

Aspirations for Income: Status, Competitiveness and Risk Attitudes *

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Abstract

Using a unique and large survey on Dutch households we find robust evidence that people whose income is short of their aspired income are more risk-tolerant and more loss-tolerant than people whose income exceeds their aspirations, after controlling for a number of socio-economic characteristics. Our results provide support for risk-taking being dependent on shifts in reference points, based on aspired income rather than current levels of income. Furthermore, we find that competitive people are more tolerant to risk and that those who strive for status are less averse to losses. We also find greater support for the moving-ahead-of-the-Joneses model of status-seeking than for the keeping-up-with-the-Joneses model.

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1 Aspirations and risk attitudes

‘Men will and do take great risks to distinguish themselves even when they know what the risks are,’ wrote Friedman and Savage (1948, p. 299). They hypothesized that aspirations for status and income causes risk tolerance and loss tolerance. People with aspirations for higher status and higher income are willing to tolerate risk and losses as they strive to ‘distinguish themselves’ by reaching their aspired status and income. In this paper we establish the motivational drivers towards aspiring higher income. To determine to what extent attitudes to risk depend on individual behavior. In order to test the hypotheses laid out by Friedman and Savage we focus on two main drivers which are related to risk-taking, namely competitiveness and status seeking. We find strong support for Friedman and Savages hypotheses in DNB Surveys at the CentERdata of Tilburg University. People who rate themselves relatively competitive are more willing to tolerate risks than those who rate themselves low. Also, people who rate themselves as high on status-seeking are more willing to tolerate losses than people who rate themselves low. Moreover given the evidence that decision-making under risk depends on setting reference points, and in particular goals, we focus on aspired income relative to a benchmark. People who feel that they have less money than they need are more willing to tolerate both risk and losses than people who feel that they have more money than they need. Our findings contribute to the current literature on reference point formation and the findings from Prospect Theory. These findings highlight firstly the importance of expectation formation, and in particular taking aspirations into consideration when forming attitudes towards risk. And secondly the importance of status-seeking and competitiveness as motivational drivers which are heterogeneous across agents. People vary in their aspirations for status and income. Some people are

status-seekers, likely to agree with statements such as ‘I would really like an important job where people look up to me.’ Other people disagree. Some people, even high income ones, suffer low financial well-being, likely to answer ‘definitely less’ to questions such as ‘Do you feel like you have less or more money than you need?’ whereas other people with equal income enjoy high financial well-being, likely to answer ‘definitely more.’ Friedman and Savage described people in the unskilled-workers class with relatively low status and income who are willing to tolerate risk and losses as they strive to reach the middle or upper class. Yet members of the upper class, such as CEOs with relatively high status and income, join in tolerating risk and losses as they strive for even higher status and income. Roussanov and Savor (2012) concluded that status competition in the marriage market causes relatively young single men serving as corporate CEOs to take greater risks than older married men CEOs. They found that stocks of companies headed by relatively young single men are more volatile than stocks of companies headed by older married men. Relatively young single male CEOs also pursue more aggressive investment policies than their older married male counterparts.

2 External habit formation

Models of habit formation are based on an increase in the utility losses from fluctuations in consumption, thus increasing the compensation required to hold risky assets. Hence, have been used to justify the size of the equity premium. Following a large stand of literature in this area, such as Abel (1990), Constantinides (1990), Heaton (1995), and Campbell and Cochrane (1999). Fluctuations in income need to be large to generate big equity premia (Heaton and Lucas, 1996). We are interested in testing the micro effects behind habit formation models. We take the habit-formation hypoth-

esis in terms of external habit; how an individual's ability to consume compares to the consumption of people around them. This form of 'keeping up with the Joneses' model of habit-formation, is one which is likely to be dependent on motivational drivers of competitiveness and of status seeking. We test directly whether motivational drivers, such as competitiveness and status-seeking result in being more tolerant to risk and to losses.

Two status models predict that high status-seeking is associated with high risk-tolerance but they differ in their predictions about the type of risk-tolerance. Models where people seek status by the mantra of 'keeping up with the Joneses' predict that people behave as herding conformists, tolerant of systematic or aggregate risk so as to keep up with the Joneses but are less tolerant of unsystematic or idiosyncratic risk. So, for example, people who follow the mantra of keeping up with the Joneses are likely to own mutual funds, exposing them to aggregate risk, but less likely to own individual stocks, exposing them to idiosyncratic risk. Abel (1990) presented a model where people follow the mantra of keeping up with the Joneses, and so did Gollier (2004) and DeMarzo, Kaniel, and Kremer (2008). Models where people follow the mantra of moving ahead of the Joneses include Gregory (1980), Becker, Murphy, and Werning (2005).

