Culture in Risk, Regret, Maximization, Social Trust, and Life Satisfaction

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Abstract

Cultural literacy is analogous to financial literacy and is almost as important. Cultural literacy matters to advisors as they design fitting financial plans because clients carry within them the cultures of their countries of origin long after they have settled in their countries of residence. Culture is associated with risk tolerance, propensities for regret, maximization, social trust, life satisfaction, income, family and public safety nets, and more.

Surveys of 4,690 people in twenty-three countries show that risk tolerance is high in countries where income per capita is low, perhaps because aspirations for higher income are more prevalent in countries where income is low. And risk tolerance is high in countries where social trust is high. Propensity for regret is high in individualistic countries, where people cannot rely on family and friends to mitigate regret by diffusing responsibility for choices and in countries where intellectual autonomy is high, increasing personal responsibility for choices.

Introduction

Social trust is part of culture and varies across cultures. People of different cultures offer different answers on average to a question assessing social trust: "Generally speaking, would you agree that most people can be trusted, or that you always have to be careful in dealing with people other than your family?"

Think of clients who immigrated into the United States from a low-trust culture such as that of Brazil, Pakistan, or Greece, engaging advisors born in the United States and immersed in its culture. American culture is fairly high in trust although not as high in trust as the cultures of Sweden, Finland, or Norway. Would American advisors be culturally literate, that is, aware of their own cultural assumptions and possible biases about levels of trust they can expect prospects and clients to place in them? Would they be aware of and able to adapt to the cultural assumptions and possible biases of prospects and clients about levels of trust they are willing to place in advisors?

Or think of clients from collectivistic cultures such as those of China, Vietnam, and Portugal, where people are expected to care for members of their extended families. They engage American advisors immersed in the most individualist culture in the world, where people are expected to care only for members of their immediate families, limited to spouses and minor children. Advisors using goals-based planning usually ask clients: "What goals are important to you?" Clients might mention retirement, education, and bequest, but clients and advisors unaware of cultural differences might overlook implicit culture-based goals and responsibilities. Advisors aware of culture might ask: "Do you consider financial support to needy aging parents as one of your goals or responsibilities? Do you consider financial support to needy grown children as one of your goals or responsibilities? Do you consider financial support to needy brothers, sisters, or other members of your extended family and friends as one of your goals or responsibilities?" Clients sharing a common culture might answer these questions differently, but clients of different cultures are likely to answer these questions differently. The goals and responsibilities of clients rooted in collectivistic cultures encompass their extended families. These goals and responsibilities must be part of a comprehensive financial plan.

Questions that reflect an awareness of culture should be incorporated into investor questionnaires and into conversations between advisors and investors. Most of today's investor questionnaires are risk questionnaires that measure risk tolerance, but Pan and Statman (2012) argued that advisors must also know client propensities for regret, maximization, social trust, and life satisfaction, etc. Some propensities are associated with other propensities but none fully overlap. For example, people with a propensity toward risk tolerance tend to also have a propensity toward social trust; although the association is statistically significant, the correlation between the two is low. Moreover, some propensities are largely independent of others. For example, the correlation between the propensity for risk tolerance and the propensity for regret is nearly zero.

The sample in Pan and Statman (2012) included only Americans, making no distinction between recent immigrants into the United States, Americans born in the United States to immigrant parents, or Americans whose parents, grandparents, and several generations before were born in the United States. This study uses surveys to make distinctions among 4,690 people born in twenty-three countries and residing in their birth countries. It tests six hypotheses:

Hypothesis 1: Family and friends safety net hypothesis. Risk tolerance is high in countries where family and friends provide strong safety nets.

> *Clients sharing a common culture might answer these questions differently, but clients of different cultures are likely to answer these questions differently. The goals and responsibilities of clients rooted in collectivistic cultures encompass their extended families. These goals and responsibilities must be part of a comprehensive financial plan.*

Hypothesis 2: Public safety net hypothesis. Risk tolerance is high in countries where public safety nets are strong.

Hypothesis 3: Aspirations hypothesis. Risk tolerance is high in countries where income per capita is low.

Hypothesis 4: Social trust hypothesis. Risk tolerance is high in countries where social trust is high.

Hypothesis 5: Regret and individualism hypothesis. Propensity for regret is high in individualistic countries.

Hypothesis 6: Regret and autonomy hypothesis. Propensity for regret is high in countries where intellectual autonomy is high.

I find that people with high risk tolerance also have high propensity for social trust. But people with high risk tolerance are no more likely to have high propensity for regret than people with low risk tolerance. Risk tolerance is higher among people in collectivistic countries, where family and friends safety nets are strong, than in individualistic countries where they are weak. Yet risk tolerance is low in countries where public safety nets are strong. Risk tolerance is high in countries where income per capita is low and in countries where social trust is high. Propensity for regret is high in individualistic countries and in countries with high intellectual autonomy.

Culture

Guiso et al. (2006, 23) defined culture as "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation." Immigrants absorb the cultures of their countries of emigration and immigration and cultural cues make each culture prominent. LeBoeuf et al. (2010) studied Chinese-Americans born in East Asian countries who have lived in the United States for five years or longer. They made Chinese identity prominent in one group with questions such as "Where were you born?" and "Name one Chinese landmark that you've visited or would like to visit." They made American identity prominent in another group with questions such as "What town do you live in at the moment?" and "Name one U.S. landmark that you've visited or would like to visit." LeBoeuf et al. found that American stereotypical preferences for uniqueness and non-cooperation were more pronounced when American identities were made prominent. Statman and Weng (2010) found differences in attitudes toward spending, saving, and investing among Americans of Chinese origin who were born abroad, children of Americans of Chinese origin born in the United States, and Americans who were born in the United States to American-born parents.

