Subcultures in Household Financial Decision-Making:

An Exploratory Study of Risky Asset Ownership in the Netherlands

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Abstract:

Research into cultural influences on financial decision-making is increasingly delivering interesting and novel findings on how households make their financial decisions. This study utilises a large population-representative survey of households in the Netherlands to investigate whether *World Values Survey* cultural dimensions are related to intra-national differences in household financial decision-making. The main finding is that subcultures characterised as *Self-Expressive* are more than twice as likely to own risky assets as those on the opposite end of the cultural dimension (*Survivalists*). These findings are robust to checks for confounding factors such as gender and income.

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''statements about national culture or national character smell of superficiality and false generalization''

- Geert Hofstede (1983, p.77)

1. Introduction

The role of culture in financial decision-making has long been ignored in finance despite the prodigious evidence of the benefits of culture as an explanatory aid in understanding how decisions involving risk and uncertainty are made in other fields such as management (e.g. Ralston *et al.*, 1997) and marketing (e.g. Johar, Maheswaran and Peracchio, 2006). However over the last ten years finance researchers have started to make significant advances in understanding how culture might influence financial decisions. These prior findings suggest a vibrant potential for cultural finance, including explaining differences in household finances (Breuer and Salzmann, 2009) and stock market participation (Guiso, Sapienza and Zingales, 2008). This research adds to this new body of research by analysing how subcultural dimensions can help shed more light on household financial decision-making, specifically in the ownership of risky assets.

This exploratory study utilises a rich survey dataset; the *LISS Panel*, created and provided by *centERdata* in Tilburg University, Netherlands. The dataset consists of survey responses from a panel of approximately 8,000 Dutch participants who are representative of the Netherlands

population demographics. Participants in the panel are regularly interviewed on a variety of aspects of their lives, including economic and social situations, beliefs, and values. This dataset has not previously been applied to the study of cultural influences on financial decision-making.

We examine a number of dimensions of culture to investigate differences in financial decision-making. The cultural dimensions used are from the *World Values Survey* and measure traditional vs. secular beliefs and survival vs self-expression values. These two dimensions are argued by Inglehart and Welzel (2005) to account for 70 percent of the cross-national variance in world cultural values, and are also highly significant at predicting individual-level cultural variation. The specific application in this study is to look at subcultures within the Netherlands along these dimensions to investigate for differences in ownership of risky assets.

The main findings of this research are that the subcultural group identified as *self-expressive* display a greater tendency to invest in risky assets. These findings are robust to checks for confounding influences, such as gender and income. It is argued that the imaginative thinking, high trust, and interest in the news, which are all features of the self-expression cultural subgroup leads to a greater willingness to consider risky and uncertain financial decision-making choices. Relatedly, the cultural subgroup on the opposite end of the self-expression dimension, referred to as *survivalist*, is under-represented in ownership of risky assets.

This paper makes a number of important contributions to the extant literature on cultural finance. The key contribution is the approach of studying intra-national differences in culture and the subsequent findings of significant differences in financial decision-making between subcultures. This contributes to the limited existing research which investigates individual

aspects of culture such as religion within a single country (Renneboog and Spaenjers, 2011). The findings of this paper, and research on culture outside of the field of finance, suggest that an approach of just looking at cross-national differences of culture is going to be of limited benefit, and that subcultural differences within a country need to also be considered. This has implications for government policy and the marketing of financial products, with the suggestion that targeted policies are needed to address the needs and requirements of subcultures within a society.

Other contributions include the introduction of a new powerful survey dataset to assist in the understanding of financial decision-making and the use of the *World Values Survey* cultural dimensions, neither of which have been used previously in the study of culture and finance[1] and which offer strong potential to assist with the further development of this research area.

2. Culture and Finance

Research into the role of culture in finance is still very much at an embryonic stage. Reuter (2010) conducts a systematic literature review of research on culture and finance and is able to identify just 45 papers across 21 finance and related journals (and working papers) that are somewhat concerned with culture. Only about half of these papers provide a definition of culture, suggesting that culture is not their main focus. The vast majority of the empirical papers (37 of the 39) are concerned with cross-national comparisons i.e. using cultural explanations to help explain differences in financial behaviour across countries. Reuter identifies the research

[1] Some questions included in the World Values Survey have been previously used in cultural finance research, but not the actual cultural dimensions.

area as being very recent, with 85 percent of papers being from the last ten years, a strong upward momentum in publications as we approach the present day, and significant differences in the understanding of culture.

Breuer and Quinten (2009) suggest the name *Cultural Finance* for the area and envisages the eventual development of sets of finance theories such as 'Western European Finance' and 'Anglo-Saxon Finance', replacing the current homogenous universal finance theories. They also note that the field of 'Islamic Finance' is already well-established and that cultural influences are necessarily built into the development of this area (at least in principle, but see Khan (2010))

2.1. Measuring Culture

To measure cultural differences the most common approach adopted thus far has been to identify cultural dimensions along which nations show differences and then test whether financial decision-making across nations differs according to these cultural measures.

The common choices of cultural dimensions in general business research are between those of Geert Hofstede (2001), the GLOBE research program (House *et al*., 2004), Shalom Schwartz's *Schwartz Value Survey* (Schwartz, 1999) and Ronald Inglehart's *World Values Survey* (Inglehart and Welzel, 2005). Hofstede measures are the most commonly applied in cultural finance.

Hofstede and GLOBE are concerned with cross-national differences, and primarily collect culture measures from participants in business organisations (although not exclusively). Schwartz and Inglehart, in contrast, explicitly allow for individual-level cultural variation, and develop cultural measures from a broader population-representative sample across countries. Both Schwartz

and Inglehart also claim some similarities in their constructed cultural dimensions (Inglehart and Oyserman, 2004; Schwartz, 2004).

This paper uses Inglehart's *World Values Survey* (WVS) because of the broad sampling, having been extensively measured across representative samples in 97 countries comprising 88 percent of the world population, and because of the strength of the cultural dimensions in explaining individual-level cultural variation (see Section 2.2 discussion on subcultures). The choice also allows for potentially new findings related to cultural influences as these dimensions have not been previously applied before in research on household financial decision-making, although Guiso *et al.* (2006; 2008) and Georgarakos and Pasini (2010) use some parts of the WVS findings in their research on trust. By contrast, a number of studies have applied Schwartz cultural dimensions (Breuer, Quinten and Salzmann, 2011; Breuer and Salzmann, 2009; Griffin et al., 2010).

