be fulfilled.

In a second model we regress the religious variables and the controls on the underlying decision to save (SAVED). Since saving money or not is seen as a dummy variable, we use a probit model to estimate the probability that an individual will save money $P(S_B=1)$. This model is fitted by the maximum likelihood (ML). After Long (1997) and Wooldrige (2002) we re-specify Equation (1) and estimate the decision to save or not with the probit model which is defined as

(2) $$\Pr(S_B = 1 \mid x) = F(x\beta) \equiv \int_{-\infty}^{x\beta} \phi(u)du, \qquad \text{with } \phi(x\beta) = \frac{1}{\sqrt{2\pi}} \exp(-\frac{x\beta^2}{2})$$

where F is the Φ cumulative distribution function for the normal distribution and ϕ is the standard normal density. S is the binary dependent outcome variable, i.e. the decision to save money or not, and $x\beta$ denotes the linear combination of all explanatory variables, i.e. religious affiliation *(R)* and demographic variables *(D*), like age, gender, income, wealth, and education, which might influence a person's decision save. Thereby β, which is given by β_1 through β_k, specifies the strength of this influence. The probability of observing whether the person saved money or not, given the different x's, is the cumulative density evaluated at the point $x_k\beta_k$.

Given the nonlinearity of probit models, which means that the relationship between a change in the value of an independent variable and the estimated change in the probability of a positive outcome cannot be discerned directly from the variable's coefficient, not only a probit model is estimated, but also the marginal effects. The marginal effect, i.e. the partial change in the probability, is computed by taking the partial derivative of Equation (2) with respect to x_k:

$$(3) \qquad \text{marginal effect of } x_k = \frac{\partial PR(S_B = 1 \mid x)}{\partial x_k}$$

The marginal effect of an independent variable x_k is the slope of the probability curve relating x_k to $Pr(S_B=1|x)$ holding all other x constant. Thus, the partial effect of x_k on $Pr(S_B=1|x)$ depends on x. The derivative is evaluated at a point that is usually, and by default, the means of the independent variables. The marginal effect for a dummy variable is not obtained by differentiation, but as a difference of the predicted value at 1 and the predicted value at 0.

4. Estimation

In this section, on the one hand, we explain the used data sets and the including variables, and, on the other hand, we document our basic result: there exist a positive relationship between the saving behavior of an individual and her religion, i.e. religious people and people attending more frequently church have a higher propensity to save.

4.1 Data Description

Using the PSID survey, a longitudinal study of a representative sample of the U.S. population, our data include individual and family variables on an array of economic, social and political indicators. We use data for the years 2003 and 2005 for which consistent information was available on measures of religious involvement and believing.

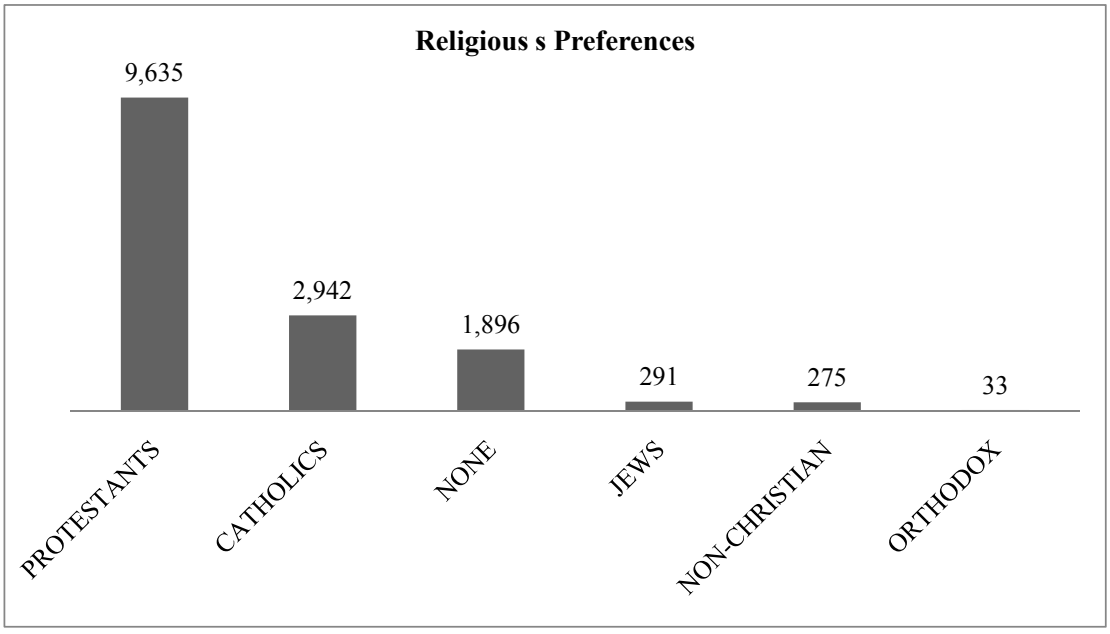
Out of the original 47,381 individuals we discard 38,354 individuals due to that they were not real current heads, due to that there was no information on religion and no information on church attendance. Our dataset includes 15,824 observations and 9,027