Culture affects investment behavior. Grinblatt and Keloharju (2001) found that Finnish investors are likely to hold stocks of nearby Finnish companies whose chief executives share their cultural background and communicate in Finnish. Kumar et al. (2012) found that mutual funds have lower investment inflows and greater sensitivity of flows to investment returns when fund managers have foreign-sounding names. This is true even when managers with foreign-sounding names follow common investment styles and demonstrate good investment skills.

Ahern et al. (2012) found that the number of cross-border mergers is smaller when countries are more culturally distant. Giannetti and Yafeh (2012) found that culturally distant lead banks offer borrowers smaller loans at higher interest rates than those offered by culturally close lead banks. Culturally distant lead banks are also more likely to require third-party guarantees. A one-standard-deviation increase in cultural distance, approximately the cultural distance between Canada and the United States or between Japan and South Korea, is associated with a 6.5-basis-point higher loan spread; the loan spread increases by about 23 basis points if the bank-company pair involves culturally more-distant countries such as Japan and the United States. Cultural differences also diminish risk sharing between participant banks and culturally distant lead banks.

Culture is associated with religion. McGuire et al. (2012) found that companies headquartered in areas with strong religious social norms engage in fewer financial reporting irregularities. Baele et al. (2011) found that default rates on Islamic loans in Pakistan are less than half those on conventional loans. Borrowers taking both conventional and Islamic loans from the same bank are less likely to default on their Islamic loans than on their conventional loans. Moreover, borrowers are less likely to default on Islamic loans during Ramadan and in places where people tend to vote for religious-political parties.

Cultural Dimensions

The range between individualism and collectivism is a cultural dimension discussed by Hofstede (2001). Hofstede defined individualism on his website as "a preference for a loosely-knit social framework in which individuals are expected to take care of themselves and their immediate families only." At the opposite end is collectivism, which, in Hofstede's words, "represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty."[1]

Autonomy is a cultural dimension discussed by Schwartz (1994), who distinguished two types: intellectual autonomy, encouraging people to pursue their own intellectual directions and ideas independently; and affective autonomy, which encourages people to pursue affectively positive experiences for themselves. Embeddedness is at the opposite end from autonomy. In embeddedness, cultures are meaningful largely through social relationships, identification with the group, participation in its shared way of life, and striving toward its shared goals.

Social trust is a cultural dimension and Bjørnskov (2007) found that its roots are deep; levels of social trust in countries are closely related to longlasting national characteristics. Guiso et al. (2008) explored the link between social trust and stock market participation. They noted that social trust matters because the risk of being cheated deters investors from buying stocks and found that high levels of social trust are associated with high levels of stock market participation.

Culture in Risk Tolerance

Risk tolerance is composed of risk perception and risk preference. Wealthy people who are offered 50-50 gambles to win $300 or lose $100 might have the same risk preference as poor people who are offered the same gambles, yet their risk perceptions are likely different. Wealthy people likely perceive the gambles as low-risk because $100 is minuscule relative to their wealth whereas poor people likely perceive the same gambles as high-risk because $100 is substantial relative to their wealth. Similarly, poor people who can rely on strong safety nets of family and friends might perceive gambles as low-risk whereas equally poor people with identical risk preferences but without such safety nets might perceive the same gambles as high-risk.

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Weber and Hsee (1998) found that the risk tolerance of Chinese and Polish students is higher than that of American and German students. Yet they also found that differences in risk tolerance across the four countries stem from differences in risk perceptions rather than from differences in risk attitudes. Weber and Hsee (1998) hypothesized that people in collectivist countries, such as China and Poland, perceive risk as lower than people in individualistic countries, such as the United States and Germany, because people in collectivistic countries have strong safety nets of family and friends, whereas the safety nets of family and friends in individualistic countries are weak. Strong safety nets of family and friends yield perceptions of low risk. This leads to the family and friends safety net hypothesis:

Hypothesis 1: Family and friends safety net hypothesis. Risk tolerance is high in countries where family and friends provide strong safety nets.

People in France are almost as individualistic as people in the United States, providing a weak safety net of family and friends. But France differs from the United States by providing a strong public safety net, including generous health and unemployment benefits. Public social spending in amounted to 33.2 percent of net national income France in 2005 but amounted to only 18.1 percent of net national income in the United States that year. Public safety nets might substitute for family and friends safety nets such that people are more risk tolerant in countries with strong public safety nets than in countries with weak public safety nets. This leads to the public safety net hypothesis:

Hypothesis 2: Public safety net hypothesis. Risk tolerance is high in countries where public safety nets are strong.