The WVS measures are summarised in two dimensions that are claimed to account for more than 70 of cross-national cultural differences (Inglehart, 1997; Inglehart and Welzel, 2005). These dimensions are traditional vs. secular-rational and survival vs. self-expression. In the traditional vs. secular dimension, the *Traditional* pole represents societies where religion still plays a strong role. These societies are also characterised by respect for authority, valuing obedience, and strong national pride. The *Secular-Rational* pole represents the opposite of these values. For the survival vs. self-expression dimension, the *Self-Expression* pole is characterised by tolerance of people from different backgrounds, community involvement, valuing imagination, and high trust in other people; whereas the *Survival* pole is characterised in opposition to these values. Section 3.1 discusses these dimensions in more technical detail.

The WVS has proved a productive resource for measuring cultural differences. For example, using a question asked in the WVS related to trust, Guiso *et al.* (2008) were able to link whether cultures had a tendency to trust other people to variations in country stock market participation rates. The values have also been used in a wide variety of other economic and political research, for example in explaining rising worldwide levels of happiness (Inglehart *et al.*, 2008), and to developing a greater understanding of the (implicit rather than explicit) political beliefs of Chinese citizens (Wang, 2005).

2.2. Subcultures

An important note related to culture is that a country will not just have one uniform culture; each country will consist of a range of subsets of cultures (subcultures). These intra-national cultural variations can be as important as cross-national variations (Tung, 2008). Chabowski et al. (2009) conduct a systematic literature review of *Journal of International Business Studies* articles on subculture in the business context and divide the identified research into three broad dimensional approaches of geographic, demographic, and social; with the social dimension linked to the WVS cultural dimensions and described as taking precedence over the geographic and demographic dimensions.

A popular branch of research on subcultures has focused on consumer behaviour, with, for example, Laroche *et al.* (2003) finding significant differences in buying attitudes between French and British Canadians in Canada. In other research Kozan (2002) was able to find subculture differences based on differing levels of Westernization amongst the Turkish population and link these to differences in approaches to conflict management and resolution.

In the cultural finance field successfully applied approaches to identifying subcultures include religion and ethnic background (Guiso *et al.*, 2006; Renneboog and Spaenjers, 2011). Similarly, a recent paper by Kumar, Page and Spalt (2011) use gambling preference differences between Catholics and Protestants to identify willingness to engage with risky stock market investments based on the dominant religion in the US county in which an investment is based.

The WVS, in contrast to the Hofstede measures, explicitly allow for a measure of subcultures. For example, Inglehart and Baker (2000) document not just cross-national variations along their cultural dimensions, but also individual-level variation along these dimensions. They state that their dimensions are approximately half as effective at explaining individual cultural variations compared to their explanatory power for cross-national variations. It would, of course, be expected that the explanatory power would be weaker at the individual level, but this nevertheless introduces the possibility of using these dimensions to identify subcultures within a country. For the similar cultural dimensions from the Schwartz Value Survey, a recent review by Schwartz (2011) notes some of the difficulties of interpreting the national level cultural dimensions at the individual level, but also suggests that "the future should see attention to cultural variation between groups within countries" (p. 317).

2.3. Cultural Studies in Finance

As noted in the introduction to Section 2, most empirical studies in cultural finance are cross-national in nature. A prominent example of this style of study is Stulz and Williamson (2003) which uses religion as a proxy for cultural differences and finds that the strength of creditor rights protection is partially related to the principal religion of a country. Griffin *et al.* (2010)

apply a more advanced method of measuring cultural differences, a mixture of Hofstede and Schwartz Value Survey findings, to find that companies from countries high in harmony ('accepting the world as it is') show less risk-taking, whereas companies from countries high in individualism ('high value placed on personal achievement') show more risk-taking behaviours (see also Chui, Lloyd and Kwok, 2002). Individualism has also been linked to the profitability of momentum trading on the stock market in a study of 41 worldwide stock markets (Chui, Titman and Wei, 2010).

Breuer and Salzmann (2009), in a cultural finance paper directly relevant to this research, use a mixture of *Schwartz Value Survey* culture measures and *Economist Intelligence Unit* country-level household finance data for 73 countries to investigate the role of culture in household finances. Their findings include that countries high on hierarchy scores (belief in authority and wealth) tend to have higher deposit savings, while countries high on autonomy (valuing creativity and an exciting life) tend to have higher levels of mutual funds, life insurance, pensions, and other long-term financial planning choices. Another similar piece of research is by Reeneboog and Spaenjers (2011), which investigates whether Dutch individual financial decision-making is related to religion. They make use of the *DNB* (De Nederlandsche Bank – Dutch Central Bank) *Household Survey* dataset which interviews 2,000 people every year who are representative of the Netherlands population demographics. Their findings include that religious people save more, and that this is particularly pronounced in Protestants and Evangelicals. After controlling for a number of confounding factors, they do not find a significant relationship between investment in risky assets (such as stocks) and religious background.

2.4. Household Finances and Risky Assets

Also of relevance to this paper are studies on household finances. Campbell (2006) comments that household finance is a neglected area of finance, with teaching and research in finance being "organized primarily around the traditional fields of asset pricing and corporate finance" (p. 1553). He contrasts the study of 'positive household finance' (studying how individuals actually manage their finances) with 'normative household finance' (the development of models of what households should do with their money). The most popular normative model of household finances over time is the life-cycle hypothesis with people saving during their working life so as to maintain their accustomed standard of living after retirement (Ando and Modigliani, 1963). Other factors that need to be considered include the investment horizon, changing risk exposure over time with generally the advice being to reduce risk as we grow older, and also the need to diversify assets to reduce unnecessary risks (Bodie, 2003).

Regarding risky asset ownership, Cocco, Gomes and Maenhout (2005) propose a normative household finances model where there should be at least some equity investment, providing labour income can be considered as a relatively risk-free asset. Given that the Netherlands has a low historic and current unemployment rate[2], labour income in that country could be considered to be relatively risk-free and thus equities should be included in the household portfolio according to this model. Other factors that are known to influence household's holdings of equities include; net income, presence of children, ethnic background, and educational attainment (Wang and Hanna, 2007). The bequest motive can also play a role in holdings of risky assets (Christelis, Jappelli and Padula, 2010), with a bequest motive being partially influenced by religion (Renneboog and Spaenjers, 2011). Regarding gender there is a conflict between normative theory and actual practice; while females should invest more than

[2] Seasonally-adjusted unemployment rate has been below 6 percent since 1997. Source: http://ec.europa.eu/eurostat

males in risky assets due to longer life expectancies, they tend to invest less than men because of higher risk aversion (Yao and Hanna, 2005).

2.5. Hypotheses

Given the novelty of the research approach; the expected findings and the validity of the hypotheses are made tentatively. The values questions in the *LISS Panel* household survey are not always the same as the values used to ascertain positioning on the WVS dimensions of traditional vs. secular and survival vs. self-expression. However, there are some significant similarities between questions in both surveys especially keyword-similarity and these keywords are applied to distinguish subcultures within the Netherlands and to investigate for differences in holdings of risky assets.

