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# **The Impact of the COVID-19 Pandemic on the Risk Propensities of Dutch Households**

**A Comparison with the 2008 Financial Crisis**

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## **ABSTRACT**

This paper analyses what impact the COVID-19 pandemic had on the risk preferences of Dutch households, drawing a comparison with the 2008 financial crisis. By utilising data from the DNB Dutch Household Survey, this study employs both qualitative and quantitative measures to evaluate changes in risk aversion. The analysis reveals a significant and enduring increase in risk aversion among Dutch households following the 2008 financial crisis. However, the impact of the COVID-19 pandemic on household risk preferences is less clear, with no strong evidence indicating a systematic change. The study also explores the disparities in responses between different wealth percentiles but does not find any statistically significant results.

**Keywords:** Risk aversion, COVID-19, 2008 financial crisis

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## CHAPTER 1 Introduction

COVID-19 has profoundly impacted societies worldwide, altering everyday life and reshaping economic landscapes. The pandemic triggered widespread economic uncertainty, leading to job losses, business closures, and significant shifts in financial markets (Baker et al., 2020; Beirne, 2020). These disruptions not only affected macroeconomic indicators but also had profound implications for individuals and households. The Dutch economy was particularly exposed to the impacts of COVID-19 due to its considerable export sector, which faced substantial disruptions as global trade slowed and supply chains were interrupted (Statistics Netherlands, 2022). As a result, the Dutch economy was quickly derailed by the pandemic with economic activity contracting in the first two quarters of 2020 by 1.5% and 8.5% q-o-q respectively (European Commission, 2020). As the pandemic progressed, the Dutch government implemented a series of fiscal measures to support businesses and workers, including wage subsidies and tax deferrals (Government of the Netherlands, 2020). Despite these efforts, unemployment increased, and consumer spending plummeted (Statistics Netherlands, 2024). Hence, households had to negotiate unprecedented uncertainty, leading to potential shifts in their risk preferences and decision-making processes (Bruce et al., 2022).

In such a climate of uncertainty, understanding how individuals make decisions becomes increasingly important. All individuals are faced with many decisions every day, all with varying levels of uncertainty. This uncertainty is a determinate factor in decision making; how one navigates a decision is partly determined by their risk appetite (Guiso & Paiella, 2005). Moreover, the interplay between uncertainty and decision-making extends beyond personal choices to encompass broader economic behaviours and outcomes; individuals' risk appetite not only shapes their individual decisions but also contributes to aggregate trends in consumption, investment, and savings (Benchimol, 2013). Thus, it stands to reason that if there were an economic shock which systematically altered the risk preferences of most individuals, that one would observe a macro effect as a result, a notion supported by Carson et al. (2018). Hence, understanding the dynamics of individual risk aversion is of great importance when considering the broader implications of economic shocks and trends. This is the foundational concept on which the premise of this research was founded.

Whilst the globe is, for the most part, past Covid, its effects will be felt for many years and as such the longer-term effects of the pandemic may not be realised for a few more years. However, many studies do explore its short to medium term political, financial, and trade implications at local and global levels (Hayakawa & Mukunoki, 2021; Albrecht, 2022; Sansa, 2020). Although some research, notably by Augustin et al. (2022), investigates Covid's impact on uncertainty, there's a noticeable absence of studies focusing on risk regarding households. In general, literature concerning risk preferences has predominantly centred on financial markets, investors, and businesses. The literature that does examine household risk appetite primarily examines the relationship between risk and demographic variables,

the extent of risk aversion in comparison to wealth, and the methods utilised for quantifying risk (Riley Jr & Chow, 1992; Bucciol & Miniaci, 2011).

Guiso et al. (2018) is one of the few studies that analyses changes in a risk metric across time, in this case survey responses, to determine how financial shocks effect individuals' risk preferences. The authors find that the 2008 financial crisis led to a systematic increase in risk aversion among the same individuals before and after the 2008 financial crisis. Furthermore, Carson et al. (2018) find time varying risk aversion between 1983 and 1989, a period containing the 1987 Black Monday stock market crash. More precisely they find that relative risk aversion does in fact increase around an economic shock, however, the magnitude of this change depends on various financial and demographic characteristics. As such it may seem reasonable to expect that Covid has also had a downward impact to risk appetite of Dutch households i.e. risk aversion has increased. However, the COVID-19 pandemic cannot be directly compared to other recent economic crises. Whilst the global economy saw a severe recession, many individuals in developed countries saw their total wealth increase during the pandemic, though this seems to have disproportionately accrued to the wealthiest in society as equities and real estate soared in value (Allen & Rebillard, 2021). This is in stark contrast to the 2008 subprime mortgage crisis, studied by Guiso et al. (2018), where millions lost vast amounts in stocks and real estate equity. Hence, the benefit of this study is twofold: 1) a detailed analysis of how the unique circumstances of the COVID-19 pandemic has specifically affected the risk appetite of Dutch households and 2) comparing the effects of the COVID-19 pandemic with those of the 2008 financial crisis to uncover any differences or similarities in household responses to these distinct economic shocks. Hence this investigation's research question:

*What impact has COVID-19 had on the risk appetite of Dutch households and how does it compare to the 2008 financial crisis?*

To analyse this question, this research uses data from the DNB Dutch Household Survey consisting a panel sample representative of the Dutch population. Using entity fixed effects, this research examines variations in both qualitative and quantitative measures of risk aversion in the form of self-assessed risk propensity questions and households' asset portfolios. The final dataset includes 5,821 observations from 1,964 households for the period 2003-2010 and 7,189 observations from 2,201 households for the period 2015-2023.

The study finds a significant and enduring increase in risk aversion among Dutch households following the 2008 financial crisis, while no strong evidence was found to confirm the impact of the COVID-19 pandemic on household risk preferences. Additionally, wealth disparity analysis hints at differences in how households from different wealth percentiles responded to both crises. These include increased risk aversion for the wealthiest post 2008 financial crisis, for which there is statistically significant evidence, and decreased aversion following the pandemic. Additionally, the study suggests

that the wealthiest households altered their risk preferences differently to the least wealthy. However, the lack of statistical significance prevents drawing firm conclusions about the last two observations.

The remaining sections of the paper are organised as follows. Chapter 2 presents the theoretical foundations underpinning this study. The data source is introduced in Chapter 3 with a description of the source utilised including the datasets, independent variables, and controls. The subsequent chapter outlines the methodologies used to analyse the data, providing a detailed explanation of the techniques used to answer the stated hypotheses. Chapter 5 discusses the findings of the study, interpreting the results in the context of the theoretical framework. Finally, chapter 6 summarises the key insights from the study, discusses the limitations, and offers recommendations for future research.



## **CHAPTER 2 Theoretical Framework**

Existing literature is a fundamental part of academic research, forming the cornerstone upon which all subsequent research is built. As such, it is important to review the existing literature to identify its findings, potential shortcomings, and further research suggestions. This chapter delves into the underpinnings of risk appetite, exploring its definitions, measures, and the dynamics influencing it over time, particularly in response to economic crises. Consequently, six relevant hypotheses are formulated looking not only at the specific impacts of the 2008 financial crisis and COVID-19 on risk preferences across the whole sample but also among different demographic groups.

### **2.1 Measures of Risk Appetite**

#### **2.1.1 Definitions and Concept**

Whilst this research looks at the risk appetite of households and individuals, existing literature more commonly refers to risk aversion as the measure of how individuals and households react to uncertainty. The two terms are both concepts that describe how entities approach risk in their decision-making processes, however, they represent opposite attitudes towards risk. Risk appetite refers to the amount of risk an entity is willing to bare to achieve given objectives, whilst risk aversion describes a preference for certainty and a reluctance to take on risk. Both terms can be used interchangeably but note that the direction of interpretation changes between them.

The formalisation of risk aversion and its implications for economic behaviour can be traced back to the early 20th century. However, it gained significant attention in the mid-20th century, particularly in the context of asset pricing models, with notable contributions from von Neumann and Morgenstern's expected utility theory in the 1940s, and further developments by economists Kenneth Arrow and John Pratt in the 1960s. These foundational works have greatly influenced modern economic and financial theories, aiding in the understanding of decision-making under uncertainty.

#### **2.1.2 Proxies for Risk Appetite**

The subsequent literature surrounding risk aversion is expansive, encompassing various aspects of economic decision-making and behavioural finance. Researchers have explored, among other areas, how risk aversion influences portfolio performance, investment choices, and savings behaviour (Friend & Blume, 1970; Karni, 1982; Bajtelsmit & VanDerhei, 1997). However, risk aversion is not directly measurable, requiring various innovative methods to quantify. Perhaps the most profound and most widely adopted is Pratt and Arrow's independently developed concepts of absolute and relative risk aversion (RRA). This measure quantifies risk aversion using utility functions, allowing researchers to measure how risk preferences change with varying levels of wealth (Cohn et al., 1975). Empirical studies using the Arrow-Pratt framework have revealed many insights into how different demographic factors affect risk aversion, such as RRA decreasing with wealth and age (Riley & Chow, 1992).