Status-seeking models of keeping up with the Joneses and moving ahead of the Joneses assume that all people are either of the keeping up type or the moving ahead type. Yet some people are likely to be of one type, some of the other, and some might care little about status. Roussanov and Savor noted differences in status-seeking among people, pointing to the large literature in evolutionary psychology. Wilson and Daly (2004) and Baker and Maner (2008) presented evidence that mating advantages associated with

high status cause men, especially young ones, to take high risk. Household surveys, such as by Love (2010), indicate that marriage is generally followed by decreases in portfolio allocations to stocks and other risky assets.

We add to existing work in a survey that includes a direct measure of status-seeking rather than proxies for status-seeking such as age and gender. We find that men, especially young men, tend to be status-seekers. High levels of status-seeking are associated with high loss-tolerance. High levels of status-seeking are also associated with greater likelihoods of owning mutual funds, indicating high tolerance for aggregate risk. But high levels of status-seeking are especially associated with high likelihoods of owning individual stocks, indicating high tolerance to idiosyncratic risk. This implies that status seekers are more likely to be of the moving ahead of the Joneses type than of the keeping up with the Joneses type.

People who suffer low financial well-being are people whose circumstances are short of their aspirations. Lopes and Oden (1999) emphasized that aspirations cause risk-tolerance in their SP/A theory. S stands for security, P for potential and A for aspirations. They noted that the A (aspiration) criterion operates on a principle described by Dubins and Savage (1976) where people judge the attractiveness of a lottery by the probability that it would carry them to their aspiration level or above it. For example, people in a casino with \$1,000 who aspire for \$10,000 are better off with a single large high risk bet that offers a chance, however small, of winning \$10,000. People who take low risk in a series of small bets are worse off because they have virtually no chance of winning the aspired \$10,000.

The observation to circumstances short of aspirations cause risk tolerance is evident among managers in troubled firms (Bowman, 1980; 1982) as well as among subsis-

tence farmers (Kunreuther and Wright, 1979). Experimental studies using managers as subjects also show that circumstances short of aspirations cause risk tolerance. See Laughhunn, Payne, and Crum (1980), and Payne, Laughhunn, and Crum (1980).

3 Hypotheses

People whose incomes fall short of their aspirations feel that they have less money than they need. Such people are burdened by low financial well-being. Yet other people with identical incomes enjoy high financial well-being, feeling that they have more money than they need. This implies the first hypothesis, that low financial well-being causes relatively low risk aversion, as people take risks in attempts to reach their aspirations.

Hypothesis 1: People with relatively low financial well-being have relatively low risk-aversion.

We measure the financial well-being of people by a psychological construct developed by Johnson and Krueger (2006). People rated their current financial situation on a scale ranging from 1, very bad, to 7, very good. They indicated on a similar 7 point scale the degree to which they felt they had less or more money than they need, where 1 indicates that they have much less than they need and 7 indicates that they have much more than they need. They also indicated the degree to which they found it difficult to pay their bills, where 1 indicates very difficult, and 7 indicates very easy, and the degree to which they felt they were financially better off than their parents were at the same age, where 1 indicates much worse off, and 7 indicates much better off. Our measure of financial well-being is the average of the scores, where a relatively high average score indicates

a relatively high level of financial well-being. Actual income is ‘objective income. The ‘aspired income of people with low financial well-being exceeds their ‘objective income.

We follow Alessie et al. (2004) in measuring risk-aversion by level of agreement with the statement: ‘I think that it is more important to have safe investments and guaranteed returns than to take a risk for a chance to have the highest possible returns.’ The scale ranges from 1 to 10, where 1 indicates agreement with the statement, implying high risk-aversion and 10 indicates disagreement, implying low risk-aversion.

Low financial well-being may cause people not only to be relatively less risk-averse, but also to be less loss-averse. People who are relatively less loss-averse care relatively less about avoiding financial losses and relatively more about reaping financial gains. This implies a second hypothesis, that relatively low financial well-being causes relatively low loss-aversion, as people expose themselves to losses in attempts to reach their aspirations.

Hypothesis 2: People with relatively low financial well-being have relatively low loss-aversion.

We measure the loss-aversion of people by their responses to the statement: ‘I invest to reap financial gains or to avoid financial losses.’ The scale ranges from 1 to 10, where 1 indicates leaning toward reaping financial gains, implying low loss-aversion, and 10 indicates leaning toward avoiding financial losses, implying high loss-aversion.

Not all people in the unskilled workers class seek to rise into the middle or upper class, and not all people in the millionaires class seek to rise into the billionaires class. People who seek to rise are status-seeking people. Such people might act as

hopeful and optimistic people, motivated to perceive higher probabilities of gains and lower probabilities of losses than objective probabilities. This implies a third hypothesis, that status-seeking causes people to be relatively less risk-averse and less loss-averse.

