

Determinants of Households' Risk

Abstract

This paper deals with risk taking attitude and behaviour of households in Spain. It analyses whether business owning households are more risk tolerant than non owners, and which household features are conditioning risk taking perceptions and their relation to risk behaviour. For that, it uses data from the 2005 Spanish Survey of Household Finance (EFF). The paper improves the definition and measurement of risk behaviour and stress the relevance of owning a business or your home on your risk characteristics. Results will help to increase the understanding of risk tolerance and behaviour.

Keywords: households, risk attitude, risk behaviour, investment.

JEL Codes: D80, D14, G11

1. Introduction

Uncertainty is an important part of everyday life. Every little economic decision implies taking risks: financial, professional, political, regulatory, environmental or reputational. In fact the attitude towards risk is one of the main characteristics used as an important variable in economic and financial analysis. Being risk averse or risk neutral will end up with different predictions on agents' actions. Therefore, understanding risk attitudes will clearly help in forecasting economic behaviour (Dohmen, Falk, Huffman, Schupp, Sunde and Wagner, 2006).

Risk attitudes vary across individuals. Some personal characteristics might be more related to high tolerance to risk whereas others could imply less willingness to face risky decisions. Being able to identify the factors and determinants that lie behind these differences would improve the insight into this important economic concept. However, although risk tolerance conditions decision making, risk subjective perceptions may not be the only factor affecting economic behaviour. Being aware of the differences between risk perceptions and risk taking behaviour is highly important. First, these differences may indicate that some individuals do not understand risk and would be taking more or less risk than they actually desire (Schooley and Worden, 1996). Second, the existence of these differences would imply that risk attitude is not the only factor behind risk taking. There could be other variables, such as the context in which decisions are made, that can influence risk taking (Shoemaker (1993)). For instance, the Markets in Financial Instrument Directive (MiFiD) of the European Commission is a good example of this dichotomy. It requires financial advisors to identify customer risk preferences and to customize their advice accordingly. Typically, the identification takes place by way of self-disclosure individual's risk attitude and also by checking previous investment decisions. Understanding the degree of agreement between self-declared risk propensity and risk portfolio decisions would make easier the development of adequate financial planning services.

Previous papers have analysed the role of risk tolerance as one of the essential components of economic decision making. Friend and Blume (1975) propose a framework to measure risk tolerance that focus on the relationship between risk attitude and wealth. Riley and Chow (1992) find that risk aversion decreases with wealth, education and age. Hanna and Chen (1997) deal also with the links between risk tolerance, wealth and investment horizon through the use of historical investment data and simulations. Jianakoplos and Bernasek (1998) relate gender differences with

household holdings of risky assets. Halek and Eisenhauer (2001) analyse risk aversion examining its relationship with different demographic groups based on characteristics such as age, wealth, education etc.

Together with the analysis of risk attitudes, previous studies have also addressed the factors affecting risk taking behaviour. Heaton and Lucas (2000) and Cocco (2005) find that real state and private business holdings affect portfolio choices. In particular, both real state and business ownership prevents agents from having a greater relative share of stockholdings. However, Jin (2011) finds no conclusive results with respect to their effects on the risk of investment portfolios.

The relationship between both concepts, risk attitude and risk taking, is first analysed by Schooley and Worden (1996). They compare the two measures of risk aversion and relate them to socioeconomic factors. Overall, their results show that both measures behave in a similar way indicating that households have a clear understanding of their relative risk taking. However they do not analyse the effects of real state or private business investments on risk.

The contribution of the paper is twofold. First, it improves the definition and measure of risk behaviour. Contrary to previous papers, the risk taking behaviour will be calculated by means of the standard deviation of household portfolio. Traditionally, the percentage of risky assets has been used as a proxy for risk taking behaviour (Xiao et al., 2001). However, when the portfolio includes different risky assets this measure of risk behaviour is not very appropriate. It assumes that all assets share the same risk features when each asset has different risk characteristics. In other words, with this measure, a household holding a 30% of its wealth in stocks would be considered to have the same risk as a household with 30% investment in treasury bonds. This is clearly not the case. Using the standard deviation of the household portfolio allows to taking into account asset risk differences and distinguishing between household portfolios with the same percentage of risky assets (but different composition).