Aside from RRA, there have been many other attempts to quantify risk aversion: using human subjective experiments and surveys, portfolio choice for investors, contestant behaviour on game shows, and auction prices (Rabin & Thaler, 2001; Guiso & Paiella, 2008; Post et al., 2008; Lu & Perrigne, 2008). With all these options it is pivotal to select the appropriate one for the proposed research. Based on the available data and context of the analysis, this study uses two measures of risk aversion, one qualitative and the other quantitative: 1) Self-assessed risk propensity statements and 2) portfolio choice analysis.

## **2.2 Time Varying Risk Aversion**

### **2.2.1 Risk Preferences Over Time**

Risk preferences have traditionally been regarded as given and not time-varying (Guiso, 2014). The most commonly applied risk preference characterisation is that of constant relative risk aversion. That is, risk appetite is constant and independent of age, wealth, and external economic conditions (Guiso, 2014). However, more recent research challenges this view, suggesting that risk preferences do in fact vary over time and can be influenced by changing demographic variables and dynamic economic conditions alike.

Time-varying risk aversion refers to the phenomenon where attitudes toward risk change over different time horizons or in response to changing economic conditions. Various researchers have investigated if risk aversion does indeed vary with time and what the potential drivers of this variation might be. In their 2018 paper, Guiso et al. analyse both qualitative and quantitative measures of risk aversion. They find evidence suggesting that risk aversion does exhibit time variation, influenced by factors such as market conditions, economic outlook, and personal experiences. These findings are consistent with the conclusions drawn by other researchers such as Carson et al. (2018) and Jung and Treibich (2015). These findings underscore the dynamic nature of risk aversion, highlighting its sensitivity to changing economic circumstances and personal factors.

### **2.2.2 In Times of Crisis**

In an analysis of a sequence of cross-sectional data Guiso (2014) presents evidence for systemic changes to risk aversion resulting from crises. The author finds that the percentage of risk tolerant individuals dropped significantly after the 2008 financial crisis. However, due to the cross-sectional nature of the data, these findings are only relevant for interpretation of the average investor. One would have to analyse a panel to determine if a specific event had an effect to individual risk preferences. Guiso et al. (2018) did exactly that, analysing the changes in risk aversion among the same individuals before and after the 2008 financial crisis. Their findings reveal that the financial crisis led to an increase in risk aversion among individuals, positing that this increase was induced by heightened fear resultant of the crisis. Bourdeau-Brien and Kryzanowski (2020) provide further evidence of heightened risk

aversion surrounding times of crisis. The pair investigate the impact natural disasters may have on individual risk aversion. They present compelling evidence that natural disasters cause economically significant increases in risk aversion. Whilst these two papers investigate two very different types of crises, they do identify a common theme: crises have the power to induce changes to an entity's risk preferences.

## **2.3 COVID-19 and the 2008 Financial Crisis**

### **2.3.1 The Onset and Economic Impact of COVID-19**

In December 2019 the Wuhan Municipal Health Commission, reported a concentration of novel pneumonia cases (WHO, 2020a). Over the following months the virus spread across the world being named SARS-CoV-2 on February 11<sup>th</sup> 2020, with the corresponding disease named COVID-19 (WHO, 2020b). A month later the WHO officially declared the outbreak a pandemic after which governments across the globe took decisive action and introduced drastic measures with the aim of curbing the spread of the disease. Measures such as lockdowns, curfews, and mandatory mask usage were instantly imposed on many populations. The introduction of these containment measures had immediate adverse effects on economies; on average the equivalent of a 15% reduction in industrial production in the 30-days after measures were first implemented (Deb et al., 2022).

Economies across the globe were thrown into recession, creating an uncertainty shock even larger than that felt in the aftermath of the 2008 financial crisis (Baker et al., 2020). In general risk propensity is lower during periods of recession (Buccioli & Miniaci, 2018). Therefore, one might expect to find similar results for COVID-19 as Guiso et al. (2018) do for the 2008 financial crisis: higher risk aversion as a result of the pandemic. However, the nature of both crises were very different. Many households saw their wealth surge during the pandemic as equities boomed and house prices soared (Allen & Rebillard, 2021). Furthermore, whilst both crises increased economic uncertainty, the recovery in financial markets post pandemic was far quicker than the 2008 financial crisis: it took the AEX 7 years to reach pre financial crisis levels but just 11 months after the pandemic in 2020. Hence, the overall impact of COVID-19 on risk aversion is nuanced with the full effects of the pandemic still unknown as inflation remains high and growth begins to stagnate. As a result, this investigation hypothesizes the following:

*H1: Risk aversion increased following the 2008 financial crisis.*

*H2: Risk aversion increased in the immediate aftermath of the COVID-19 pandemic.*

*H3: Risk aversion subsequently decreased following the reopening of the Dutch economy.*

### **2.3.2 Inequality**

Although net wealth surged during the pandemic, the overall increase was unevenly distributed. Much of the wealth increases were driven by valuation changes and so primarily accrued to the wealthiest in society (Allen & Rebillard, 2021). Moreover, lockdowns principally affected spending on travel and leisure, which are a significant portion of wealthier households' consumption. As a result, it is likely that the least wealthy in society felt the negative effects of the pandemic the most. This was only compounded by the high levels of inflation experienced once everything began to reopen. Hence, this study hypothesizes the following:

*H4: The risk tolerance of the wealthiest households was systemically different compared to the least wealthy across both the financial crisis and pandemic.*

*H5: The wealthiest in society became more risk averse following the 2008 financial crisis.*

*H6: The wealthiest in society became less risk averse following the COVID-19 pandemic.*

## **CHAPTER 3 Data**

### **3.1 Source and Period**

This analysis uses data from the DNB Household Survey (DHS), a panel survey run since 1993 representative of the Dutch population. The data are collected by CentERdata, a non-profit research institute in Tilburg, on behalf of the Dutch National Bank (DNB). The survey consists of some two thousand households, collecting data on various aspects of life including demographic characteristics, health status, financial assets and liabilities, as well as economic and psychological factors. The survey is divided into six primary questionnaires plus two modules containing aggregated data derived from the six core modules. This research employs variables from three of the primary questionnaires and both aggregated data segments: household information, income and health, psychological concepts, aggregated income, and aggregated wealth data. Despite minor changes to the questionnaires over the years, the data are comparable across time. Overall, a total of nine years per event are examined to study variations in household risk propensity following the 2008 financial crisis and the COVID-19 pandemic. The analysis incorporates the five years preceding each event as comparison years, the year of the economic event itself, and the subsequent three years to provide a comprehensive understanding of post-event trends. The intervening years are used in the creation of relevant figures and statistics.

Given the survey's structure, some households report their responses to the questionnaires as individuals whilst others report as a whole. As such, this paper differs from Buccioli and Miniaci (2018) by including all individuals in the analysis rather than limiting its scope to just the heads of the households in the form of primary breadwinners. By doing so, this research may provide a more comprehensive understanding of systemic household risk dynamics. Accordingly, each individual must have their own unique identifier which is calculated from both the household and member codes using the DHS provided formula.

### **3.2 Dependent Variables**

From 2003 to 2023 the world faced two fundamentally different global economic crises. One originated in the financial sector, while the other stemmed from a virus posing a tangible threat to human life. Despite their differences, both had profound economic impacts. Figure 1 clearly illustrates the effects of both the 2008 financial crisis and COVID-19 pandemic, showing severe downward spikes across each macroeconomic indicator. It plots the annual year-end variations in Dutch real GDP per capita, its growth rate, and the returns of the Amsterdam Exchange Index (AEX). The figure highlights three key periods: a period of steady growth up to 2008, a significant recession during the 2008 financial crisis, followed by a relatively stable recovery that continued until the downturn in 2020 due to the COVID-19 pandemic. Hence, this study aims to determine the differences, if any, between household risk propensity between the periods of 'calm' preceding each event and the periods that followed.