Hypothesis 3: Status-seeking people are less risk-averse and less loss-averse than people who are not as status-seeking.

We measure status-seeking by levels of agreement with statements derived from the Achievement Motivations Scale of Cassidy and Lynn (1989): ‘I would really like an important job where people look up to me’ ‘I like talking to people who are important’ ‘I want to be an important person in the community’ ‘I like to be admired for my achievements’ ‘I dislike being the centre of attention’ (This statement is assessed on a reverse scale). ‘I like to have people come to me for advice’ ‘I find satisfaction in having influence over others’. The scale goes from 1 to 5, where 1 indicates ‘strongly disagree,’ implying relatively low status seeking and 5 indicates ‘strongly agree,’ implying relatively high status seeking.

Competitiveness, like status-seeking, might cause people to be less risk averse and less loss-averse. There is evidence that men are more competitive than women. Gneezy et al. (2003) found that college men are more eager to compete in solving mazes than college women. Gneezy and Rustichini (2004) found primary school boys are more eager to compete in footraces than girls. There is also evidence that men are less risk averse than women. Charness and Gneezy (2007) assembled data from 10 sets of experiments conducted by different experimenters who did not set out to look for gender differences in risk-aversion, yet found that women were more risk-averse than men. Beckmann

and Menkhoff (2008) found that not even expertise eliminates gender differences in risk-aversion. Women are more risk-averse than men even among professional fund managers.

Differences in levels of testosterone might affect competitiveness and risk aversion more than differences in gender. Sapienza, Zingales, and Maestripieri (2009) found that higher levels of circulating testosterone were associated with lower risk aversion among women, but not among men. At comparably low concentrations of salivary testosterone, however, the gender difference in risk aversion disappeared, suggesting that testosterone has nonlinear effects on risk aversion regardless of gender. Both testosterone and risk aversion have been shown to predict career choices after graduation from an MBA program. People with high testosterone and low risk aversion were more likely to choose risky careers in finance. This leads to the fourth hypothesis:

Hypothesis 4: Competitive people are less risk-averse and less loss-averse than people who are not as competitive.

We measure competitiveness by levels of agreement with statements derived from the Achievement Motivations Scale of Cassidy and Lynn (1989): ‘I try harder when I’m in competition with other people’ ‘It annoys me when other people perform better than I do’ ‘I judge my performance on whether I do better than others rather than on just getting good results’ ‘I would never allow others to get credit for what I have done’ ‘It is important to me to perform better than others on a task’ ‘If I get good results, it doesn’t matter if others do better (The last statement is assessed on a reverse scale). The scale goes from 1 to 5, where 1 indicates ‘strongly disagree,’ implying

relatively low competitiveness and 5 indicates ‘strongly agree,’ implying relatively high competitiveness.

We find support for the four hypotheses in data from a subsection of the DNB Household Survey, a survey sponsored by the Dutch National Bank and administered by CentER at Tilburg University, and a survey of 1,842 Dutch households sponsored by the Dutch National Bank and administered by CentER. We find that men are less risk-averse and less loss-averse than women and that single people are less risk-averse, but not significantly less loss-averse than married people when controlling for competitiveness and status seeking. We also find that that people who are relatively less risk-averse and less loss-averse invest relatively higher proportions of their portfolios in mutual funds and in individual stocks. People motivated by status-seeking are most likely to invest in individual stocks.

4 Reference point formation using aspired income

Friedman and Savage were prompted into their analysis by the puzzling observation that many people who buy insurance policies also buy lottery tickets. People indicate that they are risk-averse by buying insurance policies, yet they indicate that they are risk-seeking by buying lottery tickets. Friedman and Savage offered a solution to the puzzle in a utility function where utility is a function of wealth. The function is concave everywhere except for a particular region of wealth where it is convex. People display risk-averse behavior in gambles where wealth outcomes are in the concave regions of the utility function but they display risk-seeking behavior in gambles where wealth outcomes are in the convex region. This depiction was modified by Markowitz (1952) who argued that the convex portion of the utility function is not centered at

a particular level of wealth common to all people but at a customary wealth specific to each person. Kahneman and Tversky (1979) built on the insights of Friedman and Savage and Markowitz in prospect theory where utility is determined not by wealth but by wealth relative to reference wealth. That reference wealth might be the current level of a person's wealth but it might also be an expected or aspired level of wealth.