The traditional vs. secular-rational dimension is characterised by importance of obedience, deference to authority, family values, and religiosity on the traditional pole, with the opposite values on the secular pole. In developing the hypothesis for this dimension it is summarised that the traditional pole represents a subculture with an external locus of control, while the secular pole subculture is characterised by an internal locus of control. Internal locus of control is associated with more confidence in one's abilities and greater value placed on individual achievement (Maltby, Macaskill and Day, 2010). However the bequest motive which is stronger in religious households represented in the traditional group might weaken any differences. Thus, it is tentatively hypothesised that the secular pole subculture will display a greater tendency to hold risky assets.

Hypothesis 1: *The subculture group identified as high on secular-rational values will hold more risky assets compared to the subculture group which is high on traditional values.*

In the second WVS dimension of survival vs. self-expression it is argued that subcultures high on self-expression will have a greater tendency to hold advanced financial products such as risky assets. High self-expression values include trusting others, valuing diversity, interest in society, and imaginative thinking. These values are argued to lead to learning about more advanced financial products, trusting the providers of those financial products, and thus being willing to allocate a portion of household financial resources to these products.

Hypothesis 2: *The subculture group identified as high on self-expression values will hold more risky assets compared to the subculture group which is high on survival values.*

3. LISS Panel Data and Empirical Approach

This study utilises a comprehensive national survey dataset; the *LISS Panel*, created and provided by *centERdata* in Tilburg University, Netherlands. This dataset consists of survey responses from a panel of approximately 8,000 Dutch residents who are representative of the Netherlands' population demographics. Participants in the panel are interviewed every month on a variety of aspects of their lives, including economic and social situations, beliefs, and values. To ensure the dataset is population representative, participants are paid for their

involvement, are provided with a computer and internet access if they do not already have such access, and initial recruitment consisted of a letter of invitation followed, if necessary, by a telephone call or face-to-face contact. Technical details on the dataset's construction are provided in Scherpenzeel (2011).

The LISS Panel dataset has been utilised in research into a variety of economic and social issues, such as labour supply (Cherchye, De Rock and Vermeulen, 2010) and drug policy (van der Sar *et al.*, 2011). However, the dataset has not previously been applied in research on household financial decision-making. The comprehensiveness and the novelty thus offer the opportunity for fresh perspective on cultural issues in financial decision-making.

There have been three main waves of the LISS Panel survey in 2008, 2009, 2010. This research uses the 2009 wave of the survey as it was the most recent wave with complete data at commencement of the research. This wave had approximately[3] 6,000 respondents from the 8,000 targeted. Not all of these participants make the financial decisions in their households, so only participants who answer positively to the question "Do you take care of financial matters in the household?", of which there are 2,988 cases, are included in the dataset for the purposes of testing. Further filtering for missing answers to core questions reduces the dataset to 2,376 participants.

An examination of the background data of the selected participants shows a broad dispersion across a number of measures, including; gender, age, income, and education (see Table 1). The testing approach for sub-cultural influences detailed in Section 3.2 controls for gender and

[3] The overall questionnaire is divided into 11 core sub-questionnaires on specific areas of interest, and response rate varies across the sub-questionnaires.

income differences. It can be seen from Table 1 that gender is reasonably evenly divided, and *Eurostat*[4] data suggests that the monthly net income figures are also reasonably representative of the population incomes, although somewhat skewed towards lower income participants. The most recent *Eurostat* data from 2007 shows average gross income of €42,000 and income taxes of 33.1%, meaning an average monthly net income of €2,341. Additional medical insurance and state pension contributions would reduce the actual average net income figure further.

<<<<< INSERT TABLE 1 ABOUT HERE >>>>>

3.1. Constructing the Subculture Dimensions

The approach to constructing the dimensions along which subcultures can be identified is to analyse values questions in the *LISS Panel* for similarities to the WVS keywords related to each dimension.

The WVS dataset has been conducted since 1981, and the four survey waves (with the most recent ending in 2007) have involved 257,000 cultural values surveys being administered in 97 countries representing 88 percent of the world's population. A key finding of subsequent analysis of the responses is that approximately 70 percent of cross-national cultural variation can be explained by just two dimensions (Inglehart, 1997); a traditional – secular-rational dimension, and a survival – self-expression dimension. While the variations are primarily aimed at understanding cross-national cultural variation, Inglehart also shows that these cultural variations are significant at an individual level.

[4] http://ec.europa.eu/eurostat

The WVS construction of the two dimensions is based on responses to 22 questions, however Inglehart and Baker (2000) reduce the number of survey questions necessary to approximately construct each of the dimensions to five. The reduced 10 questions used by Inglehart and Baker (2000) are detailed in Table 2.

<<<<< INSERT TABLE 2 ABOUT HERE >>>>>

As can be seen from Table 2, the traditional – secular-rational dimension is defined on the traditional side by emphasis on religiosity (belief in God, belief in instilling religious values in children, and against abortion[5]), respect for authority, obedience, and national pride. The secular-rational side places less emphasis on these attitudes i.e. lower levels of religiosity, less automatic respect for authority and national pride, and less emphasis on teaching the importance of obedience.

The survival – self-expression dimension is defined on the survival side by emphasis on economic survival over self-expression and quality of life, being generally unhappy, low trust, intolerance towards homosexuality, and unwillingness to sign protest petitions. The self-expression side emphasises the opposite to these attitudes.

In constructing the equivalent of these dimensions using LISS Panel data the main obstacle was a lack of overlapping questions. There were also some questions that did overlap, but which had very low response rates. For this reason the questions used to construct the dimensions were based on keywords instead of actual matching questions. The use of keywords instead of

[5] While abortion attitudes are not exclusively tied to religiosity, religious beliefs are strongly correlated with abortion attitudes (e.g. Jelen and Wilcox, 2003)

overlapping questions necessarily weakens this study as it is possible the dimensions constructed are not proper replications of the WVS dimensions, this being the reason why the research has been termed exploratory in nature.

Tables 3 and 4 contain the questions used to construct the two dimensions, while Table 5 contains frequency data for the questions used in both variables' construction. Both of the dimensions are constructed based on four factors. For the survival – self-expression dimension a variable called *Self-Expression* is constructed based on trust levels, tolerance towards people from a different ethnic background, interest in the news, and value attached to thinking abstractly. The *trust* variable is based on whether respondents indicate that they trust other people. *Tolerance* towards people from a different ethnic background was chosen over attitudes to homosexuality because while both deal with intolerance, attitudes towards homosexuality can linked to intrinsic religious belief (e.g. Herek, 1987) which is a factor in the traditional – secular-rational dimension. *Interest in the news* was chosen over whether the participant had ever signed a petition partially because of data availability, and partially because interest in the news signifies political and societal interest and activism. For example Norris (1996) finds that the amount of time people spend watching television news and reading newspapers is significantly positively related to their likelihood of voting, and being involved in protests and community campaigns. The final factor used in construction of the *Self-Expression* variable is the value attached to *thinking abstractly*, as there is greater value attached to imagination at the self-expression pole of the dimension.

