Out of (their) Control: Fatalists, Effort, and Savings Behavior*

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Abstract

We develop a model that examines the impact of fatalism, the belief that one has little or no control over future events, on the decision of whether or not to save. The theory predicts that fatalism decreases effort in learning about the best terms for investment and savings options and decreases savings for moderately risk averse individuals. We use data from the 2004 Survey of Consumer Finances (SCF) and the 2000 World Values Survey (WVS) and find general support for the theoretical predictions of the model. SCF respondents who feel that luck has played an important role in their financial affairs are less likely to to shop around when making major financial decisions about saving, investing, or borrowing. The effect of fatalism on actual savings rates depends on risk preferences, as predicted by the model. For survey respondents in both the SCF and the WVS, there is no relationship between fatalism and saving for risk loving and risk neutral individuals, but fatalism is negatively related to saving for risk averse individuals. The results are robust to the inclusion of a number of additional control variables.

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1 Introduction

Fatalism, the notion that individuals lack the ability to determine their outcomes, is an important phenomenon in modern society. In the 2004 Survey of Consumer Finances, 58% of individuals believe that luck plays an important role in determining their financial outcomes.[1] In this paper, we develop an economic model of fatalism and apply it to a still open question in the economics literature: why do people save so little?

A large body of evidence shows that many households do not save optimally and enter retirement with little or no savings (Lusardi 2001, Choi, Laibson, and Madrian 2004, and Banks, Blundell and Tanner 1998). We examine a simple theoretical model in which consumers choose both savings and effort to improve their investment portfolio. Fatalism is modeled as a belief that the returns to effort are lower than the actual market returns. We find that fatalism should decrease effort, and will also decrease savings if risk aversion is sufficiently low. We test these hypotheses using data from the 2004 Survey of Consumer Finances and find general support for the model. We also employ data from the 2000 World Values Survey and find evidence that the relationship between fatalism and savings depends on individual risk preferences, as predicted by the theory.[2]

There is a large literature analyzing fatalism, mostly in disciplines outside of economics. In epidemiology, there is evidence that those who are most at risk for certain diseases are often the least likely to get preventive screens for them (Kash and Dabney (2001) and Wu (2003)). In disaster preparedness, McClure, Allen and Walkey (2001) show that people are less likely to prepare for earthquakes and other disasters if they believe that their preparedness levels will not have a meaningful effect on the expected damages that actually occur. In political science, Goodwin and Allen (2000) demonstrate strong relationships among fatalism, attitudes toward democracy, and democratic participation in several republics of the former Soviet Union. The common theme among these studies is that those with fatalistic tendencies believe that their current and past actions have limited, or no effect in determining future outcomes and their actions reflect this.

Within the economics literature, the concept of fatalism has been used to explain differences between the U.S. and Europe. Alesina and Angeletos

[1] This figure is based on the authors' tabulations of data used for this study.

[2] There is no variable for effort in learning about savings or investment options in the World Values Survey, so we are unable to test this hypothesis.

(2005) show how a system with more (less) redistribution can arise when individuals are less (more) likely to believe that effort determines income. Benabou and Tirole (2006) relate fatalism to the psychology literature and the notion of a "belief in a just world" (Lerner 1982) in order to examine the interaction between ideology and redistribution systems. Wu (2005) finds evidence that those who believe they have little control over their lives and financial outcomes are less likely to save.

This paper extends these literatures by analyzing the effects of fatalism on the effort undertaken to learn information about investment and savings options as well as actual savings behavior. The empirical results of the paper are consistent with the theoretical predictions of the model.

Clearly, our work is meant to add a complementary explanation to the literature on why consumers save so little. Several papers suggest that households aren't well informed about benefits (e.g. Gustman and Steinmeier (2005)) and that financial education can stimulate savings (Bernheim and Garrett (2003) and Duflo and Saez (2003)). Other models, such as Allen and Carroll (2001) and Reis (2004), argue that financial planning is too costly. Many recent papers use behavioral arguments to explain under-saving. Laibson, Repetto and Tobacman (1998) and Diamond and Koszegi (2003) use hyperbolic discounting to formally model the self-control problem in relation to the empirical findings on household savings behavior and Madrian and Shea (2001) show that default options drive individual saving behavior.

The paper proceeds as follows. Section 2 introduces the theoretical model. Section 3 explains the data and empirical methodology. Section 4 discusses the empirical results and section 5 concludes.