individuals aged from 16 to 99 who were current head of household (men, women, and children).

We use two dependent variables to measure the impact of religious believing on the saving behavior. SAVED, encompass any money in checking or savings accounts, money market funds, certificates of deposit, government savings bonds, or treasury bills, i.e. all cash assets. It excludes assets held in employer-based pensions or individual retirement savings programs. If people do not own a checking account with saved money, the variable takes on the value zero and one otherwise. The variable SAVINGS indicates the real amount saved in the years 2003 and 2005 in 2005 US dollar. Due to the fact that not all individuals indicated their amount, the case number reduces for the analysis of SAVINGS.

The first independent variable is the religious affiliation (AFFILIATED) of an individual. It is a dummy variable which indicates whether a person's is religious or not. It equals one if the individual considers himself to a certain religious affiliation and zero otherwise. Thereby we distinguish between Catholics, Protestants, Jews, Non-Christian religions, like Muslims, Hindus and Buddhist, and Orthodox Christians. For each religion we created dummy variables whereas non-religious people are the omitted category. The latter include agnostics and atheists. Figure I shows the distribution of the adherence to different religions in the USA for the considered sample. By far, Protestants represent the major denomination, followed by Catholics and non-religious people. Both Jews and Non-Christians are represented equally at a 2 % level. According to the U.S. Religious Landscape Survey, this distribution reflect the situation in the overall USA.

Figure I: Religious adherence in the USA according to the PSID



The variable CHURCH ATTENDANCE illustrates how often the head on average go to church per year. It ranges from daily to yearly. We abstract from the private dimension of religion (e.g. importance of religion, private prayer), since we suggest that possible network effects of religiosity are only captured when looking at the public dimensions of religiosity.

Based on the literature dealing with the relationship of religion and economic relevant individual decisions, we control for a large number of background characteristics (such as income, wealth and employment) and demographic variables (such as gender and age, health, family size, marital status, education, race). INCOME is defined by the total family money income per year, including taxable and transfer income, as well as social security income of all family members. Additionally, we consider the variable EQUIVALENT INCOME to control for the fact that individuals living together in one household might profit from economies of scale. Therefore the income of persons living in households with different family compositions are not comparable. The equivalent income is calculated by the total income of the households divided by the sum of the weights of the people living in the household, namely the spouse of the head and the number of children. Divergently to the weights used by the OECD, we use the factor 1 for the head, 0.5 for adults over 17 years, and 0.3 for children up to 17 still living in the household. Since the decisions to save a certain amount of money or to save at all depend not only on the current income, but also on the endowment with other assets, we consider WEALTH as a measure of how wealthy a household is. Hence, we calculate the net wealth of each household by aggregating the value of all assets, including the net values of the main house, vehicles, stocks, shares in own business, contracts on land etc., and subtracting other debts. All financial figures were adjusted due to changes in the consumer price index in the USA using COLA. Furthermore a dummy for EMPLOYED is considered measuring whether an individual is employed at the moment or not. The variable takes on the value one if the head is working at the moment, or only temporarily laid off, and the value zero if the head is looking for work, unemployed, retired, permanently disabled, “housewife” or a student.