<<<<< INSERT TABLE 3 ABOUT HERE >>>>>

<<<<< INSERT TABLE 4 ABOUT HERE >>>>>

<<<<< INSERT TABLE 5 ABOUT HERE >>>>>

For the traditional – secular-rational dimension a variable called *Secular-Rational* is constructed based on religiosity, importance attached to obedience, respect for authority, and nationalism. Level of *religiosity* is measured based on importance attached to salvation and support expressed for a religious political party (SGP; Christian Reformed Party). Importance attached to salvation is chosen over extrinsic religious practices such as church attendance, as these extrinsic practices are influenced by social norms in addition to religious belief (e.g. Herek, 1987). *Respect for authority* is measured by whether respondents say they have ever wanted to rebel against authority, whether they support an authoritarian political party (PVV; Partij voor de Vrijheid, a political party that advocates policies such as administrative detention), and whether they choose maintaining law and order as a first choice in a political priorities list. *Obedience* is measured by the importance the respondent attaches to obedience. The final factor used is *national pride* as measured by support for a political party that specifically advocates Dutch national pride (Trots op Nederland[6]).

3.2. Empirical Approach

The testing approach involves examining whether subculture membership is related to ownership of risky assets, with ownership of risky assets being measured by the response to the survey question:

[6] This is not an ideal measure of national pride as *Trots op Nederland*, a party with minimal current political support, although which was popular at the time the survey was being conducted, has been accused of nationalism in some of the Dutch media (e.g. Lecher, 2008, Radio Netherlands, http://bit.ly/iHDqQu) . Nationalism and national pride, despite having many of the same antecedents, should not be considered the same (e.g. Hjerm, 1998). The reason for the use of *Trots op Nederland* support as a measure is due to some of the commonalities between national pride and nationalism, the fact that the party itself claims to be purely about national pride, and the lack of available alternative measures.

> On 31 December 2007, did you possess any investments? (growth funds, share funds, bonds, debentures, stocks, options, warrants, and so on).

For each of the constructed dimension variables participants are divided into three groups as detailed in Tables 3 and 5, with a comparison neutral group and a group at either end of the dimension. These groups at either end of the dimension represent the subcultures to be tested. Thus there is a comparison between the survivalist group and the self-expressive group, and a comparison between the traditionalist group and the secular-rational group. Further testing looks at cross-dimension subculture membership where groups are created based on their placement on both dimensions. The four cross-dimensional groups are shown in Figure 1 and are (1) Traditionalist-Survivalist, (2) Secular-Survivalist, (3) Traditionalist-Self Expressive, and (4) Secular-Self Expressive.

<<<<< INSERT FIGURE 1 ABOUT HERE >>>>>

A binary logistic regression is used as the testing method with controls included for the potential confounding influence of gender and income. While the control for income is clear, it is also suspected that females will be less likely to hold risky assets due to lower risk attitudes in financial decision-making (Barber and Odean, 2001; Beckmann and Menkhoff, 2008). It would be useful to additionally control for education and age, but pre-tests indicated that including either education or age as controls in addition to income led to poor model Goodness of Fit (Hosmer-Lemeshow measure).

4. Findings

Overall the tests show a role for subcultures in helping us to understand holdings of risky assets. This is primarily the case with the *Self-Expression* variable, but there also appears to be a role for cross-dimension subcultures in developing understanding of household financial decision-making.

The tests reported in Table 6 show a highly significant difference in holdings of risky assets across the Survivalist – Self-Expression dimension. From an initial inspection of the data using cross-tabulations it can be seen that holdings of risky assets rise from 15.2 percent in the survivalist group to more than double (33.5 percent) in the self-expression group. In the logistic regression tests, even after controlling for gender and income categories, the differences are shown to be significant.

Turning first to the control variables, it is shown that net income categories, as expected, are strongly predictive of risky asset ownership, with the highest income group over four times more likely to own risky assets compared to the lowest income group. Gender is also a significant control at $p<0.05$, with an Odds Ratio of 0.74. As females are coded as 1 in the dataset and males as 0, this indicates that females are less likely than males to hold risky assets (even at the 95 percent upper bound of the Odds Ratio it is less than 1 at 0.94).

For the Self-Expression variable a contrast is made with the neutral group for both the survivalist and self-expressive groups, and the result show that survivalists are less likely than the neutral group to hold risky assets ($p<0.05$), while self-expressives are significantly more likely to hold risky assets ($p<0.01$). The Odds Ratio suggests that self-expressives are twice as likely as

survivalists to hold risky assets even controlling for income and gender. The findings for the self-expressive group are more pronounced than those for the survivalist group, both in terms of significance and in terms of the 95 percent bounds of the Odds Ratio.

<<<<< INSERT TABLE 6 ABOUT HERE >>>>>

<<<<< INSERT TABLE 7 ABOUT HERE >>>>>

<<<<< INSERT TABLE 8 ABOUT HERE >>>>>

An interesting note is that Self-Expression is more significant than the more widely studied role of gender, with Self-Expression having a Wald chi-square of more than three times that of gender.

In unreported tests, it is found that this variation across the dimension is not driven purely by trust. High trust is indeed an indicator of willingness to hold risky assets, as, for example, Guiso, Sapienza, and Zingales (2008) and Georgarakos and Pasini (2010) find, but the effect is smaller than that of the Self-Expression variable with an overall Wald chi-square of 8.76 ($p < 0.05$) for the Trust variable compared to a Wald of 21.36 ($p < 0.01$) for the Self-Expression variable.

The tests of the *Secular* variable, reported in Table 7, do not show any significant variation in risky asset ownership along the dimension, either in the cross-tabulation inspection or the logistic regression tests. However, when the cross-dimensions, which include interactions between the two dimensions, are tested, it appears that the traditional – secular-rational dimension can help develop a better understanding of the survival – self-expression dimension's relationship with risky asset ownership. These cross-dimension findings are reported in Table 8, and suggest that the risky asset ownership among subcultures is particularly driven by the

position of the survey respondent on the self-expression side of the survival – self-expression dimension. However the results also show that the Traditional-Self Expression cross-dimension is the most significant, more so than those respondents positioned in the Secular-Self Expression cross-dimension. This could perhaps be driven by the bequest motive inherent in the religiosity of the traditionalist (Renneboog and Spaenjers, 2011) combined with the high trust of the self-expressive.