Second, with the improved measure of risk taking behaviour, it tries to address the following questions: (i) study the determinants of the differences of households risk taking and behaviour and, (ii) to analyse the degree of integration between the risk attitude and the explicit risk taking behaviour of households (iii) finally, following the papers of Heaton and Lucas (2000) and Cocco (2005) analyse the effects of real state and private business holdings on risk attitudes and behaviour. For that, we use data from the 2005 Spanish Survey of Household Finance (EFF).

The rest of the paper is organised as follows. Section 2 reviews the studies on previous literature on the link between risk tolerance, financial behaviour and family firms. In section 3, we present the data used. Section 4 presents the results. Finally section 5 concludes

2. Risk, households and portfolio choice

The literature on risk taking behaviour analyses how household make investments. In particular, theoretical models traditionally distinguish between a risk-free asset and risky assets (Guiso, Haliassos and Japelli (2002)). Mainly, risky assets are considered to be stockholding. Recently, the kind of assets behind the “risky” category have been extended to include real state and business ownership (Flavin and Yamashita (2002), Cocco (2005), Yao and Zhan (2005) and Jin (2011)). This inclusion is based on the evidence that investing in owner-occupied housing as well as private business holdings reduce the percentage of investment in stockholdings (Cocco (2005), Jin (2011) and Heaton and Lucas (2000)). Portfolio final composition will depend on the impact of real state and private business on portfolio choice, and therefore on risk taking.

Risk attitude is also present in the academic research on the determinants of starting and being a business owner. For instance, Marshall (1930), within the neo-classical thought, stresses risk attitude, in particular being a risk lover. Besides, education, wealth and capital ownership play a significant role and are related to business start and ownership. Cantillon (1959) seeking to understand the very nature of commerce considers the entrepreneur as a person willing to take risks and able to manage uncertainty. Say (1971) views risk bearing also as an important quality of private business owners, together with the ability to obtain capital and a profound knowledge of the world and business. Knight (1971) also views the risk bearing characteristic of business owners to be relevant together with the ability to obtain capital. Finally, Kihlstrom and Laffont (1979) and Parker (1996, 1997) consider the degree of risk aversion as the most important determinant of being a business owner

As presented above, the concept of risk aversion is usually analysed by the attitude toward risk, the risk taking behaviour or both. The attitude toward risk refers to people’s basic preferences, traits or dispositions towards risk-taking and it is considered as independent of the situation or endowments (Schoemaker, 1993). The risk taking behaviour refers more to how people behave in actual circumstances. Although both

measures can be described via utility functions they follow opposite directions (Schoemaker, 1993). In the first case, risk attitude would be the driving force behind the behaviour of agents whereas in the second, risk-taking behaviour would be a description of the risk attitude and therefore the utility of agents. In an integrated framework Schoemaker (1993) suggest that risk attitude may affect risk-taking behaviour.

Following the above discussion it would be interesting to analyze risk attitude, risk behaviour and their consistency of households that hold real state and private business in their portfolios. Previous empirical studies confirm the idea that self-employment or being an entrepreneur have positive associations with risk-taking attitudes (Sung and Hanna 1996; Grable and Lytton 1998, Grilo and Irigoyen 2006, Grilo and Thurik 2006 and 2008). Households that have private business investments, therefore, are expected to take above-average risks.

Further, there is a wide agreement in the academic literature that the socioeconomic and demographic characteristics of households also have a word to say in determining subjective risk aversion. Wealth is one of the main determinants of risk aversion (Gollier, 2001). As discussed above, it is also one of the key characteristics of being a business owner and therefore it is also related to risk attitude of entrepreneurs (Say, 1975, Marshall, 1930, and Knight, 1971). Previous empirical papers find risk-taking behaviour positively related to household wealth (Schooley and Worden (1996) and Jianakoplos and Bernasek (1998)). It has also been documented that wealthier households' portfolios are heavily skewed towards risky assets, particularly investments in their own privately held business (Carroll, 2002). To better understand how households make risky decisions we will examine the relationship between risk attitude and behaviour and wealth. Accordingly, variables that may help increase family wealth, such as family income, could also affect the level of risk tolerance. Previous evidence showed that non-investment income (Sung and Hanna 1996) and total income (Grable and Lytton 1998) were positively related to the risk-taking attitude.