Weber and Hsee (1998) noted that differences in risk perceptions might stem from factors other than differences in safety nets. Aspirations are one such factor. Koedijk et al. (2013) explored the association between aspirations, financial well-being, and risk tolerance. Financial well-being is low when actual income is short of aspired income. People with low financial well-being are likely to say, for example, that they have less money than they need and have trouble paying bills. People with high actual income might suffer low financial well-being if their very high aspired incomes exceed their merely high actual incomes; however, on average, low financial well-being is more prevalent among people with low actual incomes than among people with high actual incomes. Koedijk et al. (2013) found that people with low financial well-being are more risk tolerant than people with high financial well-being, and they are willing to take risk for a chance to reach their aspirations. It is likely that gaps between aspired incomes and actual incomes are larger in countries with low income per capita than in countries with high income per capita. This leads to the aspirations hypothesis:

Hypothesis 3: Aspirations hypothesis. Risk tolerance is high in countries where income per capita is low.

Guiso et al. (2008) found that high levels of social trust are associated with high levels of stock market participation. They provided evidence that trust is not a mere proxy for risk tolerance so as to set aside the possibility that greater stock market participation in countries with high levels of social trust is due to high risk tolerance in such countries. Yet Pan and Statman (2012) found that

high social trust is associated with high risk tolerance. This leads to the social trust hypothesis.

Hypothesis 4: Social trust hypothesis. Risk tolerance is high in countries where social trust is high.

Culture in Propensity for Regret

Zeelenberg and Pieters (2007, 3) described regret as "the emotion that we experience when realizing or imagining that our current situation would have been better, if only we had decided differently … It is an unpleasant feeling, coupled with a clear sense of self blame concerning its causes and strong wishes to undo the current situation." Shimanoff (1984) found that people mention regret as the most frequently experienced negative emotion. The experience of regret is evident in studies of the brain. Camille et al. (2004) found that patients with orbitofrontal cortex damage did not experience regret. Moreover, such patients did not consider the likelihood of regret when making decisions. Coricelli et al. (2005) found a link between the experience of regret and the orbitofrontal cortex in studies with functional magnetic resonance imaging (fMRI) techniques.

Regret is a teacher, even if a stern one, encouraging us toward behavior likely to bring pride and discouraging us from behavior likely to inflict regret. Landman et al. (1995) found that regret is painful in the short run, associated with anxiety and depression, but regret is motivating in the long run; people who "acknowledge thoughts of past missed opportunities are more likely to envision future changes in their lives."

People are generally averse to both risk and regret, but regret is distinct from risk. Bar-Hillel and Neter (1996) found that fewer than half of people agreed to exchange lottery tickets they were given for other lottery tickets. One lottery ticket is as risky as another, so the reluctance to exchange tickets cannot be attributed to risk aversion. Instead, Bar-Hillel and Neter (1996) attributed the reluctance to the anticipated regret people would feel when they find, too late, that their original lottery ticket had won the prize. In contrast, more than 90 percent of people agreed to exchange pens they have received.

Regret is associated with both action and inaction; we can regret the action of switching from stock A to stock B knowing, in hindsight, that we would have been better off had we kept stock A, and we can regret our inaction in keeping stock A knowing, in hindsight, that we would have been better off had we have switched to stock C. Gilovich and Medvec (1995) found that Americans generally regretted action over inaction in the short run but inaction over action in the long run. Regrets of inaction are typically over failures of self-actualization such as not getting enough education, not adequately fulfilling the role of parent or child, or not developing artistic talents. Gilovich et al. (2003) hypothesized that regrets over self-actualization are likely more prominent in cultures that emphasize the self than in cultures that emphasize the group but found no support for the hypothesis in a comparative study of people in China, Japan, Russia, and the United States. The pattern of regretting action in the short term and inaction in the long term was the same in all four countries.

Hur et al. (2009) hypothesized that people in Korea are likely to regret mostly violations of interpersonal norms, whereas people in the United States are likely to regret mostly violations of intrapersonal norms. Interpersonal norms center on the consistency between a person's behavior and behaviors of others. Intrapersonal norms center on the consistency between a person's behavior and that person's usual behavior. They found that Americans are equally likely to regret violations of interpersonal and intrapersonal norms. Regrets among Koreans, however, were especially high when interpersonal norms were violated.

"Regret is associated with both action and inaction; we can regret the action of switching from stock A to stock B knowing, in hindsight, that we would have been better off had we kept stock A, and we can regret our inaction in keeping stock A knowing, in hindsight, that we would have been better off had we have switched to stock C."

Personal responsibility enhances regret whereas group responsibility diffuses it. Indeed, aversion to regret underlies some of the preference for committee decisions over personal decisions. Responsibility is more diffused in collectivistic cultures, where decisions tend to be made by or with family and friends than in individualistic cultures where decisions tend to be personal decisions. This leads to the regret and individualism hypothesis:

Hypothesis 5: Regret and individualism hypothesis. Propensity for regret is high in individualistic countries.

Cultures promoting intellectual autonomy encourage people to pursue their own intellectual directions and ideas independently. Independence enhances personal responsibility and propensity for regret. This leads to the regret and autonomy hypothesis:

Hypothesis 6: Regret and autonomy hypothesis. Propensity for regret is high in countries where intellectual autonomy is high.