Koszegi and Rabin (2006) developed a model of reference dependent preferences, where reference levels correspond to expectation or aspiration levels of wealth rather than to current or status-quo levels of wealth. They noted, for example, that an employee with a \$50,000 salary who expected a \$60,000 salary would regard a \$50,000 salary as a \$10,000 loss relative to his expected salary, rather than as a zero loss relative to his \$50,000 status-quo salary. They further noted that their model is consistent with the finding that some workers set a daily aspired income, such that they stop working once they have reached their aspired income. Camerer et al. (1997) found that taxi drivers are less likely to work in the afternoon if they have reached their aspired income in the morning. Larrick, Heath, and Wu (2009) found, in experiments, that aspirations to meet goals increase risk-tolerance. In one set of experiments they presented to participants the following hypothetical scenario:

John works in sales. With two days left, he has completed 26 sales. He is considering two strategies:

(A) He knows that if he concentrates his remaining two days on the 4 clients most ready to buy, he can close those deals.

(B) He can spend his time spot-calling his entire remaining base of 20 clients. On average, this strategy in the past has produced anywhere from 2 to 8 sales.

Which strategy will John prefer?

In this scenario John has no particular goal and participants thought he would be mildly risk-averse: 54% said John would prefer the certain strategy, 46% said John would prefer the risky one.

Another group of participants was given a version in which the first sentence was changed to: John works in sales and has set a goal of making 30 sales this month. Here, John can reach his goal with certainty by using Strategy A. Larrick et al. found that the goal makes John much more risk-averse, as predicted by the concavity of prospect theory's value function in the domain of gains. Of participants, 96% believed John would be risk-averse and would prefer the certain Strategy A.

Finally, another group of participants was given a version where John's safe strategy would leave him below his goal. In this version, John had a goal of making 30 sales and had completed only 21. Larrick et al. found that 77% of participants believed John would prefer the risky Strategy B, as predicted by the convexity of the value function in the domain of losses. Larrick et al. wrote: 'Overall, the value function makes a strong prediction that if people treat goals as reference points they will typically behave in a risk-seeking manner when they are deciding among outcomes that fall short of their goal.'

We test the importance of the relative measure of financial wellbeing, which uses objective income as a benchmark such that when financial wellbeing is low, aspirations are not met and aspired income is higher. The opposite occurs when financial wellbeing is high, and income is higher than the aspired level. It is this behavior using aspired income as the reference point that we include as an explanatory variable for risk attitudes. Explicitly we test if risk attitudes depend on financial wellbeing? We also distinguish between risk attitudes, such that we observe risk-tolerance and loss-

tolerance separately. Our paper therefore builds upon and contributes to the existing literature in understanding the importance of aspirations and goals in reference point formation and in explaining risk attitudes.

We present our four hypotheses within expected utility theory and prospect theory, depicted in Figures 1 and 2. Hypothesis 1 states that relatively low financial well-being causes relatively low risk-aversion. People with relatively low risk-aversion are more likely than people with relatively high risk-aversion to forgo a sure amount for a chance for a higher amount, and their relatively low risk-aversion is reflected in disagreement with the statement: ‘I think that it is more important to have safe investments and guaranteed returns than to take a risk for a chance to have the highest possible returns.’ This hypothesis is depicted in Figure 3, where relatively low financial well-being causes relatively low risk-aversion, reflected in low concavity in the expected utility function. Relatively low concavity can turn into convexity, reflecting risk-seeking, as in the utility function offered by Friedman and Savage. Utility is dependent on the level of financial wellbeing, and is depicted on the y-axis rather than utility or value as in the standard approach.

Hypothesis 2 states that relatively low financial well-being causes relatively low loss-aversion. People with relatively low loss-aversion are likely to lean toward reaping financial gains in the statement ‘I invest to reap financial gains or to avoid financial losses,’ whereas people with relatively high loss-aversion are likely to lean toward avoiding financial losses.

Hypothesis 2 takes two forms. In the first form, presented in Figure 4, higher loss-aversion is depicted in a steeper declining curve in the loss region of the prospect theory function. For example, people with no loss-aversion are willing to accept a 50-50 bet

for doubling their wealth or losing all of it. People with moderate loss-aversion might be willing to accept a 50-50 bet for doubling their wealth or losing 30% of it. People with high loss-aversion might be willing to accept a 50-50 bet for doubling their wealth or losing 10% of it.

In the second form of Hypothesis 2, presented in Figures 5a, 5b, and 5c, levels of loss-aversion are depicted by shifts in the reference point. Consider three people, each with a \$60,000 ‘objective income.’ The first person, presented in Figure 5a, has middling well-being, as his objective income equals his aspired income. His prospect theory reference point is \$60,000, equal to his aspired income. The second person, presented in Figure 5b, has relatively low well-being; his \$60,000 objective income is lower than the aspired \$80,000 income which serves as his prospect theory reference point. That person sees himself in the domain of losses of the prospect theory function, inducing him to focus on reaping gains more than on avoiding losses, and willing to accept the possibility of losses as he reaches for his aspired income. The third person, presented in Figure 5c, has relatively high well-being; his \$60,000 objective income is higher than his aspired \$40,000 income which serves as his prospect theory reference point. That person sees himself in the domain of gains of the prospect theory function, inducing him to focus on avoiding losses more than on reaping gains, and unwilling to accept the possibility of losses for the possibility of gains.