SEX of an individual is devoted to one if the individual is male, otherwise it is zero. We include the health status of a person (HEALTH) to control for the fact that households in poor health are less likely to hold risky financial assets (Rosen and Wu 2007). The health status can take on the values excellent, very good, good, fair, or poor. The MARITAL STATUS is a dummy variable coded one if the person is married and otherwise zero and counts for the composition of the household as well FAMILY SIZE and CHILDREN, the number of the children in the household, do. The family compositions seems to be important since we

assume that the savings are probably smaller the larger the family and the higher the transfers to the family abroad are. RACE represents the different races and ethnic groups in the U.S. We created dummy variables for Whites, Blacks, Latinos and Others, including American Native, Asian and Native Hawaiian or Pacific Islander people, while Whites are the omitted category. In all, 40.62 % of the selected sample is non-white.

Since education was found to raise asset accumulation, we include educational levels as control variables. For example, Bernheim (1997) found that high school students who receive instructions related to household financial decision-making, like budgeting, credit management, saving and investment, accumulate in the adulthood more assets. The PSID define EDUCATION as the highest grade, which ranges from one to seventeen, the respondent completed at school. We created dummy variables for holding a high school degree (HIGH SCHOOL), for people who got a high school degree and went to the college, but did not get a degree there (PRE COLLEGE), and for people holding a college degree, including people with at least one year of post-graduation or more (COLLEGE). People who did not get at least a high school degree are the omitted category.

The economic environment where the head grew up is taken into consideration, too. As Charles and Hurst (2003) pointed out, wealthier parents invest more in "their children's education, give their children financial gifts, or pass on similar savings behavior." Therefore it seems to be likely that heads who grew up with wealthy parents might save more today than heads who grew up with poor parents do. We created two dummy variables which measure the economic milieu where the head was growing up. VARIED and WELL-OFF indicate whether the economic situation of the parents was varying or pretty well off. Growing up in a poor economic environment is the omitted category. Moreover, since the economic choices of the current head might be shaped by a direct learning effect from his father, the education of the head's father will also be included as a control variable. In the regression analyses marital status, age, race and the education of the head's father are referred to as "OTHER CONTROLS".

4.2 Descriptive Statistics

Table I shows summery statistics (number of observations, mean, standard deviation minimum and maximum) for the variables outlined above.

Table I: Descriptive Statistics for the variables of interest

Variable	Obs	Mean	Std. Dev.	Min	Max
AFFILIATED (d)	15072	0.8742	0.3316	0	1
JEWS (d)	15072	0.0193	0.1376	0	1
CATHOLICS (d)	15072	0.1952	0.3964	0	1
PROTESTANTS (d)	15072	0.6393	0.4802	0	1
NON-CHRISTIAN (d)	15072	0.0182	0.1338	0	1
ORTHODOX (d)	15072	0.0022	0.0467	0	1
CHURCH ATTENDANCE	15072	1.5231	1.1836	0	3
AMOUNT SAVED ($100.000)	14065	0.1592	0.8050	0	40
SAVED (d)	15072	0.7399	0.4387	0	1
WEALTH ($100.000)	15072	1.7922	6.6012	-3.7	411.15
EMPLOYED (d)	15072	0.7459	0.4354	0	1
INCOME ($100.000)	15072	0.6209	0.9780	0	55
EQUIVALENT INCOME ($100.000)	15072	0.4071	0.6945	0	55
HIGH SCHOOL (d)	15072	0.3286	0.4697	0	1
PRE COLLEGE (d)	15072	0.2278	0.4194	0	1
COLLEGE (d)	15072	0.2529	0.4347	0	1
MARITAL STATUS (d)	15072	0.5503	0.4975	0	1
SEX (d)	15072	0.6991	0.4587	0	1
AGE	15072	45.1356	16.1666	16	99