Education, knowledge and age are determinants of business start and ownership and can be also related to risk attitude of self employed (Say, 1975, Marshall, 1930, and Knight, 1971). Sung and Hanna (1996) confirmed that generally, people are more willing to take risks at a younger age, and Jianakoplos and Bernasek (1998) and Cohen

and Einav (2007) found that age effects on risk-taking behaviour have a U-shape. Gender is also assumed to affect risk attitudes. Women are expected to be more conservative investors than men (Wang, 1997) and there is evidence supporting this view in financial decision-making (Barsky et. al., 1997, Donkers et. al. 1999 and Hartog et. al. 2002). Recent survey data suggest that wealth holdings of single women are less risky than those of single men of equal economic status (Jianakoplos and Bernasek, 1998, Sunden and Surette, 1998). Also, when asked about their attitudes toward financial risks, women seem to report a lower risk propensity than men (Barsky et al., 1997).

Finally, previous studies showed that the number of young dependents in a household has negatively affected the proportion of risky assets held by married couples (Jianakoplos, and Bernasek 1998).

Following the above discussion the model we will estimate is the following:

$$RM_{it} = \beta_0 + \beta_1 BUS_{it} + \beta_2 H_{it} + \beta X_{it} + u_{it}$$

Where RM is the risk measure, namely risk attitude or risk behaviour, BUS and H are dummies for being a business owner and owning your home respectively and X is the set of socioeconomic characteristics.

3. Data and variable definition

We use the 2005 survey on household finances (Encuesta Financiera de las Familias (EFF)) from the Banco de España, similar to other countries' as Banca d'Italia survey (Survey on Household Income and Wealth (SHIW) and the US Board of Governors Survey of Consumer Finances (SCF). EFF is multi-imputed dataset in order to enable analysis with complete-data methods¹. The main feature of EFF is the oversampling of wealthy households (as SCF does). This is done due to the fact that the distribution of wealth is heavily skewed and some types of assets are held only by a small fraction of the population. In this sense, this oversampling achieves not only representativeness of the population but also of aggregate wealth. Besides, it allows for the study of financial behaviour at the top of the wealth distribution. We use the 2005 EFF adds some questions about business proprietorship. Accordingly, we decide to use 2005 EFF, first and then move on to a longitudinal study afterwards.

¹ It provides 5 different imputations for each missing data.

EFF gathers information on risk perceptions, real and financial assets on household grounds. Yet, information on personal features or about the type of employment situation is provided for all household members over 16. Because there is no information on the risk perception of each household member or the assets held individually, the unit of analysis is the household.

3.1. Variable definition

We will analyse the relationship between risk attitude and risk behaviour together with household characteristics. In particular, we compare attitudes and behaviour of households that own a business or their home with families that do not own. For that, we construct measures of risk attitude and behaviour and use different socioeconomic features that have been previously used in related papers.

To account for risk attitude we use the direct perception of willingness to invest in risky assets. This is the response to the question “Which of the statements on this page comes closest to the amount of financial risk that you and your (spouse/partner) are willing to take when you save or make an investment? (1) Take *substantial* financial risks expecting to earn substantial returns; (2) Take *above average* financial risks expecting to earn above average returns; (3) Take *average* financial risks expecting to earn average returns; (4) *Not willing* to take any financial risks.”. We have reversed the scale, so that higher values indicate higher tolerance to risk, making results easier to interpret.

The second dependent variable is risk taking behaviour. In previous studies this variable is measured by the share of risky assets in total assets. However, as discussed above, this is not very appropriate since risky assets can have very different characteristics. Instead, in this paper we will calculate the standard deviation of the household portfolio as the measure of risk taking. We will consider six different categories of risky assets: real state, public equity, private business, mutual funds, pension funds and bonds². Checking, saving and money market accounts and vehicles are considered safe assets. In order to compute the portfolio risk we need to estimate the variance-covariance matrix of the risky assets. For that several indicators of the variance

² Similar aggregations can be found in Guiso et.al. (2002), Campbell (2006) and Jin (2011). Ours is more disaggregated since we distinguish mutual funds, pension funds and bonds as additional categories.

of each kind of asset are used. All indicators are computed in quarterly data. The House Price Index from the INE is used for real state investments. Variations in public equity are included by means of the Ibex35 from the Spanish stock exchange. As a proxy for private business we use the Ibex SmallCap. Data on Mutual and Pension funds variations are taken from the statistics published by the Spanish Association of Investment and Pension Funds (INVERCO). Finally, bonds are measured by the AIAF (Spanish market of fixed rate) index of fixed rate. AIAF is Spain's benchmark market for Corporate Debt and Private Fixed Income³.