Hypotheses 3 and 4 state that status-seeking and competitiveness cause low risk-aversion and low loss-aversion. We depict the risk-aversion portion of the hypothesis in Figure 6, analogous to Figure 3, where high status-seeking or competitiveness causes low risk-aversion. We depict the loss-aversion portion of the hypothesis in Figure 7, analogous to Figure 5, where levels of loss-aversion are depicted in shifts in the refer-

ence point. The aspired incomes of status-seeking or competitive people exceed their objective incomes, placing them in the domain of losses, as in Figure 7a, causing them to accept further losses as they attempt to reach their aspirations. Conversely, the objective incomes of people who are not status-seeking or competitive exceed their aspired incomes, as in Figure 7b, causing them to forego gains as they shy away from losses.

5 Data Description and Findings

We already alluded to questions about financial well-being, risk-aversion, loss-aversion, status-seeking and competitiveness. We also have data on annual household net income, co-habiting or single status, gender, number of children, education, whether holding individual stocks or not, and whether holding mutual funds or not.

We code gender as 1 for female and 0 for male, 1 as single and 0 as co-habiting. We code levels of education from 1 to 6, where 1 stands for basic school education until age 16, 2 for preparatory middle-level applied education (vmbo), 3 for higher general continued education until age 17 (havo) or preparatory scientific education (vwo) until age 18, 4 for additional vocational training, referred to as middle-level applied education (mbo), 5 for applied university degree (hbo) and 6 for scientific university degree (wo). We code as 1 those who invest in individual stocks and code as 0 those who do not. Similarly, we code as 1 those who invest in mutual funds and as 0 those who do not. We present summary statistics in Table 1.

The 1,840 people in our survey sent out in April 2010 are members of 1,380 households. The response rate was 80%, with respondents ranging from 18 to 88-years old, with a mean of 53. We have almost equal proportions of males and females, 53% males and 47% females. Singles account for 22% of respondents in our sample. Among the

respondents are 139 who invest in individual stocks and 216 who invest in mutual funds.

Table 2 presents relations between financial well-being, status-seeking, competitiveness, and socio-economic factors; income, education, age, gender, single or co-habiting status, and number of children. Regressions are OLS. Ordered logit regressions provide very similar results, and are available on request.

People with relatively high net household incomes are more likely to perceive themselves as enjoying high financial well-being than people with relatively low incomes. We find that the coefficient of income is positive and statistically significant. Yet Figure 8 shows the wide variation of financial well-being at similar levels of income. Indeed, some people at the highest levels of income perceive themselves as having lower financial well-being than people at the lowest levels of income.

We also find that older people enjoy higher financial well-being than younger ones, that people with relatively high levels of education enjoy relatively high levels of financial well-being, and that people with fewer children enjoy higher financial well-being than people with more children; all coefficients are statistically significant. But there is no statistically significant relation between financial well-being and gender, single, status-seeking, or competitiveness. We place status-seeking and competitiveness in two separate regressions because the 0.54 correlation between them is relatively high.

Table 3 presents the relation between risk-aversion and financial well-being, status-seeking, competitiveness, and socio-economic variables. We find, consistent with our first hypothesis and its depiction in Figure 3 that people who enjoy relatively high financial well-being are relatively risk-averse. The coefficient of financial well-being is positive and statistically significant.

We also find, consistent with the third and fourth hypotheses and their depiction

in Figure 6, that status-seeking people are relatively less loss-averse than people who are not as status-seeking. And that competitive people are relatively less risk-averse than people who are not as competitive. The coefficients of both status-seeking and competitiveness are negative and statistically significant in table 3 and table 4.

As is consistent with the literature, older people are more risk-averse than younger people, and women are more risk-averse than men. Singles are less risk-averse than co-habiting. Yet there is no statistically significant relation between risk-aversion and income, education, or number of children. People with relatively high incomes have relatively high financial well-being, but it is financial well-being which causes risk-aversion, not income.

Loss-aversion is relatively high when risk-aversion is relatively high, but our findings point to the fact that they are distinct. Different motivational drivers influence these measures of risk attitudes. Specifically, competitiveness influences risk-tolerance, and status-seeking influences tolerance to loss. The 0.23 correlation between them is not very high.