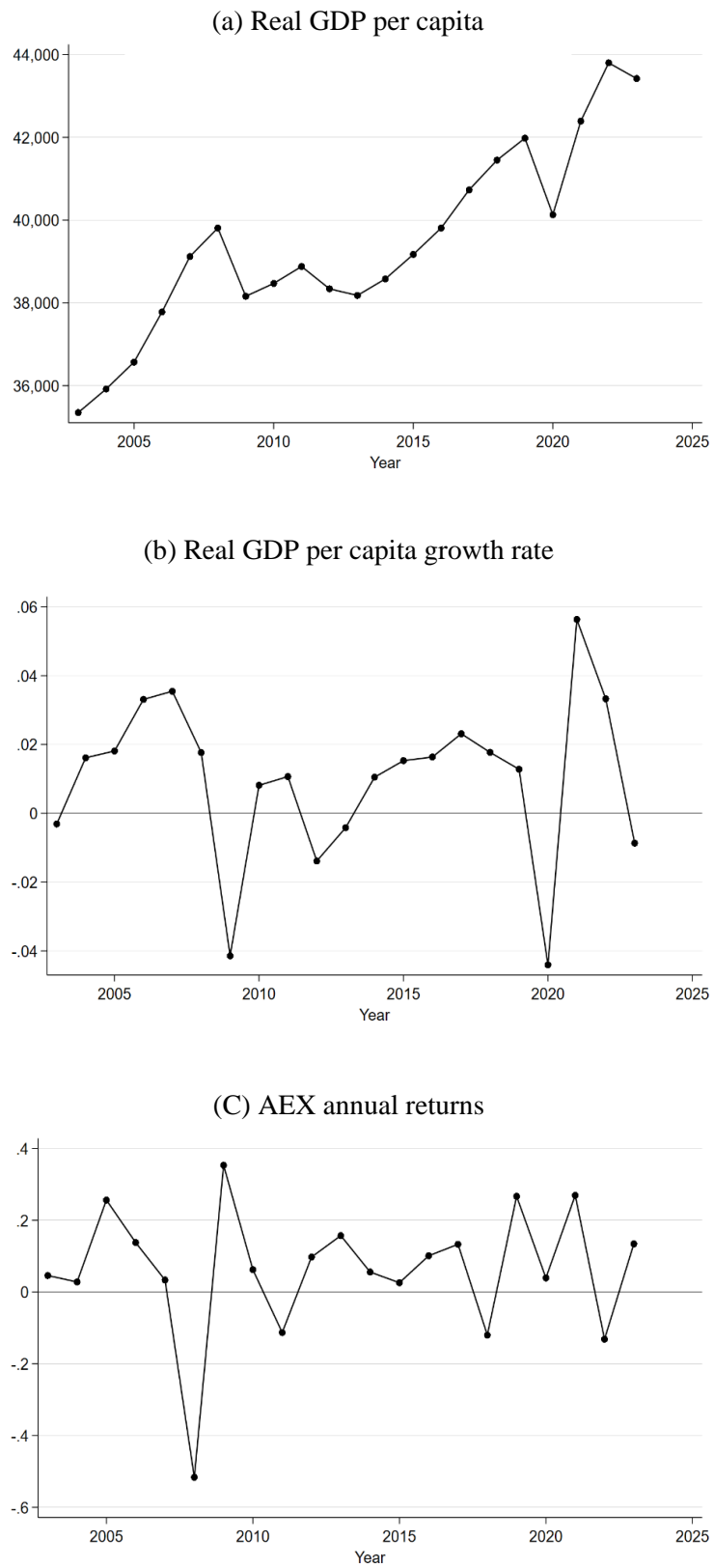


Figure 1 Macroeconomic indicators. (a) Real GDP per capita (€). (b) Real GDP per capita growth rate (%). (c) AEX annual returns (%).

Like Guiso et al. (2018), risk preferences will be analysed both qualitatively and quantitatively, however, contrarily this investigation uses real investment data, revealed from household portfolio allocation, as opposed to an experimental setting for the quantitative analysis whilst assessing the responses to several risk-based statements for the qualitative study. Table 1 gives an overview of the qualitative data set, consisting of six self-assessed statements covering different features of financial risk preference (SPAAR1-SPAAR6). These are the only consistently asked risk-based statements in the survey from pre 2008 to 2023, hence they are used for the entire analysis. The responses range from 1 to 7 with 7 indicating ‘totally agree’ and 1 ‘totally disagree.’ For 2021-2023 there exists a more generalised statement on risk preferences (PREF2), however, the statement was not included in the questionnaire pre-pandemic, limiting its usefulness.

Table 1 Self-assessed statements on risk preference

Code	Statement
SPAAR1	‘I think it is more important to have safe investments and guaranteed returns, than to take a risk to have a chance to get the highest possible returns’
SPAAR2	‘I would never consider investments in shares because I find this too risky’
SPAAR3	‘If I think an investment will be profitable, I am prepared to borrow money to make this investment’
SPAAR4	‘I want to be certain that my investments are safe’
SPAAR5	‘I get more and more convinced that I should take greater financial risks to improve my financial position’
SPAAR6	‘I am prepared to take the risk to lose money, when there is also a chance to gain money’

*Note.* Answers to SPAAR\_1 to SPAAR\_6 are measured on a Likert scale from 1 (‘totally disagree’) to 7(‘totally agree’). Due to differing directions in the phrasing of statements, the responses to SPAAR\_1, SPAAR\_2, and SPAAR\_4 have been reversed so that a higher value indicates higher risk propensity across all statements.

Again following in the footsteps of Bucciol and Miniaci (2018), this research reverses the responses to SPAAR1, 2, and 4 due to their direction of interpretation. A higher level of agreement with these three statements denotes reduced willingness to embrace risk. Hence, the responses have been reversed such that a higher value implies increased risk propensity across all statements.

Whilst the six statements offer a comprehensive view of financial risk preferences, Bucciol and Miniaci (2018) identify several ambiguity issues in their formulation. The pair isolate SPAAR5 as a statement which may elucidate ‘changes in opinions rather than the level of risk propensity.’ This is because the statement captures an evolving mindset, reflecting a growing conviction rather than a static attitude towards risk. Despite this, such statements have been found to have the most explanatory power

in relation to other more complicated hypothetical questions (Kapetyn & Teppa, 2011). Hence, for all the potential issues that may arise from using these statements, they remain valuable tools for understanding financial risk preferences.

Figure 2 plots the time-series of the average responses across all years for each of the six statements, alongside a new combined variable calculated as the mean of all six statements. Panels (a)-(g) exhibit little consistency with some presenting a drop in ‘riskiness’ around the 2008 financial crisis whilst others remain relatively unaffected. Interestingly, the effect of the COVID-19 pandemic seems to be more uniform across statements with the majority seeing a slight reduction in the average score given, denoting a reduction in individuals’ risk propensities. In general, there is obvious heterogeneity in the responses across the different measures. While SPAAR1, 2, 3, and 5 show noticeable declines during the 2008 financial crisis and the COVID-19 pandemic, SPAAR4 and 6 exhibit less pronounced changes. This heterogeneity underscores the importance of analysing a range of risk measures to fully capture the diverse dynamics of risk propensity across different contexts and periods.

For the quantitative analysis, risk propensity is measured through individuals’ share of risky assets they hold in their respective portfolios. The new variable ‘risky share’ is calculated as follows:

$$\frac{\textit{value of risky assets}}{\textit{total portfolio value}} * 100$$

Assets are categorised per Bucciol and Miniaci (2018), with risky assets composed of stocks, options, and (mutual funds, bonds, real estate & private business equity). The primary analysis (riskyshare1) focuses on financial assets, which real estate and private business equity are not usually considered to be. Furthermore, the data on mutual fund equity and bonds is ambiguous in that it is not disclosed what the primary assets the mutual funds invest in, or the type of bonds held. As such, mutual funds which invest primarily in sovereign debt cannot be considered risky however, one that is highly geared towards stocks can be. This is much the same with the bond figures; it is unclear if the bonds held are sovereign (not risky) or commercial paper (risky). Hence, whilst they are financial assets, mutual fund and bond figures are not considered in the primary analysis but are included in subsequent analyses to test if the results are more widely applicable. Akin to mutual funds and bonds, real estate and private business equity are excluded from riskyshare1 but are included in the calculation of a broader definition of the risky asset to total portfolio value ratio. Non-risky assets i.e. *total portfolio value* – *value of risky assets*, are defined as cash under which the total value of checking accounts, savings accounts, deposits, and insurance policies are taken as components. Table 1A gives an overview of the four definitions of risky share used in this analysis.