Following the previous discussion, the independent variables are different household characteristics taken from the survey: home ownership status, household size, family income, education and marital status. A household is considered to have private business holdings when any of its members has any kind of ownership in a firm. Other personal features generally considered in household analysis are age and wealth. Previous results on the relationship of these two variables with risk tolerance are ambiguous (Jin (2011)). As in other studies (Campbell (2006) and Jin (2011)), both age and wealth will be included also in quadratic terms to capture possible non-linear effects. Finally, we also include a dummy variable to account for gender⁴. In this way, we can capture the role of woman in household risk attitudes and behaviour.

Information on personal characteristics is not available on household grounds, therefore following the strategy used in previous works the information on the reference person is used since she is considered the individual that chiefly deals with financial issues and holds the representation of the household⁵ (Schooley and Worden (1996), Guiso et.al. (2002) and Barasinska et al. (2008)).

4. Methods and results

As explained above EFF is a multi-imputed dataset. For each missing value, five imputed values are provided. These imputations are stored as five distinct datasets. To make inferences from the five multiply imputed (MI) datasets one has first to analyze

³ Calculations have been made also with the yield index of public debt and results are similar. Linear Correlation between the two indices is greater than 90%.

⁴ 0 indicates male, 1 indicates female.

⁵ For more detail on the definition of the reference person, see CAPI questionnaire, EFF 2005

each of the datasets and then combine the results. However, for explanatory analysis, it is enough to use one or two of the MI datasets. Therefore, we will use one MI dataset for descriptive statistics and combine results for regression analysis. In this latter case weights are taken into account because of the unequal probability of the household being selected into the sample given the oversampling of the wealthy in the EFF and geographical stratification. We follow Cameron and Trivedi (2005) that claim that weights should be used if regression is viewed as a tool to describe population responses.

4.1 Descriptive analysis

Table 1, panel A summarizes the characteristics of households that own or do not own a business. The average age of the household business owners is forty seven years old, and they have an average level of education closer to 6 that corresponds to higher secondary school (education variable goes from 1, *illiterate*, to 12, *postgraduate university education*). A comparison between owners and non owners shows that households that own a business are slightly younger and better educated than non-owners. Business owners are with greater probability home owners, have a slightly larger family size and are more often married than non-owners. Households that own a business also have higher levels of income and wealth than non-owners. All differences are statistically significant except for gender distribution. Households with both males and females as heads have the same proportion of owning a business.

[insert table 1 around here]

Panel B presents the results distinguishing the ownership of home. When comparing households that own their home with non-owners, results for marital status, household size, income and wealth are qualitative similar to those of panel A. Some differences are found in the case of age, education and gender. Home owners are older and more often males than non-owners. There are no significant differences with respect to education. Being a home owner means that you also have a greater probability of owning a business. Household income differences in panel A and B are similar. However, the difference in wealth is much more important in the case of home owners. Households that own their own house have more than 40% higher wealth than non-

owners. This difference goes down to 10% when comparing business ownership. It seems that owning a house is more related to wealth than holding private equity.

In order to compare risk-taking attitude and behaviour of business and home owners and non-owners we calculate the proportion of households that are willing to take different risk levels and the standard deviation of the household portfolio. Results are shown in table 2. Panel A presents findings for risk taking attitude. These numbers evidence that, in general, households that own a business are more willing to take risks than non-owners. This is in agreement with previous empirical evidence (see Sung and Hanna 1996; Grable and Lytton 1998, Grilo and Irigoyen 2006, Grilo and Thurik 2006 and 2008). However when we look at home ownership, there is no significant difference in risk attitudes between owners and non-owners.

[insert table 2 around here]

Panel B shows the results for risk behaviour. It can be observed that the percentage of households that own a business with lower risk portfolios is much lower than non owners. Accordingly, a higher percentage of business owners have the highest risky portfolios (share of risky assets between 75%-100%). All these differences are statistically significant. This evidence is in line with results of panel A. Results are completely different home owners and non-owners. Portfolios of households that own their home lie with greater probability in the three upper categories of risk taking (from 25% to 100%). The opposite result is found for the lowest risk portfolios (0%-25%) where non-owners represent around 80% of the sample. These divergent results in risk taking contrast with the non-significant difference found for risk attitudes.