Measuring Risk Tolerance

Barsky et al. (1997, 539) noted that the "principal requirement for a question aimed at measuring risk aversion is that it must involve gambles over lifetime income." They added that "experiments in the existing literature typically involve stakes that have little impact

on lifetime resources" (538–539). Barsky et al. (1997) measured risk tolerance by a single well-constructed question about stakes that have substantial impact on lifetime resources:

> *Suppose that you are the only income earner in the family, and you have a good job guaranteed to give you your current (family) income every year for life. You are given the opportunity to take a new and equally good job, with a 50-50 chance it will double your (family) income and a 50-50 chance that it will cut your (family) income by a third. Would you take the new job?*
>
> *If the answer to the first question is "yes," the interviewer continues: Suppose the chances were 50-50 that it would double your (family) income, and 50-50 that it would cut it in half. Would you still take the new job?*
>
> *If the answer to the first question is "no," the interviewer continues: Suppose the chances were 50-50 that it would double your (family) income and 50-50 that it would cut it by 20 percent. Would you then take the new job?"*

The risk-tolerance question Barsky et al. ask is quite different from the typical question in risk-tolerance questionnaires such as one that shows the highest one-year loss and gain on three different hypothetical investments of $10,000. It then asks: "Given the potential gain and loss in any one year, I would invest my money in: …" The choices range from a lottery with a 50-50 chance for a $164 loss or a $593 gain, to a lottery with a 50-50 chance for a $3,639 loss or a $4,229 gain. But stakes affect risk perceptions and risk perceptions affect risk tolerance. Holt and Laury (2002) found that risk tolerance decreases as stakes increase. Many who would be willing to wager $10,000 on a gamble with 50-50 chance for a $3,639 loss or a $4,229 gain might not be willing to wager $100,000 or their overall $10 million portfolio on proportionally higher gains and losses.

The ISO 22222 Personal Financial Planning Standards defines risk tolerance as "the extent to which a consumer is willing to risk experiencing a less favorable financial outcome in the pursuit of a more favorable financial outcome." The Barsky et al. measure of risk tolerance corresponds well to that definition.

Barsky et al. found that their measure of risk tolerance is related to risk-taking behavior. People with high risk tolerance tend to smoke and drink more than people with low risk tolerance, have higher levels of education, be self-employed, live in the western United States, be immigrants, and allocate higher proportions of their portfolios to stocks. They also found that men are more risk tolerant than women, Asians and Hispanics are more risk tolerant than whites or blacks, and Jews are more risk tolerant than Catholics who, in turn, are more risk tolerant than Protestants.

Risk aversion is distinct from loss aversion. Risk aversion relates to choices with no possibility of losses, such as the choice between a sure $100 and an even chance for $300 or zero. Loss aversion relates to choices that include the possibility of losses, such as a choice to accept or reject an even chance to lose $100 or gain $400. Strictly speaking, the Barsky et al. measure and the ISO 22222 measures are measures of loss aversion rather than risk aversion. Yet choices in the world of investments almost always involve the possibility of loss of a portion of an investment or even all of it. Barsky et al. and the ISO 22222 use the language of risk aversion where some might prefer the language of loss aversion, and so do I.

In testing earlier versions of the question, beginning with the Barsky et al. version, I found that people considered "standard of living" terminology more descriptive than "income" terminology. I also found that people found it difficult to conjure in their minds a clear picture of a 100-percent increase in their standard of living but found it easier to conjure a 50-percent increase. I placed the question in the domain of investments.

> *Suppose that you are given an opportunity to replace your current investment portfolio with a new portfolio. The new portfolio has a 50-50 chance to increase by 50 percent your standard of living during your lifetime. However, the new portfolio also has a 50-50 chance to reduce by X percent your standard of living during your lifetime. Circle the maximum X-percent reduction in standard of living you are willing to accept.*

I let people choose the maximum reduction they are willing to accept from three percent to 30 percent in increments of three percent. This range of reductions relative to the 50-percent increase overlaps the Barsky et al. range and extends beyond it.

Data

Data come from public sources, from Bjørnskov (2007), and from surveys conducted with the help of colleagues in twenty-three countries, listed in table 1. Data from public sources include cultural dimensions, income per capita, and social spending. Data on social trust are from Bjørnskov. Data from the surveys include measures of risk tolerance and propensities for regret, maximization, social trust, and life satisfaction. Survey respondents were university students. The countries and the number of participants in each are presented in table 1.[2]

Surveys restricted to university students have advantages and disadvantages. On the disadvantages side is that university students in a county are only one segment of the population of that country. Moreover, university students are young and better educated than others of their age. University students are also likely, on average, to be more intelligent and ambitious. On the advantages side is that university students in each country are similar to university students in other countries by age, education, intelligence, and ambition, making it easier to isolate differences rooted in culture. The sample of each country includes only students born in that country so as not to confound the effects of the culture of each country with the cultures of other countries.

Table 1: Number of People and Mean Risk Tolerance and Propensity for Regret in Each Country