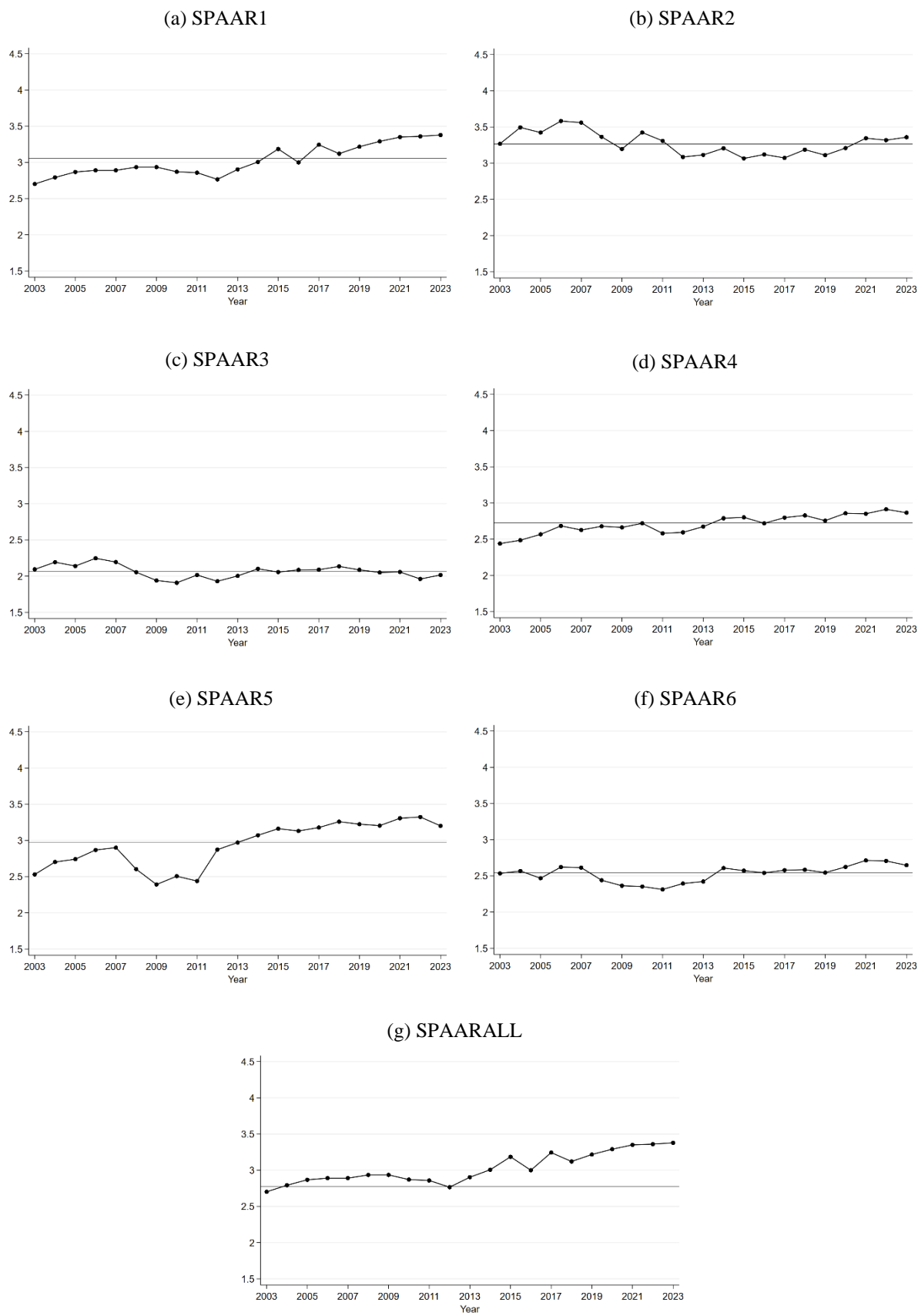


Figure 2 Time series of self-assessed statements on financial risk propensity 2003-2023.

Note. The horizontal line spanning the graph is the mean of the variable.

Panels (a) to (d) in Figure 3 display the time series of the average values for the four definitions of risky share. The figure gives a first indication of the differences between the 2008 financial crisis and the COVID-19 pandemic. The two variables which exclude real estate and private business equity (riskyshare1 and 3) remain relatively stable around the two crises with only a minor dip surrounding the 2008 crisis and almost no movement around the pandemic. In contrast, riskyshare2 shows a significant decline during the 2008 financial crisis, reflecting the impact of the housing market collapse, followed by a gradual recovery. Interestingly, riskyshare4 which also contains real estate information does not exhibit such a large fluctuation around 2008 implying that the additional components in riskyshare4 compared with riskyshare2 may offset the real estate related decrease seen in panel (b). An explanation for this may be in the rebalancing of portfolios post crisis where individuals moved funds away from ‘more risky’ risky assets such as shares and options into ‘less risky’ risky assets such as mutual funds and bonds. This can be inferred from panels (a) and (c) where risky shares decrease and increase respectively in 2008. During the COVID-19 pandemic, there is a notable but less severe dip, likely due to the initial uncertainty and subsequent stabilisation of the real estate market. In fact, in 2023 there is sharp uptick in both riskyshare2 and 4, perhaps reflecting the increase in wealth experienced by many throughout the pandemic as real estate prices rose (Allen & Rebillard, 2021).

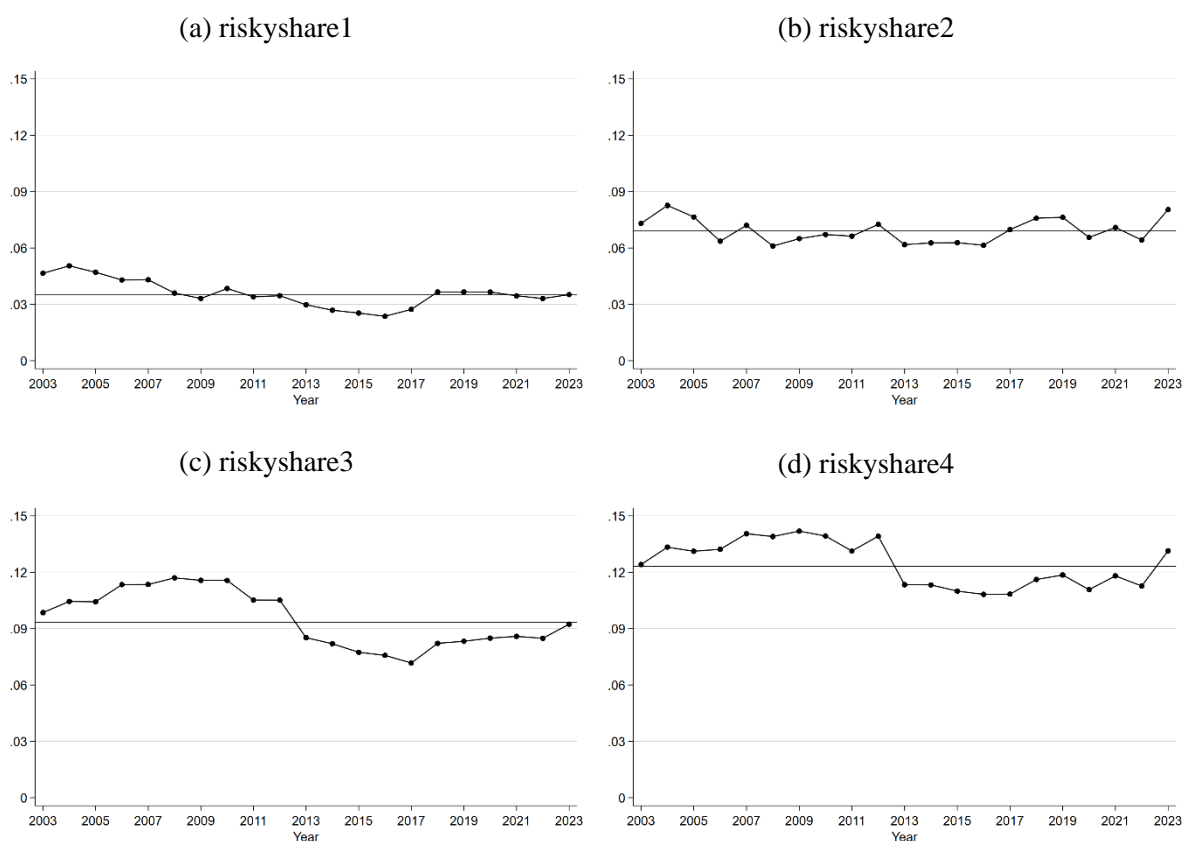


Figure 3 Time series of annual averages of four definitions of risky share 2003-2023.

Note. The horizontal line spanning the graph is the mean of the variable.