2 The Model

Consider a simple savings problem in which there are two periods. In period one, consumers choose an amount to save and make an effort that influences future returns. In period two, the returns are realized and consumers consume their savings. We write this formally as a maximization problem:

$$\max_{e,s} u(I-s) - \frac{1}{2}e^2 + \delta\{(p+\gamma e)u(R_H s) + (1-(p+\gamma e))u(R_L s)\}$$

where δ is the discount factor, I is period one income, and p is the minimum probability that there will be a high return R_H to savings (and

$1-p$ is the maximum probability that there is a low return to savings R_L). The choice variables of the consumer are savings (s) and effort (e), where $e \in [0, \frac{1-p}{\gamma}]$. The utility function $u(\cdot)$ is assumed to be increasing and concave.

A larger effort can increase the probability of receiving a high return on savings. Larger effort is costly, however, and must be exerted in period one. For simplicity, we assume that effort is separable in the period one utility function and that the cost of effort is quadratic. Investment in effort may occur in a number of ways. It could involve direct planning for the future through investigating different investment opportunities, hiring a financial consultant, or using computer software to analyze investing needs. In addition, an individual may acquire more education or training such as taking investment related courses or attending financial planning seminars.

Fatalism is defined as the belief that one has little control over future actions, i.e. luck, rather than personal actions, determines one's fate. In terms of the model, a fatalist is someone who perceives or believes that the return to effort is lower than it truly is. The parameter γ measures the returns to effort and hence fatalism is represented by a γ less than the actual return γ_{true}.[3] Individuals with low γ's believe they have less control over the probabilities that will influence their future outcomes than they actually do. This may be because they believe that financial planning is not effective, that returns to savings and investment have little variability, or that the returns are unpredictable.

The consumer optimally chooses an effort level and savings amount that maximizes her utility. We assume that there is a unique optimum, which is equivalent to assuming that for all parameters:

$$-u''(I-s) - \delta\{(p+\gamma e)R_H^2 u''(R_H s) + (1-(p+\gamma e))R_L^2 u''(R_L s)\} \quad \text{(A1)}$$
$$-(\delta\gamma\{R_H u'(R_H s) - R_L u'(R_L s)\})^2 > 0$$

The optimal solution (e^*, s^*) is given by the two first order conditions:[4]

$$\begin{aligned} -e^* + \delta\gamma\{u(R_H s^*) - u(R_L s^*)\} &= 0 \\ -u'(I-s^*) + \delta\{(p+\gamma e^*)R_H u'(R_H s^*) + (1-(p+\gamma e^*))R_L u'(R_L s^*)\} &= 0 \end{aligned}$$

[3] Benabou and Tirole (2006) also take the approach of using the returns to effort to capture individual ability to determine one's future, but they are concerned with how this return is learned (from outcomes) and transmitted (through parents) over time.

[4] Note that borrowing, or $s < 0$, would be possible if we assumed there was period two exogenous income. We have assumed it away for simplicity.

The consumers' degree of risk aversion will be an important part of understanding the results. Label the coefficient of relative risk aversion $RRA = \frac{-cu''(c)}{u'(c)}$. The following lemma is a step that is necessary for describing the solution.

Lemma 1 *(i) If* $0 < RRA < 1$ *for all* s*, then* $R_H u'(R_H s) - R_L u'(R_L s) > 0$.
(ii) If $RRA > 1$ *for all* s*, then* $R_H u'(R_H s) - R_L u'(R_L s) < 0$.

Proof. First, suppose $0 < RRA < 1$ for all s. This implies that $\frac{-Rsu''(Rs)}{u'(Rs)} < 1$ for all s, or $u'(Rs) + Rsu''(Rs) > 0$. The second expression is equivalent to $\frac{d}{dR}(Ru'(Rs)) > 0$, which gives the result. We can use a similar argument for the second result. ■

Now we examine the effects of fatalism on the choices of savings and effort. We refer to a "rational" consumer as one who knows the true rate of return to effort.

Proposition 2 *Assuming that equation A1 holds,*
(i) Fatalists invest strictly less effort than rational consumers.
(ii) If $0 < RRA < 1$ *for all* s*, Fatalists save less than rational consumers. If* $RRA > 1$ *for all* s*, Fatalists save more than rational consumers.*
(iii) Risk neutral and risk loving save the same amount as rational consumers.

Proof. Define $F(e, s)$ to be the left hand side of equation A1 and $P(s) = R_H u'(R_H s) - R_L u'(R_L s)$.

For all of the results we use the implicit function theorem on the equation:

$$-u'(I - s^*) + \delta\{(p + \gamma e^*(s^*; \gamma, \delta)))R_H u'(R_H s^*)$$

$$+(1 - (p + \gamma e^*(s^*; \gamma, \delta)))R_L u'(R_L s^*)\} = 0$$

where $e(s; \gamma, \delta) = \delta\gamma\{u(R_H s^*) - u(R_L s^*)\}$.