Country	Number of Men	Number of Women	Total	Mean Risk Tolerance			Mean Propensity for Regret		
				Men	Women	Overall	Men	Women	Overall
Brazil	151	61	212	11.30	9.93	10.62	5.97	5.82	5.89
China	159	179	338	18.04	16.09	17.06	4.30	4.85	4.58
Estonia	74	136	210	14.59	12.18	13.39	6.28	6.14	6.21
Finland	64	30	94	15.38	10.90	13.14	5.84	5.60	5.72
France	44	44	88	13.98	9.89	11.93	5.84	6.16	6.00
Germany	159	111	270	15.41	11.05	13.23	6.27	5.82	6.04
India	140	65	205	14.67	12.23	13.45	5.86	5.03	5.45
Israel	117	53	170	12.90	9.91	11.40	6.43	5.92	6.18
Italy	38	37	75	14.32	10.70	12.51	6.66	7.51	7.09
Japan	608	188	796	13.47	11.35	12.41	5.84	5.63	5.73
Malaysia	47	138	185	12.70	11.02	11.86	3.53	4.41	3.97
Netherlands	103	26	129	16.72	15.12	15.92	5.96	6.00	5.98
Norway	104	81	185	12.78	10.70	11.74	5.31	5.83	5.57
Poland	33	65	98	16.18	11.77	13.98	5.79	5.72	5.76
Portugal	75	104	179	11.88	11.16	11.52	3.65	4.21	3.93
Switzerland	39	17	56	13.23	9.88	11.56	5.08	5.82	5.45
Taiwan	111	141	252	16.38	14.49	15.43	5.48	6.14	5.81
Thailand	43	74	117	13.88	12.73	13.31	4.26	4.08	4.17
Tunisia	73	91	164	11.47	9.19	10.33	6.03	5.70	5.87
Turkey	118	85	203	15.08	13.76	14.42	5.42	6.34	5.88
United Kingdom	59	52	111	13.12	10.15	11.64	5.97	5.81	5.89
United States	72	60	132	13.67	11.55	12.61	5.85	6.12	5.98
Vietnam	186	235	421	17.37	15.31	16.34	4.52	4.68	4.60
Total	**2,617**	**2,073**	**4,690**						
Average				**14.28**	**11.79**	**13.03**	**5.48**	**5.62**	**5.55**

Note: The measure of risk tolerance of a person is the X-percent circled by that person in answer to the questions: Suppose that you are given an opportunity to replace your current investment portfolio with a new portfolio. The new portfolio has a 50-50 chance to increase by 50 percent your standard of living during your lifetime. However, the new portfolio also has a 50-50 chance to reduce by X percent your standard of living during your lifetime. Circle the maximum X-percent reduction in standard of living you are willing to accept.

The overall risk tolerance in each country is the mean of the mean risk tolerance of men and the mean risk tolerance of women in each country.

The measure of propensity for regret of a person is the level of agreement with the statement: "Whenever I make a choice, I try to get information about how the other alternatives turned out and feel bad if another alternative has done better than the alternative I have chosen." Agreement scores range from 1 to 10, where high scores indicate high propensity for regret. The overall propensity for regret in each country is the mean of the mean propensity for regret of men and the mean propensity for regret of women in each country.

Earlier studies found that men are, on average, more risk tolerant than women. I measure the risk tolerance of people in each country as the average of the risk tolerance of men and the risk tolerance of women. This measure is unaffected by the proportion of men and women in the sample of each country. I measure similarly the propensity for regret by people in each country.

Maximization

Schwartz et al. (2002) measured propensity for maximization by levels of agreement with thirteen statements such as, "I never settle for second best." Subsequently, Nenkov et al. (2008) divided the statements into three groups. I combined the two statements that reflect high standards—"No matter what I do, I have the highest standards for myself," and "I never settle for second best"—asking people for their levels of agreement with the statement: "I always want to have the best. Second best is not good enough for me." Scores range from 1 to 10, where high scores indicate high propensity for maximization.

Regret

Schwartz et al. (2002) found that people with high propensity for maximization also tend to have high propensity for regret. As Nenkov et al. (2008) wrote: "the potential for regret is ever present because maximizers are always asking themselves if the outcome they chose is the best and are always experiencing lingering doubt that they could have made a better choice." I assess propensity for regret by the level of agreement with the statement: "Whenever I make a choice, I try to get information about how the other alternatives turned out and feel bad if another alternative has done better than the alternative I have chosen." Scores range from 1 to 10, where high scores indicate high propensity for regret.

Table 2: Correlations between Risk Tolerance, Propensities for Regret and Maximization, Social Trust, Life Satisfaction (in the overall sample of 4,690 people)*

	Risk Tolerance	Propensity for Regret	Propensity for Maximization	Social Trust	Life Satisfaction
Risk Tolerance		–0.01	–0.02	0.08	–0.04
		–(0.59)	(0.13)	(0.00)	(0.01)
Propensity for Regret			0.15	0.00	0.00
			(0.00)	(0.93)	(0.99)
Propensity for Maximization				–0.01	0.07
				(0.43)	(0.00)
Propensity for Trust					0.17
					(0.00)
Life Satisfaction					

* The top number in each cell is the correlation. The bottom number (in parentheses) is the corresponding *p*-value. Low *p*-value implies high statistical significance.

Social Trust

Social trust is the subjective probability that people attribute to the possibility of not being cheated. I measure the propensity for social trust by the level of agreement with a statement modified from the World Values Survey: "Generally speaking, would you agree that most people can be trusted, or that you always have to be careful in dealing with people other than your family?" The scale ranged from 1 to 10, where low numbers are closer to "Strongly disagree that most people can be trusted," and high numbers are closer to "Strongly agree that most people can be trusted."

Life Satisfaction

The rich are generally more satisfied with life than the poor, even if some who earn less than $40,000 a year are more satisfied with their lives than some who earn more than $400,000. Indeed, life satisfaction is high in countries where average incomes are high, even though the effect of increases of already high incomes on life satisfaction is small.

Consider the following question about life-satisfaction, similar to questions in the European Social Survey and the World Values Survey.