Table A2 presents the correlations between the qualitative (SPAAR statements) and quantitative (risky share figures) measures of risk aversion. It reveals low to moderate correlations, with values ranging from 0.01 to 0.37. Interestingly SPAAR2 and SPAAR6 are the most correlated with the risky share figures, with correlation values up to 0.37 and 0.27, respectively. This suggests that these specific qualitative measures, which directly address the willingness to invest in shares and the preparedness to take financial risks for potential gains, align more closely with actual investment behaviour. However, the overall low correlations indicate that qualitative measures of risk aversion, influenced by subjective factors and personal beliefs, capture different dimensions of individuals' risk profiles compared to the quantitative measures, which reflect actual risk-taking behaviour. This divergence highlights the importance of employing both qualitative and quantitative assessments for a comprehensive understanding of risk aversion across time.

### **3.3 Descriptive Statistics**

Table 2 shows summary statistics on the independent and control variables for both periods analysed, i.e., self-assessed risk measures (SPAAR1–SPAAR6) and risky share, control variables on socio-demographic characteristics (age, partner, household size, education level), financial sophistication (financial knowledge, use of professional or media advice), and financial status (net total income, total debt, and wealth). For a more natural interpretation general health figures have been reversed i.e. the higher the number the better the self-reported health. Between the two periods the sample population has on average become less healthy, older, and more educated. Furthermore, for comparability across years all monetary figures have been adjusted for inflation using the Dutch CPI index with 2015 as the base year.

Table 2 Descriptive statistics

<i>Panel A: 2003-2011</i>					
<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Self-assessed risk</i>					
SPAAR1	5,821	2.781	1.662	1	7
SPAAR2	5,821	3.488	2.048	1	7
SPAAR3	5,821	2.128	1.480	1	7
SPAAR4	5,821	2.551	1.353	1	7
SPAAR5	5,821	2.705	1.601	1	7
SPAAR6	5,821	2.568	1.519	1	7
SPAARALL	5,821	2.704	1.031	1	7
<i>Share of risky assets</i>					
riskyshare1(%)	5,820	4.348	14.406	0	100
riskyshare2(%)	5,820	7.245	20.474	0	100
riskyshare3(%)	5,821	11.824	23.333	0	100
riskyshare4(%)	5,821	14.369	26.517	0	100
<i>Control variables</i>					
Age	5,821	51.667	14.842	16	92
Age <sup>2</sup>	5,821	2,889.710	1,517.930	256	8,464
University educated	5,821	0.133	0.339	0	1
Number of people in household	5,821	2.558	1.234	1	8
Number of kids in household	5,821	0.723	1.073	0	6
With a partner	5,821	0.819	0.385	0	1
Head of household	5,821	0.678	0.467	0	1
Height(cm)	5,821	175.715	9.027	148	206
Weight(kg)	5,821	79.622	15.294	35	194
Self-assessed general health	5,821	3.908	0.651	1	5
Suffering from long illness	5,821	0.242	0.428	0	1
Smoke	5,821	0.142	0.349	0	1
Net total income (thousand €)	5,821	29.677	22.055	0	735.841
Total debt (thousand €)	5,821	93.279	109.427	0	1,560.763
Wealth (thousand €)	5,821	48.575	138.537	0	4,493.011
Financial knowledge	5,821	2.140	0.722	1	4
With professional advice	5,821	0.275	0.446	0	1
With media advice	5,821	0.020	0.142	0	1

*Panel B: 2015-2023*

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Self-assessed risk</i>					
SPAAR1	7,189	3.053	1.893	1	7
SPAAR2	7,189	3.326	2.133	1	7
SPAAR3	7,189	2.011	1.487	1	7
SPAAR4	7,189	2.700	1.519	1	7
SPAAR5	7,189	3.328	1.761	1	7
SPAAR6	7,189	2.749	1.612	1	7
<i>Share of risky assets</i>					
riskyshare1(%)	7,187	3.164	12.132	0	100
riskyshare2(%)	7,187	6.774	20.483	0	100
riskyshare3(%)	7,189	8.625	20.530	0	100
riskyshare4(%)	7,189	11.743	25.241	0	100
<i>Control variables</i>					
Age	7,189	55.312	15.674	16	92
Age <sup>2</sup>	7,189	3,305.082	1,720.343	256	8,464
University educated	7,189	0.170	0.376	0	1
Number of people in household	7,189	2.365	1.181	1	8
Number of kids in household	7,189	0.569	0.976	0	6
With a partner	7,189	0.763	0.425	0	1
Head of household	7,189	0.712	0.453	0	1
Height(cm)	7,189	176.147	9.330	140	209
Weight(kg)	7,189	81.094	15.287	42	190
Self-assessed general health	7,189	3.890	0.682	1	5
Suffering from long illness	7,189	0.244	0.430	0	1
Smoke	7,189	0.080	0.272	0	1
Net total income (thousand €)	7,189	29.201	21.454	0	579.826
Total debt (thousand €)	7,189	109.281	117.748	0	2,000
Wealth (thousand €)	7,189	51.213	122.394	0	2,808.227
Financial knowledge	7,189	2.349	0.750	1	4
With professional advice	7,189	0.248	0.432	0	1
With media advice	7,189	0.014	0.119	0	1

## CHAPTER 4 Method

### 4.1 Model Specification

Following Jung and Treibach's (2015) methodology of assessing variance in self-reported risk aversion (SRRA) this investigation runs several fixed effects regressions. Both the SRRA and risky share are used as dependent variables with various factors known to affect risk aversion such as wealth, age and education levels included as control variables. Dummies are added for each of the years with 2007 being chosen as the year omitted due to multicollinearity. Using 2007 as the baseline year enables the measurement of changes in risk aversion relative to a period just before the crisis, providing a clearer before-and-after comparison. As such, the results will indicate the average differences between 2007 and the year dummies remaining in the regression. Using entity fixed effects controls for latent time-invariant characteristics, such as individual personality traits, that may bias the final results. The regression is modelled as follows:

$$SRRA_{it} = \beta_1\gamma_t + \beta_2\lambda_{it} + \alpha_i + \varepsilon_{it}$$

Whereby  $\gamma_t$  is a vector of year dummies where 1 denotes the specified year in comparison to 2007,  $\lambda_{it}$  is a vector of control variables,  $\alpha_i$  is the fixed effect for entity  $i$ , and  $\varepsilon_{it}$  is the error term. The difference between 2007 and the other years is denoted by  $\beta_{1t}$ . For the quantitative analysis, the methodology is much the same, however, with risk propensity now being measured through individuals' share of risky assets they hold in their respective portfolios. The notation is equivalent to the above model. Hence, the following model specification:

$$riskyshare_{it} = \beta_1\gamma_t + \beta_2\lambda_{it} + \alpha_i + \varepsilon_{it}$$

By incorporating control variables and fixed effects, the model aims to isolate the impacts the 2008 financial crisis and COVID-19 pandemic had on household risk aversion. Additionally, robust standard errors are clustered at the household level to account for potential heteroskedasticity and autocorrelation within households over time. This approach is used as the data might exhibit household-level correlations since members of the same household are likely to have shared characteristics and face similar economic conditions. By clustering standard errors at the household level, this analysis adjusts for the non-independence of observations within households, ensuring that the standard errors are not underestimated, allowing for sound statistical inference. This method acknowledges that household members often influence each other's financial decisions and behaviours, leading to the possibility of correlated error terms.

## 4.2 Data Cleaning and Transformation

The DHS dataset contains figures reported by both household heads and their respective partners. To ensure the data analysis accurately compares households rather than individuals, the data for households with more than one adult reporting financial figures needs to be aggregated. Without this aggregation, the analysis would risk comparing individual figures (from households with two reporting individuals) to household figures (from households with only one reporting individual), leading to inconsistent comparisons. According to the DHS survey guidelines, household heads report both their own assets and joint assets, while partners report only their personal assets. This study assumes that individuals followed these guidelines discounting the probability of double counting when aggregating figures. New variables were created to represent the sum of financial assets for each household, for example a new variable for the sum of shares held between two adults in the same household would contain the value of shares both individuals held in that particular year. This is done for all financial assets as well as real estate and private business equity. Thus, after aggregation, each individual's data reflects the total household assets, not just their own, providing a more accurate representation of the household's financial status.

To ensure the dataset is suitable for robust analysis, several steps were taken to clean and transform the data. Initially, all observations with negative values for checking accounts and net income are excluded to avoid interpretation complexities. Furthermore, implausible values for height and weight, specifically those under 100 cm or over 210 cm for height and less than 30 kg or over 195 kg for weight, were replaced with missing values to maintain data integrity. No imputation is performed; instead, analyses are conducted on the available data after these exclusions.