The results for a change in the fatalism parameter are:

$$\frac{ds^*}{d\gamma} = -\frac{\delta e P(s) + \delta^2\gamma^2 P(s)^2}{F(e, s)}, \frac{de^*}{d\gamma} = \delta\{u(R_H s^*) - u(R_L s^*)\} + \delta\gamma P(s)\frac{ds^*}{d\gamma}$$

It is clear that when $0 < RRA < 1$ holds, Lemma 1 implies that $P(s) > 0$ and consequently both $\frac{ds^*}{d\gamma} > 0$ and $\frac{de^*}{d\gamma} > 0$. We will now show that when

$RRA > 1$ holds, $\frac{ds^*}{d\gamma} < 0$ and $\frac{de^*}{d\gamma} > 0$. From Lemma 1, we know that $P(s) < 0$. The numerator of $\frac{ds^*}{d\gamma}$ can be written as $\delta P(s)\{e+\delta\gamma^2 P(s)\}$, which is equal to $\delta P(s)\{e + \gamma\frac{de}{ds}\}$. Using a Taylor expansion, $e + \gamma\frac{de}{ds} \approx e(s + \gamma; \gamma, \delta) > 0$. Therefore the numerator is negative and the results follow.

Lastly, risk neutral consumers have linear utility and therefore the choice of savings either hits the lower bound of 0 or the upper bound of I. This doesn't (locally) depend on fatalism. Risk loving consumers also hit a corner solution as the interior solution minimizes their utility. ■

Fatalists unambiguously invest less effort than rational consumers since they have a lower perceived return to effort. The impact of fatalism on savings, however, depends on the degree of risk aversion of the consumer. Risk neutral and risk loving individuals either save all of their income or none of it. Therefore varying perceptions over the return to effort don't affect their savings. For risk averse individuals, who have an interior solution and save a fraction of their income, the degree of fatalism matters. Consider lowering the perceived returns to effort (and holding effort fixed). There are two competing effects influencing an individual's savings choice. The first is the fact that expected returns to savings are lower, so a consumer would want to save less. The second is the fact that the low outcome in the second period is more likely to occur. A risk averse individual would thus like to save more in order to smooth income between the states in period two. Therefore, for moderately risk averse consumers (who have $0 < RRA < 1$), the first effect dominates and being fatalistic means that they want to save less so as to avoid the low return to savings. On the other hand, for very risk averse consumers (who have $RRA > 1$), the second effect dominates and being fatalistic means that they want to save more to better smooth their income.

A few caveats apply here. First, we have not fully characterized all consumers, as it may be possible that a consumer has $0 < RRA < 1$ for some levels of savings, and $RRA > 1$ for other levels. Even the most sophisticated survey questions have not been able to solicit a difference like this, so we will leave this issue on the sidelines. Second, there is a long-standing struggle in the macroeconomic and finance literatures to distinguish the coefficient of relative risk aversion from the intertemporal elasticity of substitution.[5] Indeed, for power preferences (i.e. $u(c) = c^\theta$) they are the inverse of one

[5]For example, see Giuliano and Turnovsky (2003).

another. They are also the inverse of each other for time separable, homothetic preferences. We have assumed time separability, but haven't assume homotheticity, so indeed they may be different in our model.

3 Data and Methodology

The data used for this study are derived from the 2004 Survey of Consumer Finances (SCF). We chose this data set because it nicely combines information about: (1) attitudes toward saving, credit and other financial decisions; (2) risk preferences, planning horizons, and overall outlook towards the economy; (3) and actual household behavior such as general savings behavior. The SCF is a cross-sectional survey conducted every three years by the Federal Reserve Board. The survey samples from a broad age range of households, providing information on income, assets, pensions, and other demographic characteristics of U.S. families. The survey also gathers information on investments, credit and borrowing and asks a number of attitudinal questions regarding consumption and savings behavior. The 2004 sample contains approximately 4,500 observations with non-missing information. We restrict the sample to respondents over the age of 25, as many below that age are likely to be students or not fully in the workforce yet, leaving a final sample size of 4,341 individuals.[6] The SCF surveys both married and single individuals, and the household head (in almost all cases this is assumed to be the husband) of married couples is the one that is primarily interviewed (though some limited spousal information is provided).[7]

We begin the empirical analysis using data from the SCF. We use a probit model to estimate the following equation:

$$P(\textit{effort} = 1) = \beta_0 + \beta_1 \textit{fatalism} + \beta_2 X + \varepsilon \tag{1}$$

In equation 1, our proxy for effort is taken from the respondent's answer to the following question from the SCF: "When making major saving and investment decisions, some people shop around for the very best terms while others don't. On a scale from one to five, where one is almost no shopping, three is moderate shopping, and five is a great deal of shopping, where would

[6] The substantive results of the paper are also robust to further restrictions, such as trimming those with high or low incomes or assets.