In further tests, reported in Tables 10 and 11, we also test whether holdings of savings or willingness to borrow money are related to the Self-Expression and Secular-Rational measures. While this is not a primary focus of this research, it offers an opportunity to investigate whether the subculture findings can be applied to develop understanding in other areas of household financial decision-making.

<<<<< INSERT TABLE 9 ABOUT HERE >>>>>

<<<<< INSERT TABLE 10 ABOUT HERE >>>>>

The savings question asked in the survey is not ideal for the purpose of testing as it asks whether the respondent held any "current accounts, savings accounts, term deposit accounts, savings bonds or savings certificates". Unsurprisingly, 87 percent of respondents held at least a current account. The findings in Table 10 suggest that neither the subculture dimensions, nor the cross-dimension sub-groups, are particularly useful in determining savings habits. Although it should be noted that while the pseudo-R^2 (Cox and Snell, Nagelkerke) are very low, these are not interpretable in the same manner as OLS R^2 (Menard, 2002), and for all models the Hosmer-Lemeshow goodness-of-fit statistics are satisfactory. The only significant finding is that traditionalists are significantly less likely (at $p < 0.05$) to hold even a current account compared

to secular-rationalists. This finding is not worthy of a policy recommendation at this stage, given the limited overall significance, but perhaps those respondents in the traditionalist subculture are faced with some financial exclusion issues. Given the wide range of reasons for financial exclusion (e.g. see Devlin, 2005), a more detailed investigation is outside the scope of this paper.

Turning to the investigation of a link between subcultures and willingness to borrow money (Table 11), there appears to be more of a relationship than that observed for savings. Only 12 percent of respondents answered in the affirmative when questioned about whether they had "one or more personal loans, revolving credit arrangement(s), or financing credit(s) based on a hire-purchase or instalment plan". However the decision to borrow money should perhaps be influenced by some of the factors that make up the subculture variables as the borrowing decision involves assessing the risk attached to repayment. All of the subculture variables show some relationship with the borrowing decision, with the effect most pronounced for Self-Expression. The most significant finding is somewhat surprising though as it shows that survivalists, when contrasted with the neutral group, are significantly more likely to have borrowings, with 15.4 percent of survivalists having borrowings compared to 9.8 percent of neutrals and 11.2 percent of self-expressives. It is not clear why this would be the case, and the existing literature on cultural factors impacting on the decision to borrow does not offer any guidance.

Thus, the investigations of savings and borrowing habits are, at best, mixed. However the main focus of the research on holdings of risky assets delivered interesting findings. It is worth concluding by returning to the original hypotheses proposed in Section 2.5:

Hypothesis 1: The subculture group identified as high on secular-rational values will hold more risky assets compared to the subculture group which is high on traditional values.

Hypothesis 2: The subculture group identified as high on self-expression values will hold more risky assets compared to the subculture group which is high on survival values.

Hypothesis 1 did not find support, although this hypothesis was described as tentative due to the potential conflict between the internal locus of control of those high on secular-rational values, and the bequest motive of those in the traditional subculture. It is possible that a better specification, without the limits imposed by the survey questions, would lead to a more definitive understanding of whether this dimension plays a role of financial decision-making. *Hypothesis 2* found substantial support. The survivalist subculture is less likely than average to hold risky assets and the self-expressive subculture is more likely than average to hold risky assets. The policy implications of this finding are discussed in the concluding section of the paper.

5. Policy Recommendations and Conclusions

From the findings in this exploratory study it can be stated that the WVS cultural dimension of survival vs. self-expression is an important indicator of holdings of risky assets. The cultural dimension of traditional vs. secular-rational did not offer any explanatory power by itself, but

when used to construct cross-dimensional variables, it helped develop further understanding of the self-expressive subgroup.

The self-expressive subcultural group is twice as likely as the survival group to hold risky assets, and when compared to the neutral group; self-expressives were more likely, and survivalists less likely to hold risky assets. The relationship is also found to be more significant than that of the more widely studied influence of gender on financial decision-making.

Given that this study is exploratory in nature, further specifications and testing are needed before firm conclusions can be made, but the ability to identify groups of people within society who are under-investing for their retirement and other future financial demands would be very helpful for both policy makers and developers of financial products in terms of better understanding and better targeting. The overall implication is that not all people in a country make financial decisions in the same way, and simple distinctions like gender, age, education, and income are insufficient approaches for targeting subgroups of the population, subcultural understanding must also play a role.

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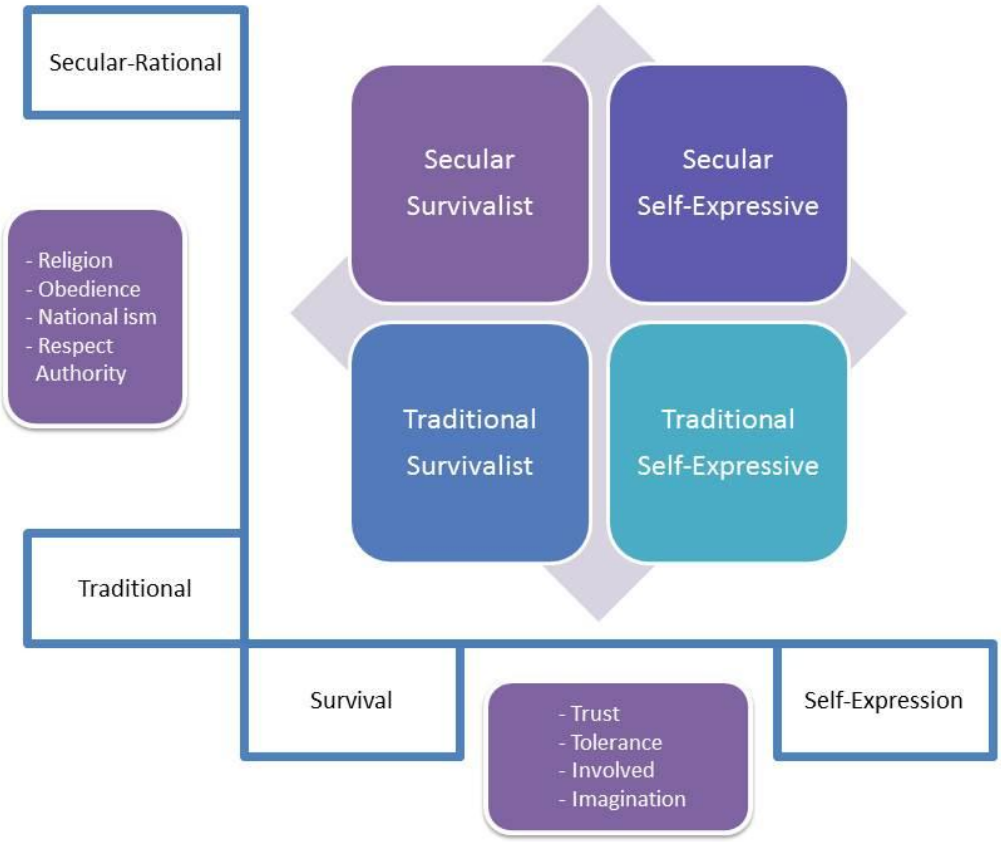
FIGURE 1: WORLD VALUES SURVEY SUBCULTURES