For certain variables such as income, wealth, and total debt there exist outliers which greatly influence the output of the regressions. Resultantly, these three variables are natural log transformed to limit the impact outliers have. Hence, the corresponding coefficients can be interpreted as percentage changes i.e. a 1% change in the independent variable results in an average  $x$  % change in the dependent variable. Additionally, the risky share variables are multiplied by 100 in order that the coefficients are represented in percentages. For example, a coefficient of 0.56 for  $(\ln)\text{wealth}$  denotes that every 1% increase in wealth corresponds to an average 0.56% increase in the share of risky assets held.

## 4.3 Testing the Hypotheses

The first three hypotheses can be tested using four key regressions: SRRAs regressions for the periods 2003-2011 and 2015-2023, and risky share regressions for these same periods. However, the remaining hypotheses necessitate subsample analyses to capture the differential effects across various segments of the population. Specifically, testing these hypotheses requires the division of the sample into wealthier and less wealthy households. The initial two SRRAs regressions are consequently repeated with the wealthier subsample consisting of those above and including the 75<sup>th</sup> percentile of  $(\ln)\text{wealth}$

for that period with the least wealthy considered to be those below and including the 25<sup>th</sup> percentile of (ln)wealth for the same period. Finally, interaction terms are added into the original two SRRA regressions to determine if wealthier households reacted differently to both crises relative to the least wealthy. The year coefficients are plotted giving a visual representation of fluctuations in household risk aversion across both the financial crisis and pandemic, with individual values added to the plots for statistical significance interpretations.

#### **4.4 Attrition Test**

Attrition is a common issue in longitudinal studies and can lead to biased estimates if not properly addressed. Participants may leave or join the study due to factors such as death, reaching the minimum required age, or other unknown reasons, however, this only becomes an issue if the attrition is systematic. That is, if the characteristics of those who drop out of the study differ significantly from those who remain, it can introduce bias into the study's findings. Theoretically, the sample could contain 9 annual observations for each household in each period analysed. In reality, there is an average of 5.85 observations per household between 2003-2011 and 6.1 between 2015-2023. Bucciol and Miniaci (2018) include an attrition dummy variable in their model specification, which is set to 1 if an observation is not present in the subsequent year and 0 otherwise. Significant coefficients suggest that attrition may be systematically related to the dependent variables, indicating potential bias in the estimates due to the non-random dropout of participants. To determine if this is an issue the benchmark analyses of Tables A4 and A6 are repeated with an attrition dummy. The attrition coefficients, visible in tables A14 and A15, are never significantly different from zero, hence, it is likely that attrition does not introduce bias into the analysis results.



## **CHAPTER 5 Results & Discussion**

### **5.1 Outline**

In this chapter, fixed-effects regressions are run for both the periods surrounding the 2008 financial crisis and COVID-19 pandemic. The aim is to determine the impact both events had on household risk aversion. The chapter is structured to first present the results of the SRRA and risky share regressions for the 2008 financial crisis. These results are discussed in detail, highlighting key trends and significant findings. Subsequently, the same analyses are performed for the COVID-19 pandemic period, with a thorough discussion of the outcomes. Following the individual analyses, the results from both periods are compared to uncover potential similarities and differences in how households responded to both events. Finally, hypotheses 4-6 are addressed, requiring the analysis of wealthy and not wealthy subsamples.

Figures 4-7 display time series plots of the coefficient values for year dummy variables resulting from the fixed-effects regressions, of which all values are visible in tables A4-A7. To correctly interpret these figures, it is essential to understand that the coefficients denote the average differences in the dependent variable for each year, relative to the baseline year. For example, the value of 0.152 in 2003 of panel (a), figure 4, indicates that the responses to SPAAR1 were on average 0.152 points higher in 2003 than in 2007, controlling for other factors in the model. The significance of the figures determines whether these differences are statistically meaningful, with more stars indicating a higher level of confidence that the observed changes are not due to random variation. For the financial crisis and pandemic, the baseline years remain 2007 and 2019 respectively. Consequently, coefficients are comparable to one another.

One very important consideration is that of pre-trends and how these may affect the interpretation of the figures in the following section. Pre-trends refer to the patterns or trends in the data that existed before the events under study, in this case the 2008 financial crisis and the COVID-19 pandemic. Understanding these pre-existing trends can help distinguish between changes that are attributable to these crises and those that are part of a longer-term trajectory. Resultantly, a linear trend calculated from the pre-crisis coefficients are included in each plot. It is important to note that the interpretations in this chapter are not causal; rather, they highlight a correlation between the crises and risk aversion.

### **5.2 The 2008 Financial Crisis**

#### **5.2.1 SRRA Analysis**

Panels (a) to (g) of Figure 4 display the year dummy coefficients from the fixed-effects regressions for the period 2003-2011, using the self-reported risk aversion statements (SPAAR1-SPAAR6) as dependent variables. Given the nature of the survey, where individuals fill out their

responses between a period of 6-8 months, the 2008 figures may not fully encompass the climax of the financial crisis as the results were collected between February and September that year. As a result, the 2009 coefficients, the data behind which was collected between February and December, are considered to be the more accurate reflection of the peak impact of the crisis on household risk aversion. This section is concerned with testing the following hypothesis:

H1: Risk aversion increased following the 2008 financial crisis.

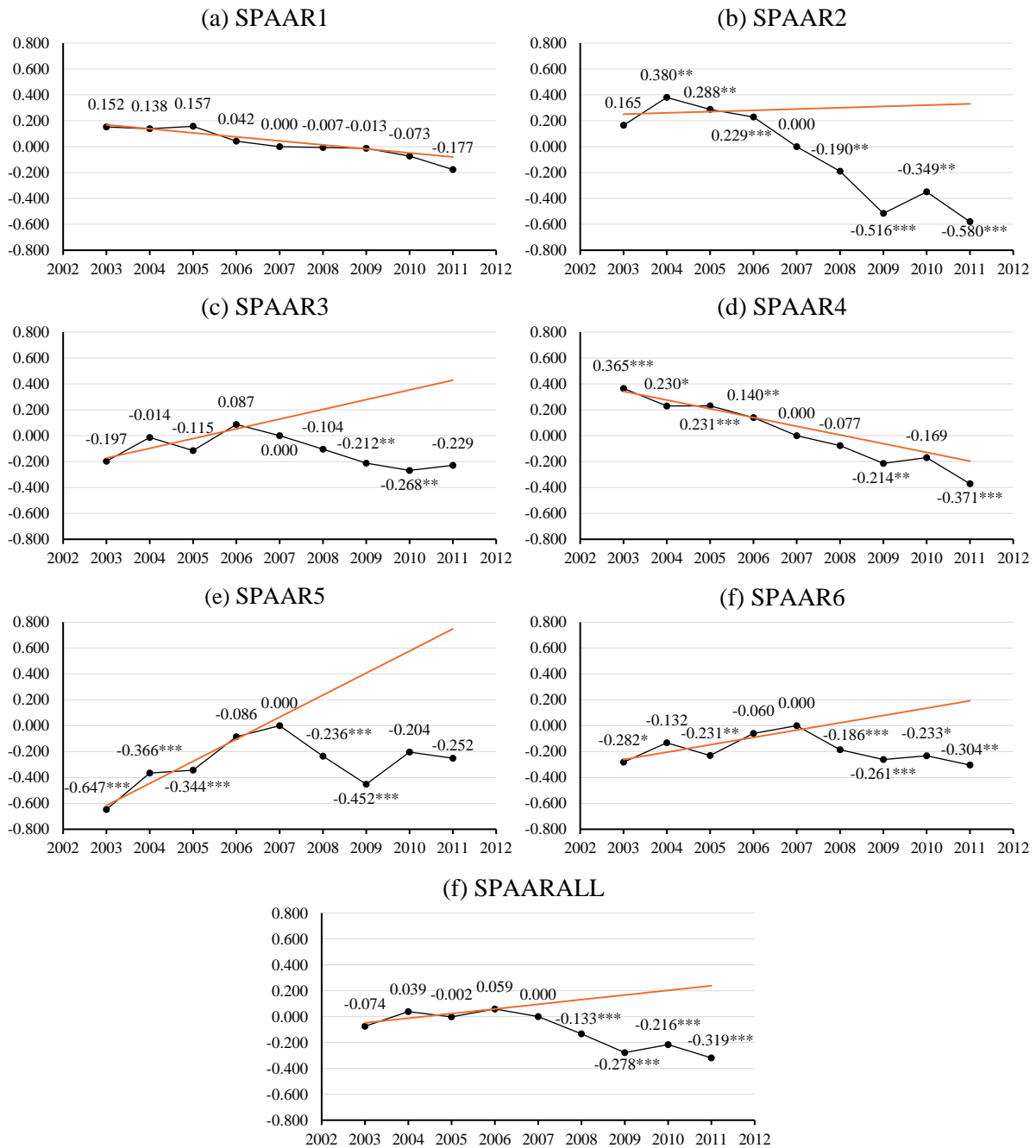


Figure 4 Coefficients across time for the qualitative analysis, 2003-2011  
 Note. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . The orange line is a linear trend calculated using the 4 years preceding 2007.