* (d) indicates a dummy variable

Table ***II*** reports some descriptive statistics for the decisions to save which might be influenced by one's religious affiliation and church attendance. It shows the average amount saved by the individuals of the different religions and the percentages of religious affiliated people which decided to save money. Without considering personal characteristics, on average, Jews seem to save more frequently (SAVED) than the other groups. Contrary to Weber's argument, that Protestants are more thrifty than Catholics, our data show that Protestants save the fewest. With respect to the amount saved by people (SAVINGS), again Jews seem to save more than the other groups. Except for the behavior of Orthodox people, no large differences might be recognized concerning the employment status of the individuals. Only one half of the Orthodox in the sample seem to be employed. The largest differences become obvious when looking at the equivalent income and the wealth of the individuals. In both categories the Jews are by far the richest people, followed by the Orthodox and the Catholics. Contrary to that, Protestants and Non-Christian individuals draw a equivalent income which is only one half compared to the Jews. Even non-religious people seem to obtain a higher income than Protestants or Non-Christians. Particularly, the differences are the largest concerning the allocation of wealth between the different religious groups.

Table II: Descriptive statistics for whether to save and the amount saved by religion

	SAVED	SAVINGS	EMPLOYED	EQUIVALENT INCOME	WEALTH
NONE	70.90%	13,600	79.10%	40,800	153,300
JEWS	92.80%	63,700	73.20%	80,200	471,900
CATHOLICS	79.30%	21,900	78.30%	47,200	263,200
PROTESTANTS	72.40%	13,100	72.70%	37,600	154,100
NON-CHRISTIAN	73.80%	15,300	74.20%	38,500	148,600
ORTHODOX	84.80%	20,500	51.50%	42,200	277,500

Regarding the characteristics of the individuals affiliated to the different religious groups *Table **III*** shows that almost all Jews and Christian-Orthodox are white, whereas only 34% of people affiliated to a Non-Christian religion, and 54% of the Protestants indicate their race to be white.

Table III: Descriptive statistics for personal characteristics grouped by religion

	WHITE	MARITAL STATUS	HIGH SCHOOL	COLLEGE	AGE
NONE	67.9%	52.5%	32.4%	26.7%	38
JEWS	97.6%	66.7%	13.1%	66.3%	53
CATHOLICS	68.5%	65.2%	29.2%	29.2%	46
PROTESTANTS	54.4%	52.1%	34.9%	22.2%	46
NON-CHRISTIAN	33.7%	54.5%	25.8%	34.9%	44
ORTHODOX	90.6%	63.6%	18.2%	48.5%	57

Whereas almost no differences can be found concerning the marital status, large differences occur regarding the level of completed education. Two third of the Jews attended college and received a college degree. Contrary to that, only 22% of the Protestants and 29% of the Catholics got a college degree.

4.3 Results

Our analysis will be done in two steps. First, we analyze the effect of belonging to any religion on the binary decision whether to save money or not and on the decision on how much to save. Afterwards we will consider the distinct religions. This is followed by the analysis of the impact of church attendance as a measure of religious believing. Regarding the decision to save or not, religious affiliated people seem to have in general a higher probability to save money than non-religious affiliated people (*see Table IV*). As already Keister (2003) pointed out, “religious doctrine seldom discourages saving…”, our results also show that

religious people are 3 percentage points more likely to save money than non-religious people. Regarding the effects of the several religions, it becomes clear that the propensity to save of Jews is twice as high as that of Protestants. Nevertheless Protestants have a 3.4 percentage points higher probability to save than non-religious people. In the unconditioned sample the effects of the other religions on the decision whether to save or not were not found to be statistically significant. However, when looking at white males only, Jews and Non-Christens have the highest propensity to save money, all other things equal.[1] Regarding the relationship between white male Catholics and white male Protestants the results indicate that they nearly have the same propensity to save money. Protestants seem to have just a slightly higher propensity to save than Catholics. Moreover, both groups have a 2.3, respectively 2.8, percentage points higher probability to save money compared to non-white non-religious people. Orthodox people seem to save on average a half percentage point less than non-religious people. However, this result is not statistically significant probability due to the small number of Orthodox people in the sample.