Adapted from Inglehart and Welzel (2005). The two dimensions are 'Traditional – Secular-Rational', and 'Survival – Self-Expression'. Keywords that identify differences along each dimension are highlighted in the Figure beside the relevant dimension. In the traditional – secular-rational dimension, traditional is identified by strong belief in religion, valuing obedience, nationalism, and respect for authority. The secular-rational side of the dimension is identified as being low in the value attached to these beliefs. For the survival – self-expression dimension, self-expression is identified by strong trust in other people, tolerance for people of different backgrounds, valuing imagination, and being actively involved in society. The survival side of the dimension is identified as being low in the value attached to these beliefs. The two dimensions are investigated individually, and also the interaction between the two dimensions, with four interaction subcultures also investigated as detailed in the Figure. The specific survey questions applied in this study to place respondents along the dimensions and within the interaction subcultures are detailed in Table 3 and Table 4.

TABLE 1: LISS PANEL DATASET DESCRIPTIVE STATISTICS

Gender		Education		
Male	*Female*	*Secondary or lower*	*Junior College*	*College or University*
1,095 (47.4%)	1,213 (52.6%)	803 (35.4%)	531 (23.4%)	937 (41.3%)
Age				
Under 35	*35-44*	*45-54*	*55-64*	*65 and over*
309 (13.4%)	460 (19.9%)	539 (23.4%)	540 (23.4%)	460 (19.9%)
Net Income				
EUR 1,500 or less	*EUR 1,501 to EUR 2,500*	*More than EUR 2,500*		
965 (46.8%)	806 (39.1%)	291 (14.1%)		

TABLE 2: WORLD VALUES SURVEY QUESTIONS APPLIED BY INGLEHART AND BAKER (2000) IN CONSTRUCTION OF CULTURAL DIMENSIONS

Traditional vs. Secular Rational
TRADITIONAL VALUES EMPHASISE THE FOLLOWING: - God is very important in respondent's life - It is more important for a child to learn obedience and religious faith than independence and determination - Abortion is never justifiable - Respondent has strong sense of national pride - Respondent favours more respect for authority (SECULAR-RATIONAL VALUES EMPHASISE THE OPPOSITE)
Survival vs. Self-Expression Values
SURVIVAL VALUES EMPHASISE THE FOLLOWING: - Respondent gives priority to economic and physical security over self-expression and quality-of-life - Respondent describes self as not very happy - Respondent has not signed and would not sign a petition - Homosexuality is never justifiable - You have to be very careful about trusting people (SELF-EXPRESSION VALUES EMPHASISE THE OPPOSITE)

Adapted from Table 1 in Inglehart and Baker (2000)

TABLE 3: SURVIVAL – SELF-EXPRESSION SUBCULTURE DIMENSION: LISS PANEL SURVEY QUESTIONS APPLIED INCLUDING RECODING TO FINAL VARIABLE

TRUST	Question: *Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?* Original scale: 0-10. 0 = 'Can't be too careful'; 10 = 'Most people can be trusted' Reduced scale ranges from 0 to 2. Original 0-3 = 0 'Low Trust'; Original 4-6 = 1 'Medium Trust'; Original 7-10 = 2 'High Trust'
TOLERANCE	Question: *There are too many people of foreign origin or descent in the Netherlands.* Original scale: 0-5. 1 = 'Fully disagree'; 5 = 'Fully agree' Reduced scale ranges from 0 to 2. Original 4-5 = 0 'Low Tolerance'; Original 3 = 1 'Medium Tolerance'; Original 1-2 = 2 'High Tolerance'
INVOLVED	Question: *Are you very interested in the news, fairly interested, or not interested?* Original scale: 1-3. 1 = 'Very interested'; 3 = 'Not interested' Reduced scale has value 0 or 1. Original 2-3 = 0 'Fairly or Not Interested in News'; Original 1 = 1 'Very Interested in News'
IMAGINATION	Question: *The notion of thinking abstractly is appealing to me.* Original scale: 1-7. 1 = 'Strongly disagree'; 7 = 'Strongly agree' Reduced scale ranges from 0 to 2. Original 1-3 = 0 'Dislike Abstract Thinking'; Original 4 = 1 'Medium'; Original 5-7 = 2 'Like Abstract Thinking'

SELF-EXPRESSION	Overall variable computed as TRUST + TOLERANCE + INVOLVED + IMAGINATION Initial scale varies between 0 and 7, with 0 indicating someone who is highly survivalist and 7 indicating highly self-expressive Recoded to three groups: 0-2 recoded to 'Survivalist'; 3-4 to 'Neutral'; 5-7 to 'Self-Expressive'

TABLE 4: TRADITIONAL – SECULAR-RATIONAL SUBCULTURE DIMENSION: LISS PANEL SURVEY QUESTIONS APPLIED INCLUDING RECODING TO FINAL VARIABLE