Despite significant heterogeneity in year dummy coefficients across statements before 2007, all of the graphs in figure 4 exhibit a consistent pattern of lower average responses to the SPAAR statements compared to 2007 following the 2008 financial crisis. For example, in 2009, panel (b), the average response to SPAAR2 drops significantly by 0.516 points relative to 2007, demonstrating a marked rise in risk aversion. There are similar statistically significant downward spikes across the majority of the remaining plots. The 2009 coefficients are almost all significant: they differ from zero at least at the 5% significance level. Following the downward spike in 2009, the average responses to the SPAAR statements increased slightly in 2010, indicating a temporary recovery in risk tolerance. However, this was followed by another decrease in 2011. The majority of the plots show post 2008 coefficients below their respective trendlines highlighting that their lower values are unlikely to be attributable to any preceding trends. The negative coefficients in these years indicate that the impact of the crisis on household risk preferences persisted beyond the immediate aftermath. This is the first indication that household risk tolerance fell after the 2008 financial crisis.

While not all graphs follow the exact same pattern, the consensus across the majority of the SPAAR measures is that households exhibited elevated levels of risk aversion during this period. The slight nuances in the patterns across different SPAAR statements underscores the complexity of risk preferences. For instance, SPAAR2, which measures preferences to investing in shares, shows a more significant drop in 2009 compared to the other statements, highlighting a particular reluctance towards stock investments during the crisis. This could in part be due to the highly visible impact of the stock market crash, which likely heightened fear and uncertainty regarding equity investments. In contrast, SPAAR1 and SPAAR4, which focus on general investment safety and guaranteed returns, exhibit smaller fluctuations, suggesting that while overall risk aversion increased, the intensity varied depending on the specific financial behaviour being measured.

Therefore, it is important to remember the wording of each statement to understand the specific facets of risk aversion being measured. The SPAAR statements measure different dimensions of risk aversion, ranging from willingness to invest in risky financial assets to willingness to take on debt. The significant drops in coefficients in the years post financial crisis indicate that households became more cautious across different risk dimensions. This minimises the possibility that the findings are influenced by a singular factor or specific context, such as a particular market's performance. Instead, it strengthens the interpretation that overall risk preferences genuinely decreased. By capturing various aspects of risk aversion, the analysis provides a more robust and comprehensive view of how the financial crisis impacted household financial behaviour.

## 5.2.2 Risky Share Analysis

For the following section, it is important to consider that the financial figures reported for a certain year are actually the figures at the end of the previous year. Hence, when analysing the coefficient for 2009, the analysis uses year-end figures for 2008. This timing detail underscores that the observed changes in 2009 coefficients capture the immediate aftermath of the 2008 financial turmoil

As shown in Figure 5, the quantitative analysis of risky asset shares (panels (a) to (d)) illustrates comparable trends. For example, in panel (a), the percentage of risky assets held (riskyshare1) decreased significantly from 2007 onwards, with a statistically significant sharp decline of -2.410% in 2009 compared to 2007. Similar patterns are observed across the other risky share measures with the ratio of risky assets to total assets invariably decreasing. These drops suggest that households reduced their holdings in risky assets during and after the crisis, aligning with the increased risk aversion suggested by the SPAAR responses. However, considering the downward trend present across all measures before 2007, the decreasing coefficients after the crisis are not significantly different from the pre-crisis trend. Therefore, it is essential to acknowledge the already existing downward trajectory in the years preceding 2007. This pre-crisis trend indicates that households may have been progressively moving away from risky assets even before the crisis fully unfolded. However, riskyshare1 is the only variable where the decreases post crisis are statistically significant. As such, it is the only one that can be interpreted with any degree of confidence to reflect a shift in household investment behaviour. It suggests that there was

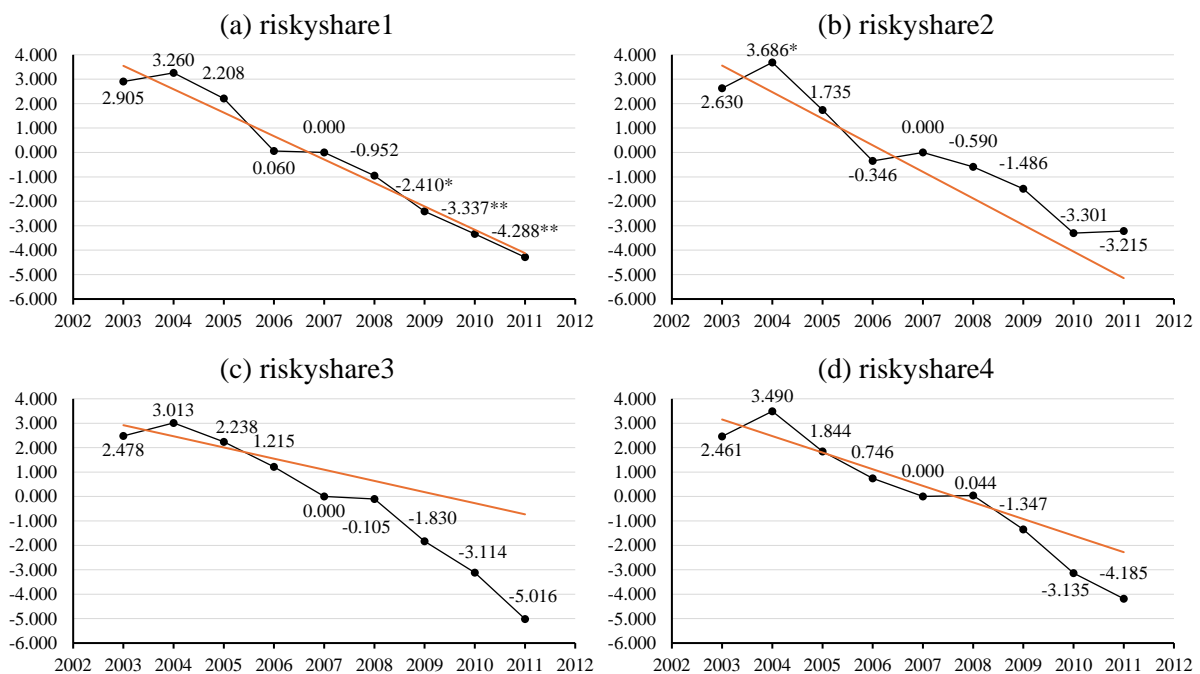


Figure 5 Coefficients across time for the quantitative analysis, 2003-2011

Note. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . The orange line is a linear trend calculated using the 4 years preceding 2007.

no significant acceleration in household risk aversion increases after the crisis peak and that the general trend of decreasing risky asset shares may not solely be attributed to the financial crisis. The other measures of risky shares (riskyshare2, riskyshare3, and riskyshare4) include a broader range of assets. The inclusion of assets such as real estate, private business equity, mutual funds, and bonds in riskyshare2, 3, and 4 diversifies the overall risk. This diversification can dilute the impact of volatility in any single asset class, making it less likely for these broader measures to show statistically significant changes.

Overall, the results from both the SPAAR and risky share regressions indicate a reduced tendency to take risks among households after the 2008 financial crisis. The SPAAR statements reveal a significant and persistent decrease in tolerance for risk, particularly in relation to equity investments, as revealed by the pronounced drop in SPAAR2 responses. This aversion is mirrored in the quantitative analysis, where riskyshare1 shows statistically significant decreases post-crisis, reflecting a substantial shift away from stocks and options. Hence, H1 which states that household risk aversion increased following the 2008 financial crisis, can be accepted, reaffirming various other studies with similar findings.