[7] The results are not particular to the survey year that was chosen. We also obtain similar results for an earlier cross-section (2001) of the SCF.

(you/your family) be on the scale?" We use a dichotomous variable equal to one if the individual exerts at least some effort in shopping around for the best terms and zero otherwise. There is a similar question about shopping around for the best terms in making borrowing and credit decisions, and we also estimate regressions using this dependent variable.[8]

While the SCF does not provide a direct measure of fatalism, it does ask the following question: "Compared with other people of my generation and background, I/ we have been lucky in my financial affairs." Respondents can answer along a 1-5 scale, ranging from "strongly agree" to "strongly disagree". We use an indicator variable, luck_important, equal to one for those who either strongly agree, or disagree, or strongly disagree with this statement.[9] Those who feel that luck (either good or bad) has been an important factor in determining financial status are more likely to be fatalistic. In other words, these individuals believe that their financial outcomes are based at least somewhat on idiosyncratic luck rather than simply the result of their prior actions. Note that this variable is used symmetrically and is thus different than simply a measure of rosiness towards personal finances or life in general.

The vector X represents a set of demographic and economic variables that include age, race, gender, marital status, education, and the logarithm of "normal" income.[10] In some regressions, we include additional indicator variables for different categories of self-reported health status, time preferences, and risk tolerance.[11] Self reported health status is measured on a 1-4 scale, with 1 indicating excellent health and 4 indicating poor health. To proxy for risk tolerance, we use the answers to the following question, "Which of the statements on this page comes closest to the amount of financial risk that you (and your spouse/partner) are willing to take when you save or make investments?" "substantial financial risks expecting to earn substan-

[8] When we code this variable differently (either using it linearly or having different cutoffs for the dichotomous variable), the results are qualitatively similar, though weaker. The relationship between fatalism and effort is strongest when comparing the difference between exerting at least some effort versus no effort at all.

[9] There are a very small number who respond "strongly disagree", so we include those that respond "disagree" and "strongly disagree" as one category.

[10] The SCF asks respondents to report actual income, as well as what income would be in a "normal" year. Although we use the normal income variable to better capture permanent income, using actual income does not change the results.

[11] As a robustness check, we also include additional controls such as industry and occupation indicators and union status.

tial financial returns", "above average financial risks expecting to earn above average financial returns", "average financial risks expecting to earn average financial returns" and "not willing to take any financial risk." Time preferences are proxied by using the answers to the question, "In planning your saving and spending, which of the time periods listed on this page is most important to you? Next few months, next year, next few years, next 5-10 years, longer than 10 years." To account for recent income shocks, we include an indicator variable for whether household income in the past year was unusually high and another indicator for whether income was unusually low. Finally, to address the possibility that general optimism or pessimism may partly explain the lack of effort, we also include a variable that accounts for an individual's subjective forecast of the future economy.[12]

Our theoretical model predicts that the coefficient β_1 will be negative since fatalists are less likely to engage in any effort to learn about saving and investment options.

The second hypothesis that we test is how fatalism affects actual savings behavior. Thus, we estimate the following equation:

$$P(Save = 1) = \beta_0 + \beta_1 fatalism + \beta_2 X + \varepsilon$$

We use a probit model to estimate this equation, where the dependent variable in this probit model is equal to one if the individual or household generally saves any money at all.[13] The measure of fatalism is the same as before and similar demographic controls are included. Recall that the effect of fatalism on savings rates is theoretically ambiguous and depends on risk preferences. The survey does not allow us to calibrate actual rates of relative risk aversion, but there is a question that asks about general risk preferences and in our regressions we split the sample according the risk categories provided. We discuss this in detail in the next section.

One shortcoming of the SCF is that it is a cross-sectional survey, rather

[12] Granted, this is not a perfect measure of optimism/pessimism; declaring that the economy is likely going to go downhill may simply reflect an accurate assessment of the future rather than a degree of pessimism. On average, however, the more optimistic an individual is, the more likely she will have a positive outlook of the future economy.

[13] We use the answer to the question "Which of the following statements on this page comes closest to describing your saving habits". We code those that indicate they save as one and those that do not generally save as zero. An alternative question involves whether respondents saved anything last year or not, but we are more interested in general savings behavior rather than something that may be influenced by idiosyncratic shocks.

than a panel study. Thus, it is difficult to determine whether a change in an individual's fatalistic tendencies has a causal impact on that same individual's attitudes toward saving and saving habits. However, the argument for reverse causality is not entirely convincing. It seems much more likely that one's degree of fatalism would affect her effort towards gathering information about savings and her actual savings behavior, rather than the other way around. We also address the problem of omitted variable bias by controlling for economic, demographic and behavioral characteristics as discussed above.