OBEDIENCE	Question: *Which values act as a guiding principle in your life and which values are less important to you? - Obedient* Original scale: 1-7. 1 = 'Extremely unimportant'; 7 = 'Extremely important' Reduced scale ranges from 0 to 2. Original 6-7 = 0 'High Importance Obedience'; Original 3-5 = 1 'Medium Importance Obedience'; Original 1-2 = 2 'Low Importance Obedience'
NATIONAL PRIDE	Question: *What do you think of Trots op Nederland (groep Verdonk)? (Verdonk's Dutch pride party)* Original scale: 0-10. 0 = 'Very unsympathetic'; 10 = 'Very sympathetic' Reduced scale ranges from 0 to 2. Original 6-10 = 0 'High Support'; Original 2-5 = 1 'Medium Support'; Original 1-2 = 2 'Low Support'
RELIGIOUS	RELIGIOUS = SALVATION + POLITICALLY RELIGIOUS 1. SALVATION: Question: *Which values act as a guiding principle in your life and which values are less important to you? - Salvation* Original scale: 1-7. 1 = 'Extremely unimportant'; 7 = 'Extremely important' Reduced scale ranges from 0 to 2. Original 6-7 = 0 'High Importance Salvation'; Original 3-5 = 1 'Medium Importance Salvation '; Original 1-2 = 2 'Low Importance Salvation' 2. POLITICALLY RELIGIOUS: Question: *What do you think of the SGP? (Christian Reformed party)* Original scale: 0-10. 0 = 'Very unsympathetic'; 10 = 'Very sympathetic' Reduced scale ranges from 0 to 2. Original 6-10 = 0 'High Support'; Original 2-5 = 1 'Medium Support'; Original 1-2 = 2 'High Support' The computed RELIGIOUS variable of SALVATION + POLITICALLY RELIGIOUS varies between 0 (high religiosity) and 4 (low religiosity). This is recoded to vary between 0 and 2, with: 0='High Religiosity'; 1='Medium Religiosity'; 2='Low Religiosity'.
RESPECT AUTHORITY	RESPECT AUTHORITY = LAW AND ORDER + REBEL AGAINST AUTHORITY + POLITICALLY AUTHORITARIAN 1. LAW AND ORDER: Question: *In politics, it is not always possible to achieve all one might wish to achieve. Below you'll find a list of things that people might wish to achieve. If you had to choose, what goal would be your first choice?* *1 - maintaining law and order in the country* *2 - increasing citizens' political say* *3 - preventing price increases* *4 - protecting the freedom of speech*

	Recoded as 1=0 'Maintain Law and Order'; 2-4=1 'Other Priority' 2. REBEL AGAINST AUTHORITY: Question: *There have been times when I felt like rebelling against people in authority even though I knew they were right. [1=False, 2=True]* Recoded as 1=0 'Not Wanted to Rebel Against Authority'; 2=1 'Wanted to Rebel Against Authority' 3. POLITICALLY AUTHORITARIAN: Question: *What do you think of the Partij voor de Vrijheid (Groep Wilders)? (Wilders' freedom party)* Original scale: 0-10. 0 = 'Very unsympathetic'; 10 = 'Very sympathetic' Reduced scale ranges from 0 to 2. Original 6-10 = 0 'High Political Authoritarianism'; Original 2-5 = 1 'Neutral on Authoritarianism'; Original 1-2 = 2 'Low Political Authoritarianism' The computed RESPECT AUTHORITY variable of LAW AND ORDER + REBEL AGAINST AUTHORITY + POLITICALLY AUTHORITARIAN varies between 0 (high respect for authority) and 5 (low respect for authority). This is recoded to vary between 0 and 2, with: 0='High Authority Respect'; 1='Medium Authority Respect'; 2='Low Authority Respect'.

SECULAR-RATIONAL	Overall variable computed as OBEDIENCE + NATIONALISM + RELIGIOUS + RESPECT AUTHORITY Initial scale varies between 0 and 8, with 0 indicating someone who is highly traditionalist and 8 indicating highly secular-rational Recoded to three groups: 0-2 recoded to 'Traditionalist'; 3-5 to 'Neutral'; 6-8 to 'Secular-Rational'

TABLE 5: SUBCULTURE DIMENSION VARIABLES: FREQUENCIES

Self-Expression Variable Construction: Frequency (Valid Percentages)			
TRUST	*Low Trust*	*Medium*	*High Trust*
	315 (13.4%)	703 (30.0%)	1326 (56.6%)
TOLERANCE	*Low Tolerance*	*Medium*	*High Tolerance*
	1003 (42.4%)	825 (34.9%)	538 (22.7%)
INVOLVED	*Not / Fairly Interested*		*Very Interested*
	1525 (64.3%)		845 (35.7%)
IMAGINATION	*Dislike Abstract*	*Medium*	*Like Abstract*
	889 (37.5%)	751 (31.7%)	730 (30.8%)
SELF-EXPRESSION	*Survivalist*	*Neutral*	*Self-Expressive*
	677 (29.1%)	985 (42.3%)	665 (28.6%)

All variables as defined in Table 3. Only survey participants who indicated that they managed their household finances are included.

Secular-Rational Variable Construction: Frequency (Valid Percentages)			
OBEDIENCE	*High Obedience*	*Medium*	*Low Obedience*
	843 (35.6%)	1371 (57.8%)	156 (6.6%)
NATIONAL PRIDE	*High Support*	*Medium*	*Low Support*
	341 (16.1%)	997 (47.1%)	777 (36.7%)
RELIGIOUS	*High Religiosity*	*Medium*	*Low Religiosity*
	610 (31.2%)	820 (42.0%)	524 (26.8%)
RESPECT AUTHORITY	*High Respect*	*Medium*	*Low Respect*
	612 (28.4%)	722 (33.5%)	819 (38.0%)
SECULAR-RATIONAL	*Traditionalist*	*Neutral*	*Secular-Rational*
	434 (22.8%)	997 (52.3%)	474 (24.9%)

All variables as defined in Table 4. Only survey participants who indicated that they managed their household finances are included.

TABLE 6: SURVIVAL – SELF-EXPRESSION SUBCULTURE DIMENSION AND RISKY ASSET OWNERSHIP

1. CROSS-TABULATIONS

Hold Risky Assets?	Survivalist	Neutral	Self-Expressive	Average
No	84.8%	78.0%	66.5%	76.7%
Yes	15.2%	22.0%	33.5%	23.3%
Respondents	677	985	665	2,327

2. LOGISTIC REGRESSION OF INFLUENCE ON HOLDING OF RISKY ASSETS

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Self-Expression (contrast 'Neutral')		21.36**			
Survivalist	-0.301 (0.15)	4.16 *	0.554	0.740	0.988
Self-Expressive	0.385 (0.13)	9.57**	1.152	1.470	1.877
Net Income (contrast '€1,500 or less')		75.60**			
Net Income - €1,501 to €2,500	0.619 (0.14)	20.78**	1.423	1.858	2.424
Net Income - More than €2,500	1.476 (0.17)	75.41**	3.135	4.375	6.104
Gender	-0.305 (0.13)	5.96 *	0.577	0.737	0.942
Constant	-0.886 (0.08)	131.98**		0.412	

Note: n = 2,059. R^2 = 0.09 (Cox & Snell), 0.13 (Nagelkerke). Model χ^2 = 182.49, $\rho < 0.01$.

** = $\rho < 0.01$ * = $p < 0.05$

Self-expression variable as defined in Table 3. For Gender variable; Male=0, Female=1. Both self-expression and net income are tested with reference to a base. For self-expression the base is the Neutral group on the survival – self-expression dimension.