> *On the whole, how satisfied are you with your life? Please rate your level of satisfaction with your life by circling a number on a scale ranging from "Not at all satisfied" to "Very satisfied."*

Scores range from 1 to 10 where high scores indicate higher levels of life-satisfaction.

Risk, Regret, Maximization, Social Trust, and Life Satisfaction

Pan and Statman (2012) found in a sample of American men and women that high risk tolerance is associated with high propensities for social trust and maximization and low life satisfaction. They found no statistically significant association between risk tolerance and propensity for regret. People with high propensity for maximization tend to have high propensity for regret, and people with high propensity for social trust tend to enjoy high life satisfaction. I find, as presented in table 2, similar associations in my sample of people from twenty-three countries, except for a negative association between risk tolerance and maximization.

Barsky et al. found that women have lower risk tolerance than men, a finding that is consistent with many others. Barber and Odean (2001) and Watson and McNaughton (2007) found that women hold less-risky portfolios than men. Charness and Gneezy (2007) assembled data from ten sets of experiments conducted by different experimenters who did not set out to look for gender differences in risk tolerance, yet found that women are less risk tolerant than men. Beckmann and Menkhoff (2008) found that not even expertise eliminates gender differences in risk tolerance. Women are less risk tolerant than men even among professional mutual fund managers. I adjust for a bias that might be introduced by varying proportions of men and women across countries in my sample by measuring risk tolerance as the average of the risk tolerance of men and women in each country. I measure similarly the propensity for regret in each country.

I find, presented in table 1, that men have higher risk tolerance on average than women in each of the twenty-three countries. For example, Chinese men are willing to accept an average 18.04-percent decrease in their standard of living for an even chance at a 50-percent increase, whereas Chinese women are willing to accept only a 16.09-percent decrease for such chance. The average for Chinese men and women is 17.06 percent, implying a ratio of approximately 2.9 between gains and losses. American men are willing to accept an average 13.67-percent decrease in their standard of living for an even chance at a 50-percent increase, whereas American women are willing to accept only an 11.55-percent decrease for such chance. The average for American men and women is 12.61 percent, implying a ratio of approximately 4.0 between gains and losses. The average ratio of gains to losses across countries is approximately 3.8. Women have, on average, a higher propensity for regret than men, but the pattern of propensity for regret varies greatly from country to country. Men have a higher propensity for regret in almost half the twenty-three countries.

Table 3: Risk Tolerance, Safety Nets, and Aspirations*

Hypothesis	Dependent Variable	Individualism	Log of Income Per Capita	Public Social Spending	Number of Observations	Adjusted R^2
Hypothesis 1: Family and Friends Safety Net	Risk Tolerance	–0.03			21	0.08
		(0.12)				
Hypothesis 2: Public Safety Net	Risk Tolerance			–0.09	13	0.00
				(0.35)		
Hypothesis 3: Aspirations	Risk Tolerance		–0.69		23	0.08
			(0.10)			
Hypotheses 2 and 3: Family and Friends Safety Net and Aspirations	Risk Tolerance	–0.01	–0.72		21	0.11
		(0.72)	(0.20)			

* The top number in each cell is the regression coefficient. The bottom number (in parentheses) is the corresponding *p*-value. Low *p*-value implies high statistical significance.

Data on individualism are missing for Estonia and Tunisia. Data on public social spending are missing for Brazil, China, Estonia, India, Israel, Malaysia, Taiwan, Thailand, Tunisia, and Vietnam.

Tests of Hypotheses

Hypothesis 1: Family and friends safety net hypothesis. Risk tolerance is high in countries where family and friends provide strong safety nets.

Weber and Hsee (1998) hypothesized that people in collectivist countries such as China and Poland perceive risk as lower than people in individualistic countries such as the United States and Germany because people in collectivistic countries have strong safety nets of family and friends whereas safety nets of family and friends in individualistic countries are weak. Strong safety nets of family and friends foster perceptions of low risk.

The family and friends safety net hypothesis is supported in my sample of more than the four countries in Weber and Hsee (1998). A regression of risk tolerance on individualism, presented in table 3, shows a negative coefficient with a *p*-value of 0.12, implying that risk tolerance tends to be high in collectivistic countries. China, Taiwan, and Vietnam are collectivistic and they are also at the high end of risk tolerance (low *p*-value implies high statistical significance). The individualism score of China is 20 and the scores of Taiwan and Vietnam and are 17 and 20, respectively. Their levels of risk tolerance, measured by the average percentage decrease in standard of living they are willing to accept for an even chance at a 50-percent increase are 17.06, 15.43, and 16.34, respectively. The United States, United Kingdom, and France are individualistic and they are also at the low end of risk tolerance. The individualism score of the United States is 91 and the individualism scores of the United Kingdom and France are 89 and 71, respectively. Their levels of risk tolerance are 12.61, 11.64, and 11.93, respectively.

High collectivism scores are associated with high risk tolerance among individuals, yet Griffin et al. (2010) found that they are associated with low risk tolerance among corporate managers. The family safety net hypothesis might explain the difference. The safety net of family and friends available to individuals in collectivistic countries is not necessarily available to them in their capacities as corporate managers.

Hypothesis 2: Public safety net hypothesis. Risk tolerance is high in countries where public safety nets are strong.

Public safety nets might substitute for family and friends safety nets such that people are more risk tolerant in countries with high public social expenditures than in countries with low public social expenditures.