In order to analyse the relationship between risk attitude and risk behaviour we explore the links between the willingness to take risks of households that own or not a business or their home and their actual risk behaviour (Panel C). Results show a strong coherence between risk attitude and behaviour for business owners. Generally, the risk of portfolios held by households that own a business increases as the level of risk tolerance increases showing a proportional relationship. Non-owners present less consistency in their results. Although in some cases greater risk attitude corresponds to greater portfolio risk (76%-100% or 0%-25%) there is no general pattern among the

non-owners. Then, results for this group are not so consistent and would seem to indicate that households do not perfectly understand the risks they are willing to take. Non home owners exhibit some coherence between risk attitude and behaviour. The lowest risk attitude categories show the greatest proportion of low risk portfolios whereas the opposite is found for the two highest attitude levels. However, households that report above average or sustained risk share approximately the same proportion in high and low risk portfolios. Results for the 4 categories draw a U shape with few medium risk portfolios. Some consistency between attitude and behaviour of home owners is also present. Greater risk attitude means, in general, greater risk taking behaviour. Again, although reported risk attitudes were very similar between home owners and non-owners, the coherence with their risk taking is clearly different.

Hence, it is interesting to analyse more deeply risk tolerance and behaviour to try to disentangle this conflicting evidence.

4.2 Regression analysis

Multiple regression analyses are conducted to examine the factors associated with risk-taking attitude and behaviour measured by the standard deviation of portfolio returns. As independent variables, we introduce two dummy variables to identify if the household is a business owner or a home owner and a set of socioeconomic characteristics as control variables. As dependent variables, we have defined two alternative measures: risk attitude and risk behaviour. Since the former is an ordinal variable the model cannot be consistently estimated using ordinary least squares, therefore we use an ordered logit model. The latter is estimated through a tobit model that are more appropriate than linear regression models to treat censored samples (36% of the sample declares not to have risky assets).

Table 3 presents the analysis for risk attitude and behaviour. As commented above, previous results on the relationship of age and wealth with risk tolerance are ambiguous. The four columns present different specifications combining these two variables to identify and capture possible non-linear effects. Panel A collects results for the risk tolerance variable. In all runs, the business owner coefficient is highly significant and, as expected, has a positive effect on risk attitude, suggesting that households that owned a business are more willing to take risks than non owners. At the

same time, home ownership is not significant supporting previous evidence from table 2. As previously discussed, several socioeconomic characteristics affect significantly risk-taking attitudes. Education and income present positive and significant coefficients indicating that more educated households with greater income are more prepared to take risks. On the contrary, being a woman and household size present negative and significant coefficients. Smaller households are more willing to take risks in line with Sung and Hanna (1996) and Jianakoplos and Bernasek. However, those households with female persons of reference are less inclined to take risks, indicating that women are more conservative when facing risks. This result is similar to Barskey et. al. (1997), Donkers et. al. (1999) and Hartog et. al. (2002). Age is statistically significant and presents a hump-shaped effect on risk attitudes. Younger and older households are less willing to take risks. This result is similar to Ameriks and Zeldes (2004), Poterba and Samwick (2001) and goes against evidence in Campbell (2006) for stockholding. The effect of wealth is also significant but, on the contrary, shows a U shaped, meaning that poorer and richer households are more prepared to face risks. This result is in line with Campbell (2006) but contrary to Guiso et. al. (2003). The interaction term between age and wealth present a significant positive sign indicating that increases of age, wealth or both means a greater readiness to take risks.

[insert table 4 around here]

Table 3, panel B collects the results for risk behaviour. Both, households that own a business or own their home present a positive and significant effect on risk behaviour. Contrary to results of the risk attitude regression, gender, education and household size are no longer significant. Age maintains the sign and the hump-shape relationship with respect to risk taking behaviour. Wealth is not significant. This is an important change with respect to results of panel A. It loses the U shaped and it is only significant when interacts with age. This result goes against previous studies that usually stress the relevance of wealth in making risky decisions. Finally, marital status becomes relevant, indicating that married people tend to make riskier decisions than singles do. As can be concluded, the comparative effects of socioeconomic variables between risk attitude and behaviour are quite different. This result contradicts previous evidence and is in line with Schoemaker's (1993) claim about the different nature of risk attitude and behaviour.