6 Keeping up with the Joneses or moving ahead of them?

As noted earlier, two models of status-seeking offer different predictions as to the particular investments preferred by status-seekers. The ‘keeping up with the Joneses’ model predicts that status-seekers would choose investments with high systematic risk, such as mutual funds, so as not to fall behind the Joneses. In contrast, the ‘moving ahead of the Joneses’ predicts that status-seekers would choose investments with high idiosyn-

cratic risk, such as stocks, so as to move ahead of the Joneses if their chosen stocks prove successful.

Compare a regression of the probability of holding mutual funds on status-seeking to a regression of the probability of holding individual stocks on status-seeking. In both regressions we control for differences in risk-aversion, education, income, age, gender, single or cohabiting, and number of children. We find, as presented in Table 5, that the probability of holding mutual funds is relatively high when status-seeking is relatively high, consistent with the keeping up with the Joneses model of status seeking, and that the probability of holding individual stocks is relatively high when status-seeking is relatively high, consistent with the moving ahead of the Joneses model of status-seeking. But the evidence for the moving ahead of the Joneses model is much stronger than the evidence for the keeping up with the Joneses model. The coefficient of status-seeking is statistically significant at the 0.01 level in the regression where the probability of holding stocks is the dependent variable, whereas it is only significant at the 0.10 level in the corresponding regression where the probability of holding mutual funds is the dependent variable. We find similar results in regressions where loss-aversion replaces risk-aversion among the control variables.

We find that the probability of holding mutual funds higher for singles than for cohabiting, and for men than women. The same is true for the probability of holding individual stocks. The probability of holding mutual funds is relatively high among older people with relatively high levels of education and relatively high incomes. The same is true for the probability of holding individual stocks.

7 Conclusion

We find that perceptions of incomes and status short of aspirations cause people to take risks and expose themselves to losses in attempts to reach their aspirations. Yet other people perceive identical incomes and status as exceeding their aspirations and are less willing to take risks and expose themselves to losses. Our findings are consistent with the hypotheses of Friedman and Savage. They are also consistent with everyday observations of people with relatively low incomes and status who are content with what they have and reluctant to take risks and expose themselves to losses, and people with vast riches and exalted status who take great risks and expose themselves to great losses as they reach for even greater riches and higher status.

Our findings imply that people might be inclined to take fewer risks and less inclined to expose themselves to losses when their incomes decline if their aspirations decline further than their incomes. For example, a crisis, such as that of 2008, might make people more risk-averse and more loss-averse as it tamps down aspirations further than it tamps down incomes. Conversely, economic liberalization, such as in China, might drive people to take greater risks and expose themselves to greater losses as their aspirations increase further than their incomes.

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Table 1: Summary Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Wellbeing	1840	5.472	2.862	0	10
Risk Aversion	1840	7.624	2.013	1	10
Loss Aversion	1833	5.226	2.646	1	10
Status Seeking	1803	2.922	0.585	1	5
Competitiveness	1803	2.692	0.537	1	4.571
Education	1837	3.706	1.514	1	6
Income	1798	7.819	0.514	3.091	11.443
Age	1840	53.425	15.080	18	88
Gender	1840	0.466	0.499	0	1
Single	1840	0.217	0.412	0	1
Number of Children	1840	0.704	1.053	0	6
Individual Stocks	1840	0.076	0.264	0	1
Mutual Funds	1840	0.117	0.322	0	1

Table 2: Explaining Financial Wellbeing.

Financial Wellbeing	(1)	(2)
Status Seeking	.044 (.117)	
Competitiveness		-.146 (.121)
Education	.266 (.047)***	.267 (.046)***
Income	1.381 (.200)***	1.386 (.200)***
Age	.885 (.230)***	.832 (.228)***
Female	-.016 (.128)	-.035 (.128)
Single	.060 (.193)	.052 (.194)
Number of Children	-.419 (.069)***	-.424 (.069)***
Const.	-9.529 (1.891)***	-8.813 (1.928)***
Obs.	1759	1759
R^2	.141	.141

Table 3: Explaining Risk-Aversion.

Risk-Aversion	(1)	(2)
Financial Wellbeing	.068 (.019)***	.066 (.019)***
Status Seeking	-.148 (.090)	
Competitiveness		-.243 (.090)***
Education	.059 (.033)*	.050 (.033)
Income	.065 (.101)	.052 (.100)
Age	.993 (.162)***	.985 (.161)***
Female	.491 (.097)***	.491 (.097)***
Single	-.164 (.125)	-.182 (.125)
Number of Children	-.013 (.050)	-.023 (.050)
Const.	2.383 (1.074)**	2.796 (1.093)**
Obs.	1759	1759
R^2	.055	.057

Table 4: Explaining Loss-Aversion.