4 Results

Table 1 shows the summary statistics of the variables used in the analysis. The SCF sample has a wide age distribution, and after we exclude individuals under 25, the average age of the sample is approximately 52 years. Roughly 60 percent of respondents are married (where the husband is almost always the primary interviewee) and 10 percent are black. We should note that the SCF purposely oversamples households at the upper tail of the wealth distribution[14]. However, despite the fact that this is a fairly wealthy sample, only 81 percent claim to be currently saving. About 17 percent of the sample believes that the future economy will perform worse over the next five years and 58 percent feel that luck has played an important role in determining their financial situation.

Table 2 presents the results of a regression that predicts the degree to which people shop around for the best terms when making financial decisions. The dependent variable in the first two columns is equal to one if the respondent engages in at least a modest degree of shopping around when making decisions about savings and investment decisions and zero otherwise. Being married, Black, and more educated are all positively correlated with spending more effort in learning about saving and investment options.

Our main independent variable of interest is the degree to which people feel luck plays in determining their financial situation. More fatalistic people (those who deem that luck is important in their financial affairs) are less likely to spend effort in making financial decisions. The coefficient in column 1 indicates that fatalists are 2.5 percent less likely to engage in any shopping around when making savings and investment decisions. This coefficient is

[14]The results are not sensitive to trimming the sample to exclude those in the upper tail of the income or wealth distribution.

statistically significant at the 10 percent level. After adding variables that control for risk preferences, planning horizons, and overall pessimism, the marginal effect increases to 2.9 percent and the coefficient is now significant at the 5 percent level. Those that are pessimistic about the future of the economy are also less likely to exert any effort when it comes to shopping around for the best terms in savings and investment decisions.

This result also holds for the effort spent gathering information about borrowing and credit. Column 3 of Table 2 shows that fatalistic individuals are 3.7 percent less likely to engage in any effort shopping around when making major credit and borrowing decisions. This coefficient is significant at the 1 percent level. Column 4 shows that the results are essentially unchanged after controlling for general pessimism, risk preferences, and planning horizon. Taken together, we see that those that believe luck has been a primary factor in determining their financial status are less likely to shop around to find the best terms for savings and investment decisions as well as borrowing and credit decisions. This is consistent with the theoretical prediction of our model.

We now turn to the savings decision. Recall from our model that the sign of the coefficient on fatalism depends on the risk preferences of individuals, and specifically on the coefficient of relative risk aversion. Unfortunately, the survey does not contain sufficient information to calculate individual RRA's, but recall that the survey asks, "Which of the statements on this page comes closest to the amount of financial risk that you (and your spouse/partner) are willing to take when you save or make investments?" We interpret those that are willing to take "substantial financial risks expecting to earn substantial financial returns" or "above average financial risks expecting to earn above average financial returns" to be risk lovers or risk neutral individuals. We interpret those that are willing to take "average financial risks expecting to earn average financial returns" and those that are not willing to undertake any financial risk to be risk averse individuals. Clearly, these are rough categories and the true rates of risk aversion surely overlap in the ad hoc categories that are given by the data. However, a study by Dohmen et al. (2005) find that 78 percent of the subjects of their experiment are risk averse, which is close to the break down from our categorization (where 74 percent of the respondents are risk averse). The reliability of their estimates is particularly compelling because they test their measure of risk aversion using a complementary field experiment, and find that the measure is a good predictor of actual risk-taking behavior.

Column 1 of Table 3 shows the results for the estimation of equation (2) using the entire sample. We see that the coefficient on fatalism has a negative sign, but is not statistically significant. Fatalists are 1.7 percent less likely to generally save than non-fatalists. The regression in Column 2 adds control variables for risk preferences, time preferences, and pessimism, and the coefficient is now marginally significant.

Because our model predicts that the effect of fatalism on savings behavior depends on risk preferences, we also estimate this equation separately for different risk categories. Recall that the model predicts that for risk loving and risk neutral individuals, there should be no effect of fatalism on savings behavior because they are at corner solutions. The results confirm this claim. Table 4 shows the results for separate estimations according to risk category. Column 1 shows the results for individuals that we categorize as risk loving or risk neutral. For individuals in these risk categories, there is no appreciable effect of fatalism on the likelihood of saving. The point estimate is extremely small and the coefficient is not close to being statistically significant.