5. Conclusions

This study examines risk tolerance and behaviour of Spanish households using data from the 2005 Encuesta Financiera de las Familias (EFF) developed by the Bank of Spain. It does so improving the definition and measure of risk behaviour. Contrary to previous papers, the risk taking behaviour is calculated by means of the standard deviation of household portfolio. This measure allows to taking into account asset risk differences and distinguishing between household portfolios with the same percentage of risky assets (but different composition).

Considering that owning a business or your home could affect family risk taking decisions, special attention has been also devoted to the comparison between households who own businesses or their home and non owners. The findings can be summarized as follows: households that own a business are more willing to take risks and their portfolio has greater risk compared to households who do not own a business. The results for home ownership are a bit different. Although home owners have the same risk attitude than non-owners, their behaviour is riskier.

Looking at socioeconomic features, gender, education, income and household size affect risk-taking attitudes. Age is also a relevant factor and presents a hump-shaped effect on risk attitudes whereas wealth shows a U shaped, meaning that poorer and richer households are more prepared to face risks. Age and wealth interact together indicating that increases of age, wealth or both means a greater readiness to take risks.

Results are a bit different for risk taking behaviour. Gender, education and household size are no longer significant. Age maintains the sign and the hump-shape relationship with respect to risk taking behaviour. However wealth is not significant. Finally, marital status becomes relevant, indicating that married people tend to make riskier decisions than singles do.

The findings of this study add to the analysis to further explain the risk decision-making of households and the characteristics that could shape their risk attitude and behaviour.

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Table 1: Descriptive statistics of Households who own and do not own a business or their home, weighted sample

Variable	Panel A		Panel B	
	Do not own business	Own business	Do not own home	Own home
Weighted percentage	0.8589	0.1410	18.69	81.30
Family Characteristics				
Head's age				
<i>Mean</i>	52.7286	47.2359	45.9179	53.3834
<i>standard deviation</i>	(0.2397)	(0.3602)	(0.5699)	(0.22074)
Head's education				
<i>Mean</i>	5.0640	5.8081	5.2265	5.1558
<i>standard deviation</i>	(0.0461)	(0.1006)	(0.1018)	(0.0469)
Head's gender				
<i>Mean</i>	1.4502	1.4078	1.5164	1.4277
<i>standard deviation</i>	(0.0071)	(0.0150)	(0.0161)	(0.0069)
Head's marital status				
<i>Mean</i>	0.6567	0.8332	0.5583	0.7099
<i>standard deviation</i>	(0.0067)	(.0113)	(0.0160)	(0.0064)
Household size				
<i>Mean</i>	2.6957	3.3932	2.6993	2.8159
<i>standard deviation</i>	(0.0175)	(0.0341)	(0.0447)	(0.0169)
Home/Business owner				
<i>Mean</i>	1.6111	1.7170	0.1067	0.1489
<i>standard deviation</i>	(0.0113)	(0.0212)	(0.0100)	(0.0050)
Household income				
<i>Mean</i>	9.8995	10.3611	9.6565	10.0341
<i>standard deviation</i>	(0.,126)	(0.0274)	(0.0311)	(0.0123)
Wealth				
<i>Mean</i>	11.4998	12.5554	8.5822	12.2077
<i>standard deviation</i>	(0.0270)	(0.0408)	(0.0879)	(0.0130)

Bold numbers indicate significant differences at 0.01%

Table 2

Panel A: Risk tolerance level of business and home owners and non owners				
	non owners	business owners	Non home ownership	Home ownership
Willing to take (%)				
substained risk	0.57	2.69	1.31	0.77
above average risk	1.42	4.81	1.86	1.90
average risk	13.14	23.72	11.96	15.25
no risk	84.85	68.76	84.83	82.05

Bold numbers indicate significant differences at 0.01%

Panel B: Risk behaviour of business and home owners and non owners				
	non owners	business owners	Non home ownership	Home ownership
Portfolio Risk				
0-25%	29.37	7.52	78.79	14.82
26-50%	29.73	10.57	4.40	31.92
51-75%	32.64	6.90	4.07	34.37
76-100%	8.24	75.07	12.72	18.87