The data do not support the public safety net hypothesis. Indeed risk tolerance is lower in countries with high public spending than in countries with low public spending. A regression of risk tolerance on public spending, presented in table 3, shows a negative coefficient, even if its relatively high 0.35 *p*-value indicates low statistical significance.

Hypothesis 3: Aspirations hypothesis. Risk tolerance is high in countries where income per capita is low.

Weber and Hsee (1998) found that risk tolerance is higher in collectivist China and Poland than in individualistic United States and Germany and related the difference in risk tolerance to stronger safety nets of family and friends in collectivistic countries than in individualistic countries. Yet China and Poland are also different from the United States and Germany by their income per capita. The income per capita in China in 2005 was $4,103 and that in Poland was $13,571. Income per capita in the United States and Germany is much higher. Income per capita in the United States in 2005 was $42,629 and that of Germany was $30,266.

The aspirations hypothesis is supported in that risk tolerance is high in countries where income per capita is low. A regression of risk tolerance on the log of income per capita, presented in table 3, shows a negative coefficient with a *p*-value of 0.10. It is difficult, however, to untangle the aspirations hypothesis from the family and friends safety net hypothesis because individualistic countries tend to have high income per capita. The correlation between the log of income per capita and individualism is 0.62. Table 3 shows that the signs of coefficients of income per capita

Table 4: Risk Tolerance and Social Trust*

Hypothesis	Dependent Variable	Individualism	Social Trust	Log of Income Per Capita	Number of Observations	Adjusted R^2
Hypothesis 5: Social Trust	Risk Tolerance		0.05		22	0.16
			(0.04)			
Hypothesis 5: Social Trust	Risk Tolerance	–0.03	0.06		21	0.35
		(0.02)	(0.01)			
Hypothesis 5: Social Trust	Risk Tolerance		0.05	–0.97	22	0.39
			(0.01)	(0.01)		

* The top number in each cell is the regression coefficient. The bottom number (in parentheses) is the corresponding *p*-value. Low *p*-value implies high statistical significance. Data on social trust are missing for Tunisia. Data on individualism are missing for Estonia and Tunisia.

and individualism remain negative when they are placed simultaneously as independent variables in a regression where risk tolerance is the dependent variable. Yet the statistical significance of the coefficient of individualism is now very low, with a *p*-value of 0.72. The *p*-value of the coefficient of log income per capita is 0.20. Rieger et al. (2014) also found that risk tolerance is high in countries where income per capita is low in a sample of fifty-three countries.

Safety Nets and Aspirations

On the whole, the evidence is not consistent with the two safety net hypotheses. If safety nets that provide downside protection encourage people to take risks for upside potential we should find that people are more willing to take risk when family and friends safety nets are provided and also when public safety nets are provided. Yet we find that risk tolerance is low in countries where public safety nets are strong. This raises the possibility that cultures where people have low risk tolerance are also cultures where people clamor for risk-reducing public safety nets in the form of high public social spending. The evidence is more consistent with the aspirations hypothesis also because, as presented in table 2, risk tolerance is high when life satisfaction is low.

The distinction between the family and friends safety net hypothesis and the aspirations hypothesis matters because the first is associated with a cultural dimension that is likely long-lasting, whereas the second is associated with a possibly transitory factor; income per capita in a country can change substantially over periods as short as a few decades. For example, income per capita increased by 84 percent in China from 2005 to 2010, and by 40 percent in Poland. But income per capita increased by only 19 percent in Germany during that time and by 10 percent in the United States. It might well be that causality goes from levels of income per capita to levels of individualism rather than from levels of individualism to levels of income per capita.

Collectivism is a mutual insurance arrangement and low incomes push people toward it because even small economic shocks push low-income people below the poverty line, forcing them to rely on safety nets of family and friends. Moreover, banking services generally are underdeveloped in countries with low income per capita, making it difficult for people to withstand economic shocks with money borrowed from credit cards and other commercial lending sources. Increases in income per capita might, in time, move countries away from collectivism toward individualism. Sang-Hun (2013) reported that the prevalence of suicides among the elderly in collectivistic South Korea has increased markedly during the past few years, as income per capita soared, perhaps pushing culture toward individualism. Elderly parents who viewed their sacrifices for their children as the equivalent of a pension plan in a collectivistic country find themselves abandoned by their individualistic adult children.

Hypothesis 4: Social trust hypothesis. Risk tolerance is high in countries where social trust is high.

Levels of social trust in a country are measured by answers to a question in the World Values Survey: "Generally speaking, would you say that most people can be trusted or that you have to be very careful in dealing with people?" The 54.5 level of social trust in China is higher than the 35.8 level in the United States, and the 41.4 level of social trust in Vietnam is higher than the 29.8 level in the United Kingdom. The 66.5 level of social trust in Denmark is especially high, and so is the 66.3 level in Sweden. The 2.8 level of social trust in Brazil is especially low, and so is the 8.4 level in the Philippines.

High levels of social trust are associated with high levels of risk tolerance, consistent with the social trust hypothesis. Table 4 shows that the coefficient of social trust has a *p*-value of 0.04 in a regression of social trust on risk tolerance.

A regression of individualism and social trust on risk tolerance shows that high levels of risk tolerance are associated with low levels of individualism, consistent with the family and friends safety net hypothesis, and high levels of social trust. Table 4 shows that the *p*-value of the coefficient of individualism is 0.02, and the *p*-value of the coefficient of social trust is 0.01.