When looking at the amount saved by religious affiliated people in general, and by the adherents of the different religions, it becomes clear that we obtain a different picture. People belonging to a religion seem to save $2,200 less than non-religious people. Except for the Jewish religion, all other religions have a negative impact on the amount people decided to save. As suggested above, Jews save the most. They save $25,000 more a year than non-religious people and even more than all the other religions, since the coefficients for the other religions are all negative. Thereby only small differences exist between Catholics and Non-Christians.

[1] Results for white males will be delivered on request.

Table IV: Individual decision-making regarding savings and religion

	Probit SAVED				OLS SAVINGS	
	(1)		(2)		(3)	(4)
	coef	marg	coef	marg		
AFFILIATED (d)	0.107*	0.030*			-0.022	
	(-0.045)	(-0.013)			(-0.021)	
JEWS (d)			0.321*	0.075*		0.250
			(-0.163)	(-0.032)		(-0.277)
CATHOLICS (d)			0.033	0.009		-0.003
			(-0.057)	(-0.015)		(-0.032)
PROTESTANTS (d)			0.124**	0.034**		-0.037
			(-0.047)	(-0.013)		(-0.021)
NON-CHRISTIAN (d)			0.133	0.034		-0.005
			(-0.107)	(-0.026)		(-0.035)
ORTHODOX (d)			0.020	0.005		-0.048
			(-0.537)	(-0.142)		(-0.119)
WEALTH	0.032	0.009	0.033	0.009	0.011*	0.011*
	(-0.018)	(-0.005)	(-0.018)	(-0.005)	(-0.005)	(-0.005)
EMPLOYMENT (d)	0.320***	0.092***	0.321***	0.093***	-0.132***	-0.131***
	(-0.040)	(-0.013)	(-0.040)	(-0.013)	(-0.037)	(-0.036)
EQUIVALENT INCOME	1.158***	0.313***	1.162***	0.313***	0.128	0.126
	(-0.148)	(-0.037)	(-0.148)	(-0.037)	(-0.071)	(-0.069)
HIGH SCHOOL (d)	0.380***	0.096***	0.378***	0.096***	0.049***	0.048***
	(-0.040)	(-0.010)	(-0.040)	(-0.010)	(-0.011)	(-0.011)
PRE COLLEGE (d)	0.643***	0.147***	0.642***	0.147***	0.090**	0.089**
	(-0.047)	(-0.010)	(-0.047)	(-0.010)	(-0.028)	(-0.027)
COLLEGE (d)	0.822***	0.183***	0.819***	0.182***	0.200***	0.191***
	(-0.056)	(-0.012)	(-0.056)	(-0.012)	(-0.033)	(-0.029)
FAMILY SIZE	-0.045***	-0.012***	-0.045***	-0.012***	-0.005	-0.005
	(-0.012)	(-0.003)	(-0.012)	(-0.003)	(-0.005)	(-0.005)
VARIED (d)	0.094**	0.025**	0.094**	0.025**	-0.004	-0.006
	(-0.035)	(-0.009)	(-0.035)	(-0.009)	(-0.012)	(-0.012)
WELL OFF (d)	0.043	0.011	0.042	0.011	0.069*	0.066*
	(-0.044)	(-0.012)	(-0.044)	(-0.012)	(-0.032)	(-0.031)
OTHER CONTROLS	YES	YES	YES	YES	YES	YES
Constant	-0.664***		-0.667***		-0.135**	-0.124*
	(-0.095)		(-0.095)		(-0.044)	(-0.048)
R2					0.080	0.082
Pseudo R2	0.257		0.257			
Observations	12657	12657	12657	12657	12127	12127

Notes: Probit equations (1) and (2) include the reporting of marginal effects and OLS (3) and (4). (d) for discrete change of dummy variable from 0 to 1. Cluster robust standard errors in parentheses. *, **, *** significant at 5. 1. and 0.1%.

Catholics save $300 less and Non-Christians save $500 less than non-religious people. Although Protestants claim slightly more often than Catholics that they saved money the last year, they save about $3,400 less than Catholics. However, all results regarding the effects of

being affiliated in general and being affiliated to a certain religion on the actual amount saved were not found to be statistically significant.