Bold numbers indicate significant differences at 0.01%

Panel C: Risk tolerance behaviour by risk attitude				
	0-25%	26-50%	51-75%	76-100%
Non business owners				
Below average risk	27.17	27.45	32.20	13.16
Average risk	27.79	28.81	18.01	25.38
Above average risk	19.99	22.74	19.23	38.02
Substained risk	15.65	31.64	24.51	28.18
Business owners				
Below average risk	6.75	15.61	4.88	72.73
Average risk	2.33	5.35	0.08	92.22
Above average risk	0	0	0	100
Substained risk	0	0	9.68	90.31
Non home owners				
Below average risk	80.26	4.16	4.58	10.63
Average risk	73.29	7.23	1.37	18.08
Above average risk	47.02	0	0.39	52.57
Substained risk	51.56	0.75	0	47.68
Home owners				
Below average risk	14.42	32.32	37.54	15.70
Average risk	18.31	30.73	19.50	31.44
Above average risk	10.23	22.71	19.12	47.91
Substained risk	0.02	35.40	29.70	34.86

Table 3: Risk Attitudes and Behavior**Panel A: Risk attitude, ordered logit model**

	(1)	(2)	(3)	(4)
Business Owner	0.6556*** (0.1383)	0.6280*** (0.1371)	0.5990*** (0.1401)	0.6083*** (0.1390)
Age	-0.0177*** (0.0038)	0.0473* (0.0267)	0.0438* (0.0264)	0.0224 (0.0283)
Age^2		-0.0006** (0.0003)	-0.0007** (0.0003)	-0.0007** (0.0003)
Education	0.0989*** (0.0176)	0.0971*** (0.0174)	0.0849*** (0.0178)	0.0840*** (0.0176)
Gender	-0.3386*** (0.1156)	-0.3314** (0.1152)	-0.2929** (0.1168)	-0.2792** (0.1164)
Marital Status	0.1402 (0.1415)	0.1376 (0.1423)	0.1819 (0.1431)	0.1572 (0.1403)
Family units	-0.1002* (0.0532)	-0.1317** (0.0538)	-0.1404** (0.0545)	-0.1420** (0.0546)
House Owner	0.0073 (0.0794)	-0.0126 (0.0792)	-0.0108 (0.0806)	0.0005 (0.0813)
Income	0.4433*** (0.0931)	0.4213*** (0.0932)	0.3201*** (0.0895)	0.3310*** (0.0898)
Wealth	0.0884** (0.0334)	0.0860** (0.0335)	-0.3580*** (0.0578)	-0.4815*** (0.0820)
Wealth^2	.	.	0.0315*** (0.0041)	0.0292*** (0.0044)
Age*wealth				0.0033** (0.0015)
Constant	6.0028 0.8540	7.1284 (0.9750)	4.6084 (1.0084)	3.6453*** (1.1066)

*, **, *** are statistically significant at 10%, 5% and 1% respectively.

Panel B: Risk behaviour, OLS regression

	(1)	(2)	(3)	(4)
Business Owner	0.2822*** (0.0152)	0.2790*** (0.0152)	0.2691*** (0.0152)	0.2696*** (0.0152)
Age	0.0027*** (0.0003)	.0120*** (0.0020)	0.0110*** (0.002)	0.0106*** (0.0022)
Age^2		-0.0001*** (0.00001)	-0.0001*** (0.00001)	-0.0001*** (0.00001)
Education	0.0017 (0.0017)	0.0017 (0.0016)	-0.0008 (0.0016)	-0.0008 (0.0016)
Gender	-0.0136 (0.0097)	-0.0115 (0.0097)	-0.0053 (0.0095)	-0.0050 (0.0096)
Marital Status	-.0217* (0.0128)	-0.0210 (0.0129)	-0.01564 (0.0124)	-0.01586 (0.0124)
Family units	0.0176*** (.0051)	0.0128** (0.0052)	0.0121** (0.0051)	0.0121** (0.0051)
House Owner	-0.0940*** (0.0088)	-0.0975*** (0.0088)	-0.0982*** (0.0086)	-0.0980*** (0.0087)
Income	0.0323*** (0.0075)	0.0291*** (0.0073)	0.0186*** (0.0070)	0.0189 (0.0069)
Wealth	0.0273*** (0.0022)	.0267*** (0.0022)	-0.0286*** (0.0053)	-0.0317*** (0.0072)
Wealth^2			0.0042*** (0.0004)	0.0042 (0.0004)
Age*wealth				0.0001 (0.0001)
Constant	-0.3936*** (0.0681)	-0.5635*** (0.0783)	-0.2760*** (0.0784)	-0.2537*** (0.0906)

*, **, *** are statistically significant at 10%, 5% and 1% respectively.