For the subset of individuals that are risk averse, fatalists are 2.5 percent less likely to save than non-fatalists. This coefficient is larger than the coefficient for the entire sample and larger than the coefficient for risk loving and risk neutral individuals. It is also significant at the 10 percent level. We should note that we are likely combining some individuals whose rate of relative risk aversion (RRA) is between 0 and 1 (modestly risk averse) with some individuals whose RRA is above 1. We showed earlier that the former group will have a negative relationship between fatalism and saving, while the latter group will have a positive relationship between fatalism and saving. This biases the coefficient to be less negative than if we were able to sort out the different types of risk averse people. As we discussed above, we have made some assumptions about the degrees of risk aversion for the different risk categories. But if we believe the model's assumptions and implications, our empirical results suggest that most individuals have rates of relative risk aversion below 1. This is consistent with recent evidence which shows that rates of relative risk aversion are modest (bounded above at 2), with mean estimates around 0.71 (Chetty 2006).

As a further test of the effect of fatalism on the propensity to save, we use the data from the 2000 World Values Survey (WVS), a survey which is performed on nationally representative samples representing almost 80 countries. A primary goal of the survey is to better understand the relationship between various attitudes towards political, economic and social issues, and

to see how these vary across countries. One benefit of the WVS data is that there is a very direct measure of fatalism. The survey asks the following question, "Some people feel they have complete free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please rate the degree to which you feel you have freedom of choice and control you feel you have over the way your life turns out." The responses range from 1-10, where 1 represents the least amount of control and 10 represents the most amount of control. We estimate a probit model where the dependent variable is an dichotomous variable for whether households saved any money in the previous year. We code individual as fatalistic if they rate their degree of control as one, two, or three (the least amount of control over their lives).[15]

The WVS also contains a number of demographic characteristics such as education, income decile , marital status, self-reported health, age, and gender of respondent. Similar to the SCF analysis, we include these variables as controls in the WVS regressions. While there are no variables related to one's degree of myopia (like the planning horizon variable in the SCF), there is a variable that roughly approximates risk preferences. We code people as being risk-averse if they claim that one of the two most important characteristic in looking for employment is that it is a "safe job with no risk of closing down or unemployment".[16] We code all others as being risk neutral or risk loving. Table 5 shows the results of separate regressions for the two categories of individuals. Similar to our results from the SCF, we find that fatalism does not affect the likelihood of saving for risk neutral and risk loving individuals, but is negatively related to saving for risk averse individuals. The coefficient on fatalism is statistically insignificant for risk neutral and risk loving individuals, but is negative and statistically significant at the 1 percent level for risk averse individuals. Those that highly value job security are 3.4 percent less likely to save if they believe they have little control over their lives. These results corroborate the earlier findings from the SCF. Once again, we note that fatalism should be negatively related to savings rates for those with low or modest rates of risk aversion, but positively related to savings rates for highly risk averse individuals. Unfortunately, neither the

[15] When we use different thresholds to code for the fatalism variable, the results are similar.

[16] Other important job characteristics include "A good income so that you do not have any worries about money", "working with people you like" and "doing an important job which gives you a feeling of accomplishment."

SCF nor the WVS data allow us to calibrate exact rates of relative risk aversion. Therefore, we cannot directly test the prediction that highly risk averse people will have a positive relationship between fatalism and savings. However, our results are consistent with the recent evidence that the large majority of individuals have coefficients of RRA below one.

5 Conclusion

A variety of disciplines including medicine, psychology, sociology and political science have shown fatalism to be an important determinant of human behavior. This paper shows that fatalism can also partly address an important question in the economics literature: why do people save so little? We have developed a theoretical model that predicts that fatalistic people are less likely to spend time in gathering information about returns to financial investments. The sign of the relationship between fatalism and the probability of saving depends on the risk aversion of consumers. Savings decisions are not affected by fatalism for risk loving and risk neutral individuals, but for modestly risk averse individuals (RRA between 0 and 1), fatalism is negatively related to saving.

The empirical results support these hypotheses. Specifically, individual respondents in the 2004 Survey of Consumer Finances who believe that luck (good or bad) has been important in influencing their finances are less likely to shop around for the best terms when making financial decisions. The relationship between fatalism and savings behavior depends on individual risk preferences, as predicted by the model. There is only a negative and meaningful relationship between fatalism and the likelihood of saving for those that are risk averse, while the relationship does not exist for risk loving and risk neutral people. These effects persist after controlling for income and other variables including overall pessimism and planning horizon. The results for savings behavior are also supported by evidence from the 2000 World Values Survey (WVS). Individuals who believe they have little or no control over their lives are less likely to save if they are risk averse. However, there is no relationship between fatalism and savings for risk neutral and risk loving individuals in the WVS.