Regarding the control variables it becomes clear that the wealthier the family is the more they will save. An increase in the net value of all assets by $100,000 increases the amount of money saved by $1,100. Moreover, an increase in the equivalent income by $100,000 raises the probability to save by 31.3 percentage points. Employed people are 9.3 percentage points more likely to save money than not employed people. Contrary to that employed people save on average $13,100 less than people who are not employed. This might be explained by the fact that especially unemployed people are faced with a higher uncertainty regarding the future and therefore might save more of their available money in the present to hedge against these uncertainties. The higher the obtained education of the individual the higher is not only the probability to save money but also the amount which is saved. People who got a college degree have a 8.7 higher probability to save than people who got a high school degree. Moreover, they save $14,300 more per year than people who got a high school degree and $10,200 more than people who attended college but did not get a degree there. The household size seems to affect the decision whether to save, while no effect was found for the effect on the amount saved. With an increase in the family by one person the propensity to save decreases by 1.2 percentage points. Regarding the other control variables like age, marital status, race and education of the father, we find out that the older the person is the more she is saving. Black Americans and Latinos have on average a lower propensity to save than white Americans and save a lower amount of money. For example, black Americans have a 24.4 percentage points lower probability to save and save on average $6,700 less per year than white Americans. Regarding the impact of the education of the head's father on the head's decision to save we did not find an effect.

Since the decision to save seems not only to be influenced by one's religious affiliation, we now take a closer look at the variable church attendance (*see Table V*). Assuming that people going to church do believe in the teachings of a certain religion, we use the frequency of attending religious services as a measure for religious believing. The data show that the more often people going to church, i.e. the more religious they are, the higher is their propensity to save money. People going once a week or more to church have a 1.6 percentage points higher probability to save money compared to people going less than once a month to church and a 6.4 percentage points higher probability than people never attending church.

Table V: Individual decision-making regarding savings and church attendance

	Probit SAVED		OLS SAVINGS
	(1)		(2)
	coef	marg	
LESS ONCE A MONTH (d)	0.184***	0.048***	0.033
	(-0.039)	(-0.010)	(-0.026)
ONCE A MONTH (d)	0.205***	0.052***	0.002
	(-0.043)	(-0.011)	(-0.014)
ONCE A WEEK (d)	0.248***	0.064***	0.002
	(-0.041)	(-0.010)	(-0.019)
WEALTH	0.03	0.008	0.011*
	(-0.017)	(-0.005)	(-0.005)
EMPLOYMENT (d)	0.313***	0.090***	-0.133***
	(-0.040)	(-0.013)	(-0.037)
EQUIVALENT INCOME	1.158***	0.313***	0.128
	(-0.148)	(-0.037)	(-0.071)
HIGH SCHOOL (d)	0.366***	0.093***	0.048***
	(-0.040)	(-0.010)	(-0.011)
PRE COLLEGE (d)	0.616***	0.142***	0.088**
	(-0.047)	(-0.010)	(-0.027)
COLLEGE (d)	0.787***	0.176***	0.199***
	(-0.056)	(-0.012)	(-0.034)
FAMILY SIZE	-0.047***	-0.013***	-0.005
	(-0.012)	(-0.003)	(-0.005)
VARIED (d)	0.094**	0.025**	-0.005
	(-0.035)	(-0.009)	(-0.012)
WELL OFF (d)	0.044	0.012	0.068*
	(-0.044)	(-0.012)	(-0.032)
OTHER CONTROLS	YES	YES	YES
Constant	-0.686***		-0.160***
	(-0.093)		(-0.043)
R2			0.080
Pseudo R2	0.260		
Observations	12657	12657	12127

Notes: Probit equation (1) including marginal effects and OLS (2). (d) for discrete change of dummy variable from 0 to 1. Cluster robust standard errors in parentheses. *, **, *** significant at 5. 1. and 0.1%.