Loss-Aversion	(1)	(2)
Financial Wellbeing	.042 (.025)*	.041 (.025)*
Status Seeking	-.263 (.120)**	
Competitiveness		.061 (.121)
Education	-.079 (.044)*	-.092 (.044)**
Income	.034 (.138)	.004 (.139)
Age	.986 (.217)***	1.095 (.214)***
Female	.456 (.128)***	.500 (.128)***
Single	.120 (.166)	.119 (.167)
Number of Children	-.104 (.065)	-.102 (.065)
Const.	1.293 (1.457)	.145 (1.466)
Obs.	1759	1759
R^2	.042	.039

Table 5: The relation between status-seeking and holdings of mutual funds and individual stocks.

	MF	MF	Stocks	Stocks
	(1)	(2)	(3)	(4)
Risk Aversion	-.078 (.019)***		-.114 (.022)***	
Loss Aversion		-.067 (.016)***		-.078 (.019)***
Status Seeking	.134 (.072)*	.124 (.076)	.277 (.088)***	.249 (.086)***
Education	.156 (.030)***	.147 (.029)***	.087 (.033)***	.074 (.033)**
Income	.272 (.087)***	.280 (.103)***	.328 (.114)***	.340 (.117)***
Age	.784 (.154)***	.784 (.172)***	1.049 (.204)***	.997 (.202)***
Female	-.318 (.088)***	-.320 (.089)***	-.213 (.102)**	-.241 (.101)**
Single	.222 (.106)**	.243 (.112)**	.224 (.128)*	.263 (.128)**
Number of Children	-.057 (.049)	-.059 (.049)	.115 (.052)**	.112 (.052)**
Const.	-6.433 (.962)***	-6.689 (1.119)***	-8.346 (1.272)***	-8.523 (1.288)***
Obs.	1759	1759	1759	1759
R^2				

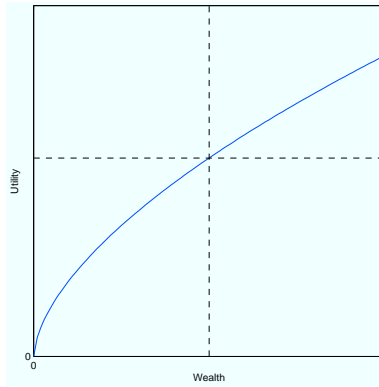


Figure 1: Expected utility function: Utility is a function of wealth.

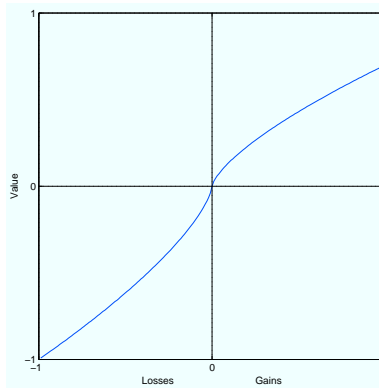


Figure 2: Prospect theory function: Value is a function of gains and losses.

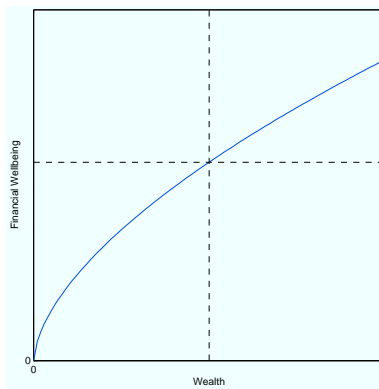


Figure 3: People with relatively low financial well-being have relatively low risk aversion.

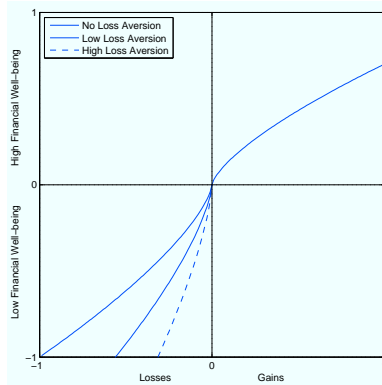


Figure 4: People with relatively low financial well-being have relatively low loss aversion.