One policy implication is that in an effort to influence savings behavior, it may be just as important (if not more) to affect people's perceptions of their level of control and autonomy as it is to increase their level of information

regarding savings and retirement. Furthermore, the way that information about saving is presented may be equally or more important than the actual content. With respect to fatalistic individuals, it may be helpful to provide indications how saving a little today can lead to much better retirement years and to show how small actions today can greatly affect the future. The idea is to get people to believe that they have more "control" of their well being during future retirement years than they might initially think in order to combat fatalistic beliefs. As economists continue to incorporate findings in the psychology literature in modeling savings behavior, policy makers will be better equipped to address the issues surrounding retirement and the well being of the elderly.

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Table 1: Summary Statistics for 2004 Survey of Consumer Finances

Variable	Mean	St. Dev.
Married	0.62	0.49
Female	0.21	0.41
Black	0.10	0.31
Age	51.89	14.89
High School Graduate	0.23	0.42
Some College	0.19	0.39
College Graduate	0.23	0.42
Post College Degree	0.23	0.42
Log (Normal Household Income)	10.71	1.89
Log (Financial Wealth)	10.10	3.95
Index of Planning Horizon (1-5 scale)	3.23	1.31
Index of Risk Aversion (1-4 scale)	3.02	0.86
Index of Self-Reported Health (1-4 scale)	1.91	0.83
Future Economy Will Perform Worse	0.17	0.37
Future Economy Will Perform Same	0.36	0.48
Future Economy Will Perform Better	0.47	0.50
Luck Important in Financial Affairs	0.58	0.49
Shop Around When Making Saving/Investment Decisions	0.77	0.41
Shop Around When Making Borrowing/Credit Decisions	0.81	0.42
Saving At All?	0.81	0.39
Observations	4,341	

Notes: Higher levels of planning horizon variable reflect a longer planning range. Higher values of risk aversion variable reflect more risk aversion. Higher values of health status variable reflect worse health.

Table 2: Fatalism and Effort in Shopping Around When Making Financial Decisions
Marginal Effects of Probit Regressions

	Dependent Variable=1 if Individuals Shop Around for Best Terms for:			
	Savings, Investment Decisions		Borrowing, Credit Decisions	
Variable	(1)	(2)	(3)	(4)
Married	0.055***	0.049***	0.041**	0.040**
	(0.018)	(0.018)	(0.017)	(0.017)
Female	-0.006	0.017	-0.030	-0.023
	(0.020)	(0.019)	(0.020)	(0.019)
Black	0.035*	0.053***	-0.021	-0.011
	(0.020)	(0.019)	(0.021)	(0.020)
Age	0.002	0.000	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Age Squared	-0.000*	-0.000	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Log (Normal Income)	-0.004	-0.003	-0.006*	-0.014***
	(0.004)	(0.005)	(0.003)	(0.005)
High School Graduate	0.049**	0.028	0.065***	0.055***
	(0.020)	(0.021)	(0.017)	(0.018)
Some College	0.063***	0.025	0.098***	0.086***
	(0.020)	(0.022)	(0.016)	(0.017)
College Graduate	0.119***	0.068***	0.114***	0.098***
	(0.019)	(0.021)	(0.016)	(0.018)
Post College Degree	0.157***	0.105***	0.110***	0.093***
	(0.018)	(0.021)	(0.017)	(0.019)
Good Health	0.008	0.014	0.033**	0.033**
	(0.015)	(0.015)	(0.014)	(0.014)
Fair Health	-0.021	0.000	0.034*	0.041**
	(0.021)	(0.020)	(0.017)	(0.017)
Poor Health	-0.069**	-0.028	-0.009	0.009
	(0.034)	(0.032)	(0.028)	(0.027)
Future Economy Will Perform Worse		-0.035**		-0.057***
		(0.017)		(0.017)
Income Unusually High Last Year		0.030		-0.037
		(0.024)		(0.026)
Income Unusually Low Last Year		0.026		-0.028
		(0.019)		(0.020)
Luck Important in Financial Affairs	-0.025*	-0.029**	-0.037***	-0.035***
	(0.013)	(0.013)	(0.012)	(0.012)
Controls for Planning Horizon and Risk Aversion?	No	Yes	No	Yes
Observations	4,341	4,341	4,341	4,341
R-Squared	0.043	0.062	0.079	0.088

Notes: Omitted category for health status is excellent. Omitted category for expectations of future economy is same or better. For non-positive values of normal income and desired saving, the logarithmic values are set equal to zero. *Significant at 10% level. **Significant at 5% level. ***Significant at 1% level. Standard errors are in parentheses.