However, people going less than once a month to church still are 4.5 percentage points more likely to save money than people never attending church. Regarding the amount people saved a different picture occurs. People going less than once a month to church seem to save more money than people attending once a month or at least once a week. People going less than once a month to church save on average $3,300 more per year than people never

attending. This is $3,100 more than people attending more often save. People going once a month and more to church merely save on average $200 more than people never attending church. This might be explained by the fact that people attending more often might rather donate a higher amount of money to the church than saving it on their account. However, the effects of attending church on the amount of money saved by the individuals is not statically significant.

5. Conclusion

Religious beliefs and participation were found to impact the prosperity of households. Not only the attitudes, but also the actual behavior of individuals might be influenced by ideas on morality and good conduct which, in conjunction with religious ideas, were conveyed by religions. Regarding the decision to save money no large differences within the Christian religions, namely Protestants and Catholics, were found. However, large differences exist compared to non-religious people as well as to Non-Christians and Jews. As previous studies already suggested, on the individual level Jews save the most, all other things equal. Although the decision whether to save money seems to be influenced by one's religious affiliation, no statistically significant effect was found for the influence of one's religious affiliation on the decision concerning a certain amount of money to save. With regard to the impact of attending church on the savings decisions nearly the same pattern occurs. The more often people attending religious services the higher is the probability to save money. With respect to the amount saved, again no effects could be found. Comparing the impact of religious belonging, measured by one's religious affiliation, and religious believing, measured by attending church, the results show that believing seems to matter more. People who are going to church, even only less than once a month, are 4.8 percentage points more likely to save, whereas people belonging to a religion are only 3.0 percentage points more likely to save money than non-religious people.

In the context of economic development one might ask what to do with that knowledge. Does it make sense to foster religions? Probably not. On the one hand, religions are just one factor among others which are determining the development process, and, on the other hand, religion as an institution need time to diffuse into the society. However, understanding how religious beliefs influence economic decisions of individuals might help to gain further insights into the causes of differing recourse endowments of individuals This is an essential supposition to design policy instruments whose aim is to improve these endowments.

In a globalized world which is no longer shaped by state frontiers, but rather cultural frontiers (Huntington 1998), answering the question how religions will interact in the future,

will show if the positive effects of religiosity might be used for economic issues. Only if a peaceful and respectful contact is fostered, economical gains are also possible.

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Appendix I: Variable Definition

	Question / Statement
Dependent Variables	
SAVED	Does your FAMILY have any savings, such as checking or savings accounts, or government bonds?
SAVINGS	If you added up all such accounts (for all of your family living there about how much would they amount to right now (in 2005 US dolla
Religion	
AFFILIATED	Do you have a religious preference?
CATHOLICS, JEWS, PROTESTANTS; NON-CHRISTIANS, NONE	What is your religious preference?
CHURCH ATTENDANCE	How often do you go to religious services ?
Control Variables	
SEX	Sex of Individual
AGE	Age at the time of the interview
WHITE, LATINO, NEGRO, OTHERS	Are you white, black, Native American, Asian, Pacific Islander, or another race?
MARITAL STATUS	Are you married?
CHILDREN	Number of children under 18 living with the family
H-SIZE	Number of people (children plus adults) living currently in the fami unit
HEALTH	Would you say your health in general is excellent, very good, good or poor?
HIGH SCHOOL; PRE COLLEGE; COLLEGE	Dummy variables which indicates whether the head got at least a hi school degree, attended college, or got a college degree.
INCOME	Total money income of all family members (Taxable Income, Tran Income, Social Security Income) the year before in 2005 US dollar
EQUIVALENT INCOME	INCOME is weighted after household size and composition.
WEALTH	Sum of net values of the main house, other real estates, vehicles, bu and farms owned, stocks, IRA's and other assets, minus other debts

EMPLOYED	Are you working now?
VARIED; WELL OFF	Dummy variables which indicates whether the head's parents were when he was growing up, pretty well off, or did the situation vary. is the omitted category.
HIGH SCHOOL Father, HIGH SCHOOL Father, COLLEGE Father	Education of head's father: no education, at least high school degre attend pre-college, or college degree.

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