TABLE 7: TRADITIONAL – SECULAR-RATIONAL SUBCULTURE DIMENSION AND RISKY ASSET OWNERSHIP

1. CROSS-TABULATIONS

Hold Risky Assets?	Traditionalist	Neutral	Secular-Rational	Average
No	75.6%	76.1%	71.7%	74.9%
Yes	24.4%	23.9%	28.3%	25.1%
Respondents	434	997	474	1,905

2. LOGISTIC REGRESSION OF INFLUENCE ON HOLDING OF RISKY ASSETS

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Secular-Rational (contrast 'Neutral')		2.79			
Traditionalist	0.069 (0.15)	0.22	0.800	1.071	1.435
Secular-Rational	0.235 (0.14)	2.78	0.960	1.265	1.666
Net Income (contrast '€1,500 or less')		87.29**			
Net Income - €1,501 to €2,500	0.694 (0.15)	22.12**	1.499	2.001	2.671
Net Income - More than €2,500	1.643 (0.18)	86.37**	3.656	5.170	7.310
Gender	-0.391 (0.14)	8.30**	0.519	0.677	0.883
Constant	-0.752 (0.08)	87.22**		0.472	

Note: n = 1,675. R^2 = 0.08 (Cox & Snell), 0.12 (Nagelkerke). Model χ^2 = 147.83, $\rho < 0.01$.

** = $\rho < 0.01$ * = $p < 0.05$

Secular-rational variable as defined in Table 4. For Gender variable; Male=0, Female=1. Both secular-rational and net income variables are tested with reference to a base. For secular-rational the base is the Neutral group on the traditional – secular-rational dimension.

TABLE 8: CROSS-DIMENSIONAL SUBCULTURES: LOGISTIC REGRESSION OF INFLUENCE ON HOLDING OF RISKY ASSETS

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Cross-Dimension (contrast 'Traditional-Survivalist')		11.02 *			
Secular-Survivalist	0.213 (0.24)	0.82	0.779	1.238	1.966
Traditional-Self Expressive	0.572 (0.19)	9.46**	1.230	1.771	2.550
Secular-Self Expressive	0.476 (0.20)	5.74 *	1.091	1.609	2.375
Net Income (contrast '€1,500 or less')		40.00**			
Net Income - €1,501 to €2,500	0.549 (0.19)	8.86**	1.206	1.732	2.487
Net Income - More than €2,500	1.364 (0.22)	38.99**	2.550	3.913	6.005
Gender	-0.435 (0.17)	6.93**	0.468	0.647	0.895
Constant	-0.645 (0.10)	41.33**		0.525	

Note: n = 1,009. R^2 = 0.09 (Cox & Snell), 0.13 (Nagelkerke). Model χ^2 = 94.03, $\rho < 0.01$.

** = $\rho < 0.01$ * = $p < 0.05$

Both secular-rational and self-expressive dimensions are as defined in Tables 3 and 4. Four cross-dimension measures are created using these dimensions. Survey participants scoring 0 on both secular-rational and self-expression measures are classified as 'Traditional-Survivalist' (n = 392); those scoring 2 on secular-rational and 0 on self-expression are classified as 'Secular-Survivalist' (n = 145); those scoring 0 on secular-rational and 2 on self-expression are classified as 'Traditional-Self Expressive' (n = 261); and those scoring 2 on both measures are classified as 'Secular-Self Expressive' (n = 211).

For Gender variable; Male=0, Female=1. Both the cross-dimension and net income measures are tested with reference to a base. For the cross-dimension variable the base is the Traditional-Survivalist group.

TABLE 9: SUBCULTURES AND HOLDINGS OF SAVINGS

1. SELF-EXPRESSION

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Self-Expression (contrast 'Neutral')		4.68			
Survivalist	-0.229 (0.16)	2.11	0.583	0.795	1.084
Self-Expressive	0.173 (0.18)	0.90	0.832	1.189	1.698

R^2 = 0.03 (Cox & Snell), 0.05 (Nagelkerke). Model χ^2 = 55.30, ρ < 0.01.

2. SECULAR-RATIONAL

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Secular-Rational (contrast 'Neutral')		5.43			
Traditionalist	-0.428 (0.19)	5.29 *	0.452	0.652	0.939
Secular-Rational	-0.232 (0.19)	1.43	0.542	0.793	1.160

R^2 = 0.03 (Cox & Snell), 0.06 (Nagelkerke). Model χ^2 = 52.22, ρ < 0.01.

3. CROSS DIMENSIONS

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Cross-Dimension (contrast 'Traditional-Survivalist')		2.11			
Secular-Survivalist	-0.183 (0.33)	0.31	0.439	0.833	1.581
Traditional-Self Expressive	0.303 (0.32)	0.91	0.727	1.354	2.519
Secular-Self Expressive	-0.134 (0.30)	0.20	0.489	0.875	1.564

R^2 = 0.01 (Cox & Snell), 0.03 (Nagelkerke). Model χ^2 = 12.97, ρ < 0.05.

** = ρ < 0.01 * = p < 0.05

All logistic regressions run with unreported gender and net income as controls. All subculture variables as per Tables 7, 8, 9.

TABLE 10: SUBCULTURES AND LOANS

1. SELF-EXPRESSION

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Self-Expression (contrast 'Neutral')		11.98**			
Survivalist	0.542 (0.16)	11.36**	1.255	1.720	2.358
Self-Expressive	0.125 (0.17)	0.52	0.806	1.133	1.593

R^2 = 0.00 (Cox & Snell), 0.01 (Nagelkerke). Model χ^2 = 13.70, $\rho < 0.05$.

2. SECULAR-RATIONAL

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Secular-Rational (contrast 'Neutral')		7.12 *			
Traditionalist	0.388 (0.19)	4.29 *	1.021	1.474	2.127
Secular-Rational	0.426 (0.18)	5.51 *	1.073	1.532	2.186

R^2 = 0.00 (Cox & Snell), 0.00 (Nagelkerke). Model χ^2 = 7.52, $\rho > 0.05$.

3. CROSS DIMENSIONS

			95% for Odds Ratio		
	B (SE)	Wald	Lower	Odds Ratio	Upper
Cross-Dimension (contrast 'Traditional-Survivalist')		12.39**			
Secular-Survivalist	0.611 (0.31)	3.81	0.997	1.842	3.403
Traditional-Self Expressive	-0.264 (0.33)	0.66	0.406	0.768	1.451
Secular-Self Expressive	0.677 (0.28)	5.99 *	1.144	1.968	3.384

R^2 = 0.02 (Cox & Snell), 0.03 (Nagelkerke). Model χ^2 = 15.09, $\rho < 0.05$.

** = $\rho < 0.01$ * = $p < 0.05$

All logistic regressions run with unreported gender and net income as controls. All subculture variables as per Tables 7, 8, 9.