Table 3: Fatalism and Saving
Marginal Effects of Probit Regressions
Dependent Variable Equals One if Individuals Generally Save

Variable	(1)	(2)
Married	0.018	0.008
	(0.016)	(0.015)
Female	-0.050***	-0.030*
	(0.019)	(0.018)
Black	-0.045**	-0.029
	(0.019)	(0.019)
Age	0.002	0.001
	(0.002)	(0.002)
Age Squared	-0.000	-0.000
	(0.000)	(0.000)
Log (Normal Income)	0.035***	0.033***
	(0.004)	(0.005)
High School Graduate	0.061***	0.040**
	(0.015)	(0.016)
Some College	0.058***	0.024
	(0.016)	(0.018)
College Graduate	0.118***	0.076***
	(0.014)	(0.017)
Post College Degree	0.126***	0.075***
	(0.015)	(0.018)
Good Health	-0.047***	-0.042***
	(0.014)	(0.014)
Fair Health	-0.068***	-0.041**
	(0.021)	(0.020)
Poor Health	-0.193***	-0.135***
	(0.037)	(0.035)
Future Economy Will Perform Worse		-0.045***
		(0.016)
Income Unusually High Last Year		0.060***
		(0.017)
Income Unusually Low Last Year		-0.018
		(0.018)
Luck Important in Financial Affairs	-0.017	-0.021*
	(0.011)	(0.011)
Controls for Planning Horizon and Risk Aversion?	No	Yes
Observations	4,341	4,341
R-Squared	0.114	0.145

Notes: Omitted category for health status is excellent. Omitted category for expectations of future economy is same. For non-positive values of normal income and desired saving, the logarithmic values are set equal to zero. *Significant at 10% level. **Significant at 5% level. ***Significant at 1% level. Standard errors are in parentheses.

Table 4: Fatalism and Saving -- Separate Regressions by Risk Category
Marginal Effects of Probit Regressions
Dependent Variable Equals One if Individuals Generally Save

Variable	Risk Category	
	Risk Loving/Risk Neutral	Risk Averse
Married	-0.010	0.025
	(0.021)	(0.020)
Female	-0.035	-0.041*
	(0.035)	(0.022)
Black	0.032	-0.059**
	(0.024)	(0.023)
Age	-0.002	0.004
	(0.004)	(0.003)
Age Squared	0.000	-0.000
	(0.000)	(0.000)
Log (Normal Income)	0.021***	0.044***
	(0.006)	(0.007)
High School Graduate	0.046*	0.059***
	(0.025)	(0.019)
Some College	0.052**	0.049**
	(0.024)	(0.021)
College Graduate	0.077***	0.116***
	(0.027)	(0.019)
Post College Degree	0.072**	0.127***
	(0.030)	(0.019)
Good Health	-0.054***	-0.036**
	(0.020)	(0.018)
Fair Health	-0.073*	-0.048**
	(0.042)	(0.024)
Poor Health	-0.140	-0.167***
	(0.096)	(0.040)
Future Economy Will Perform Worse	-0.107***	-0.045**
	(0.036)	(0.019)
Income Unusually High Last Year	0.013	0.100***
	(0.026)	(0.020)
Income Unusually Low Last Year	-0.040	-0.001
	(0.033)	(0.021)
Luck Important in Financial Affairs	-0.003	-0.025*
	(0.017)	(0.014)
Controls for Planning Horizon?	yes	yes
Observations	1,106	3,225
R-Squared	0.131	0.113

Notes: Omitted category for health status is excellent. Omitted category for expectations of future economy is same. For non-positive values of normal income and financial wealth, the logarithmic values are set equal to zero. *Significant at 10% level. **Significant at 5% level. ***Significant at 1% level. Standard errors are in parentheses.

Table 5: Fatalism and Saving -- Evidence from the World Values Survey
Separate Regressions by Risk Category
Marginal Effects of Probit Regressions
Dependent Variable Equals One if Individuals Saved Last Year

	Risk Category	
Variable	Risk Loving/Neutral	Risk Averse
Married	0.012	-0.001
	(0.011)	(0.007)
Female	-0.032***	-0.013**
	(0.009)	(0.006)
Age	-0.010***	-0.007***
	(0.002)	(0.001)
Age Squared	0.000***	0.000***
	(0.000)	(0.000)
Children	-0.005	-0.001
	(0.003)	(0.002)
Satisfaction with Life	0.025***	0.020***
	(0.002)	(0.001)
Little Freedom/Control Over Life	0.013	-0.034***
	(0.017)	(0.010)
Observations	10,596	19,828
R-Squared	0.079	0.078

Notes: All regressions include indicator variables for education levels and income deciles. *Significant at 10% level. **Significant at 5% level. ***Significant at 1% level. Standard errors are in parentheses.