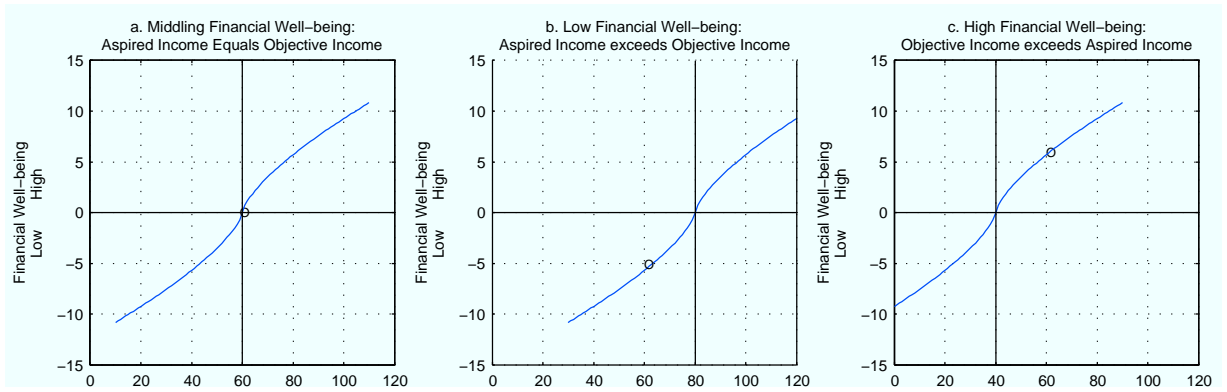


Figure 5: The association between financial well-being and aspirations as reference points.

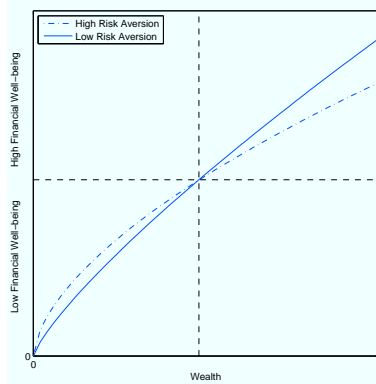


Figure 6: People with relatively low competitiveness or relatively low status-seeking have relatively high risk aversion.

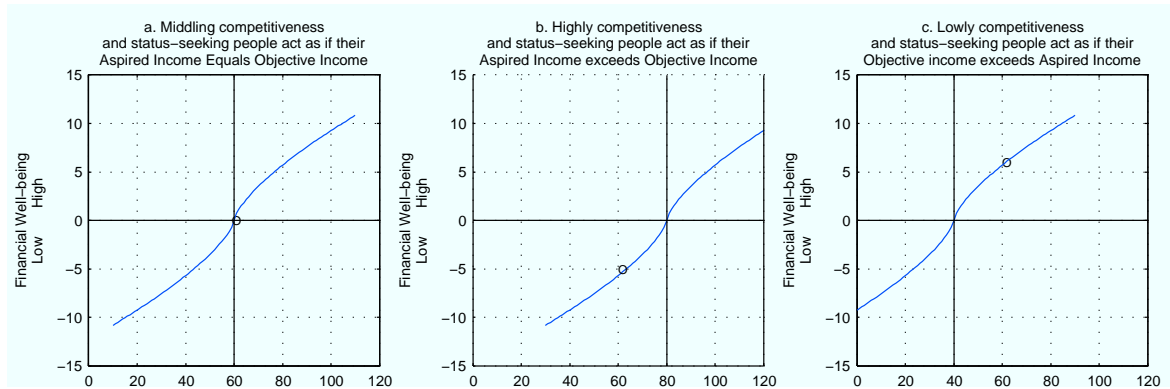


Figure 7: People with relatively low competitiveness or relatively low status-seeking have relatively high loss aversion.

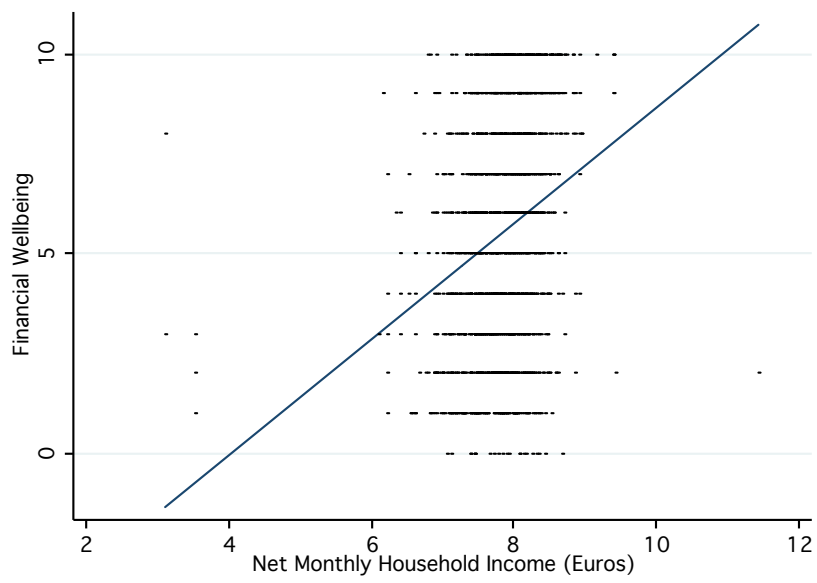


Figure 8: The Relation between Income and Financial Wellbeing.