A regression of the log of income per capita and social trust on risk tolerance shows that high levels of risk tolerance are associated with low income per capita, consistent with the aspirations hypoth-

Table 5: Propensity for Regret, Individualism, and Intellectual Autonomy*

Hypothesis	Dependent Variable	Individualism	Intellectual Autonomy	Log of Income Per Capita	Number of Observations	Adjusted R^2
Hypothesis 5: Regret and Individualism	Propensity for Regret	0.02			21	0.44
		(0.00)				
Hypothesis 5: Regret and Individualism	Propensity for Regret	0.02		0.06	21	0.41
		(0.01)		(0.75)		
Hypothesis 6: Regret and Autonomy	Propensity for Regret		1.32		19	0.26
			(0.01)			
Hypothesis 6: Regret and Autonomy	Propensity for Regret		1.14	0.1	19	0.22
			(0.13)	(0.72)		

* The top number in each cell is the regression coefficient. The bottom number (in parentheses) is the corresponding *p*-value. Low *p*-value implies high statistical significance. Individualism data are missing for Estonia and Tunisia. Intellectual autonomy data are missing for Estonia, Tunisia, Poland, and Vietnam

esis, and high levels of social trust. The *p*-value of the coefficient of the log of income per capita is 0.01, and the *p*-value of the coefficient of social trust is also 0.01.

Hypothesis 5: Regret and individualism hypothesis. Propensity for regret is high in individualistic countries.

Personal responsibility concentr ates regret whereas group responsibility diffuses it. Responsibility is more diffused in collectivistic cultures, where choices tend to be family and friends choices, than in individualistic cultures where choices tend to be personal choices. This yields the hypothesis that the propensity for regret is low in countries where individualism is high.

Propensity for regret is measured by levels of agreement with the statement: "Whenever I make a choice, I try to get information about how the other alternatives turned out and feel bad if another alternative has done better than the alternative I have chosen." Propensity for regret is lower in collectivistic China and Vietnam than in the individualistic United States and United Kingdom. The average level of agreement with this statement is 4.58 in China and 4.60 in Vietnam whereas it is 5.98 in the United States and 5.89 in the United Kingdom. Propensity for regret is especially low in Malaysia, 3.97, and especially high in Italy, 7.09.

Propensity for regret is high in individualistic countries, consistent with the regret and individualism hypothesis. Table 5 shows that the coefficient of individualism in a regression of individualism on the propensity for regret is positive, with a *p*-value of 0.00. Support for the hypothesis is maintained in a regression of individualism and the log of income per capita on the propensity for regret. The coefficient of individualism is positive, with a *p*-value of 0.01. The coefficient is the log of income per capita is far from statistical significance, with a *p*-value of 0.75.

Hypothesis 6: Regret and autonomy hypothesis. Propensity for regret is high in countries where intellectual autonomy is high.

Cultures promoting intellectual autonomy encourage people to pursue their own intellectual directions and ideas independently. Independence magnifies personal responsibility and propensity for regret. This yields the regret and autonomy hypothesis.

Propensity for regret is high in countries where intellectual autonomy is high, consistent with the regret and autonomy hypothesis. Table 5 shows that the coefficient of intellectual autonomy in a regression of intellectual autonomy on the propensity for regret is positive, with a *p*-value of 0.01. Support for the hypothesis is maintained in a regression of intellectual autonomy and the log of income per capita on the propensity for regret. The coefficient of intellectual autonomy is positive, with a *p*-value of 0.13. The coefficient is log income per capita is far from statistical significance, with a *p*-value of 0.72.

Conclusion

"God created war so that Americans would learn geography," quipped Mark Twain. Many Americans lack geographic literacy, cultural literacy, and financial literacy. The same, however, is true for Chinese, German, Brazilians, and citizens of every other country. Cultural literacy is almost as important as financial literacy as advisors guide their clients.

Questions assessing financial literacy probe knowledge of financial facts, such as the compounding of interest, the effects of inflation, and the particulars of diversification. "Do you think that the following statement is true or false? Buying a single company stock usually provides a safer return than a stock mutual fund." Financially literate advisors and clients answer, correctly, that the statement is false. But do financially literate advisors and clients comprehend the answer and behave accordingly, diversifying their portfolios? The answer is far from obvious. One striking finding in surveys of financial literacy around the world is that men in every country are, on average, more financially literate than women, yet the financial literacy of men is scarcely reflected in their financial comprehension and behavior. Men, on average, are more overconfident than women. Men, on average, trade more frequently than women, subtracting from their returns (Barber and Odean 2001).

Advisors must go beyond cultural literacy, as they go beyond financial literacy, to reach cultural comprehension, empathy, and behavior. Cultural comprehension, empathy, and behavior are difficult to acquire and practice because we are rarely conscious of our culture. Americans are fond of using baseball metaphors—curveball, pinch hitter, home plate—not always aware that these metaphors are obscure to Germans and Argentinians unfamiliar with baseball but familiar with soccer (which they call football). American advisors must comprehend cultural imperatives to support parents, adult children, and siblings, stepping out of their cultural boundaries to comprehend their clients' cultures, empathize with them, and guide them to behavior that is responsible, wise, and conforming to culture.

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Endnotes

1. See http://www.geert-hofstede.com/dimensions.html.
2. Surveys were conducted in late 2007 and early 2008.

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