## **5.3 The COVID-19 Pandemic**

### **5.3.1 SRRA Analysis**

Figure 6 presents the year dummy coefficients from fixed-effects regressions using the SRRA statements as dependent variables for the period 2015 to 2023. This timeframe captures the onset and various phases of the pandemic, offering a comprehensive view of how households changed during the crisis. The data for 2020 were collected between March and December of that year, thus reflecting the immediate impacts of the COVID-19 pandemic. This section is concerned with testing the following hypotheses:

*H2: Risk aversion increased in the immediate aftermath of the COVID-19 pandemic.*

*H3: Risk aversion subsequently decreased following the reopening of the Dutch economy.*

Panels (a) to (g) of Figure 6 reveal mixed trends in risk aversion. SPAAR1, SPAAR3, and SPAAR4 exhibit similar patterns across the period, with steadily decreasing coefficients indicating increased risk aversion during the pandemic. Panel (a) for SPAAR1 shows a gradual decline from 2020 to 2023, suggesting that households increasingly prioritised safe investments over seeking the highest possible returns during this period. The SPAAR 4 coefficients in panel (d) exhibit a similar pattern, which is intuitive as the variable also captures household preferences for ‘safe’ investments. This is further supported by the relatively high correlation coefficient of 0.52 between SPAAR1 and SPAAR4 seen in table A3. Panel (c) for SPAAR3 also displays a gradual decrease in an unrelated facet of risk

aversion, with further drops in 2022 and 2023, suggesting that households were increasingly cautious about borrowing money for investments during the pandemic, understandable as inflation soared and interest rates rose to combat it. Whilst these graphs do hint at increased risk aversion during the pandemic, the coefficients are marginally statistically significant with p-values just below conventional thresholds. Across the three graphs there is only one value significant at 5% and SPAAR1 has no significant values at all. This suggests that while there is some evidence of heightened risk aversion, the findings are not robust enough to draw definitive conclusions.

Conversely, SPAAR2, SPAAR5, SPAAR6, and SPAARALL present evidence suggesting that risk tolerance actually increased during the pandemic. The coefficients in panel (b) for SPAAR2, which measures attitudes towards investing in shares, show no significant change in the immediate aftermath of the pandemic. This is surprising given the large drop and subsequent recovery of stock markets during this period. However, this might reflect the speed at which markets dropped and recovered i.e. markets dropped 30% between February and March of 2020 but had already recovered these losses before the end of the year. Given that the data for 2020 were collected between March and December, the stable 2020 coefficient in panel (b) may indicate that households initially rebalanced away from shares at the start of the pandemic, with subsequent flows back into shares as markets recovered towards the end of the year. From 2021 onwards, there is a marked increase in risk tolerance towards share investments, with significant positive coefficients. Similarly, SPAAR5 and SPAAR6 exhibit trends that suggest an increase in risk tolerance during the pandemic. For example, panel (e) for SPAAR5 shows a substantial increase in coefficients post-2020. SPAAR6, depicted in panel (f), also reflects rising risk tolerance, with significant positive coefficients from 2020 onwards, indicating greater willingness to risk losing money for potential gains. SPAARALL, the variable which aggregates the other six, reflects the pattern found in SPAAR2, 5, and 6, but without any statistical significance.

The opposing trends presented in figure 6 seem to contradict one another. SPAAR1, 3, and 4 suggest increasing risk aversion after 2020, a finding that seems intuitive given the high levels of uncertainty as a result of the pandemic. SPAAR2, 5, 6, and SPAARALL on the other hand indicate a decrease in risk aversion during the same period. The coefficients do not significantly deviate from their respective trend lines, suggesting that the observed changes in risk aversion post 2019 followed a pre-existing trend and cannot necessarily be attributed to the pandemic. Curiously, the direction of the trend seems to be related to the correlations between the SRRA statements and risky share variables. Higher correlations for SPAAR 2, 5, 6 and ALL measures with risky share variables suggest that these measures more accurately reflect household investment behaviour. Overall, while there are indications of increased risk aversion during the pandemic, the mixed coefficients across different SPAAR statements suggest that the impact on household risk preferences was not uniform. Hence, based on the SPAAR statement analysis neither H2 nor H3 can be accepted.

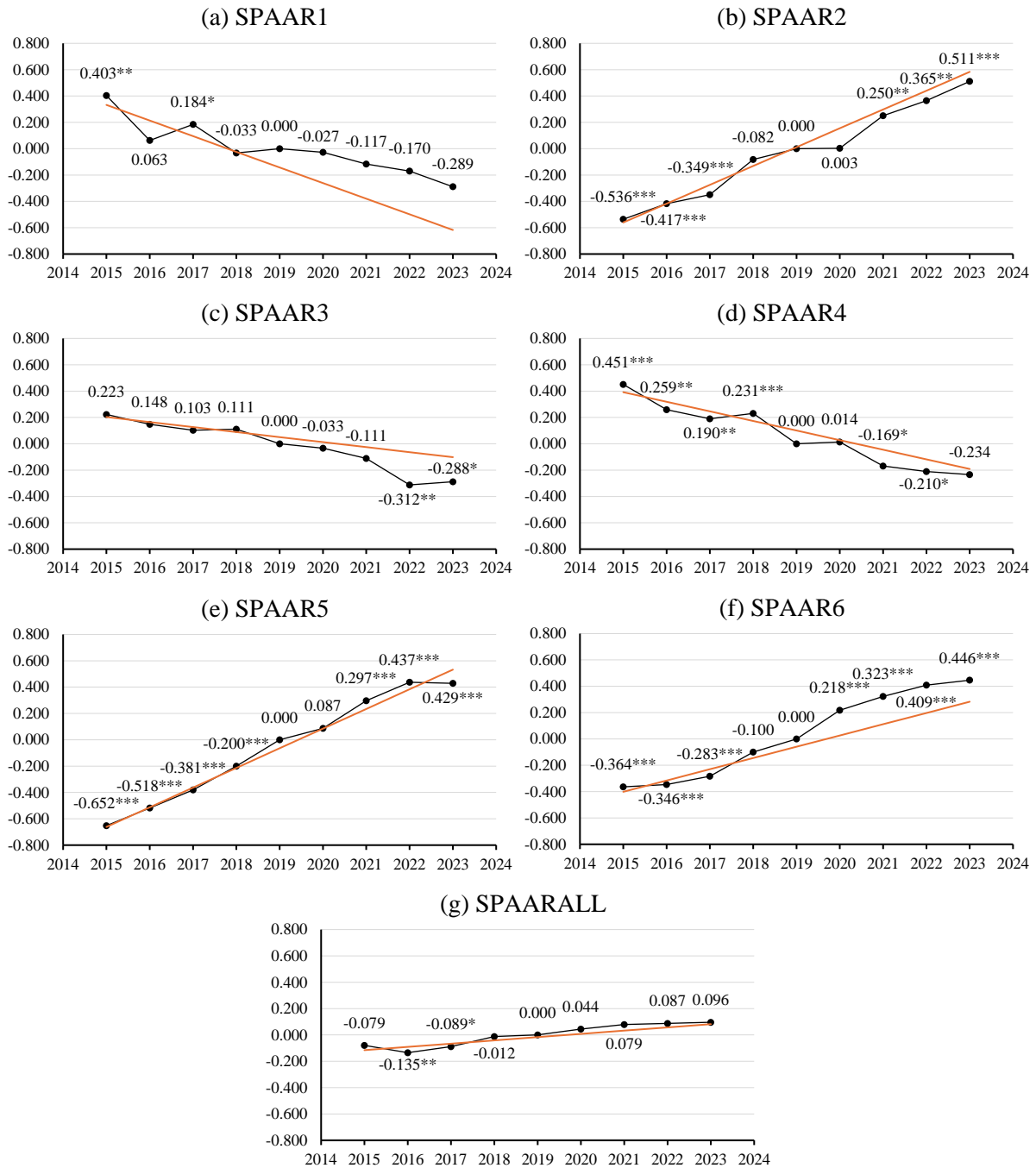


Figure 6 Coefficients across time for the qualitative analysis, 2015-2021

Note. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . The orange line is a linear trend calculated using the 4 years preceding 2007.

### 5.3.2 Risky Share Analysis

Figure 7 depicts the year dummy coefficients from the fixed-effects regressions of various measures of risky asset shares (riskyshare1 through riskyshare4) for the period 2015-2023. Similar to the SRRA regressions, the four measures of the ratio of risky assets to total assets present varied trends.

Panel (a) for riskyshare1, which includes shares and options, shows relatively stable coefficients through the pandemic period, with a slight decrease in 2020 and 2021 followed by a drop in 2022 and partial recovery in 2023. This stability may reflect a balancing act where households initially moved away from volatile assets like shares but returned as markets stabilised. Panel (b) for riskyshare2 shows a significant decline post-2020. This may have been driven by the large number of business closures resulting from the pandemic. Similar to riskyshare1 both riskyshare3 and 4 suggest increasing risk tolerance during the pandemic. However, there is only one coefficient in figure 6 which is statistically significant, only at 10% significance level at that, rendering these observations less dependable and not necessarily indicative of any true phenomena present during the pandemic. Overall, the risky share analysis surrounding the COVID-19 pandemic does not provide any clarity into the specific impact the pandemic may have had on the risk preferences of Dutch households.

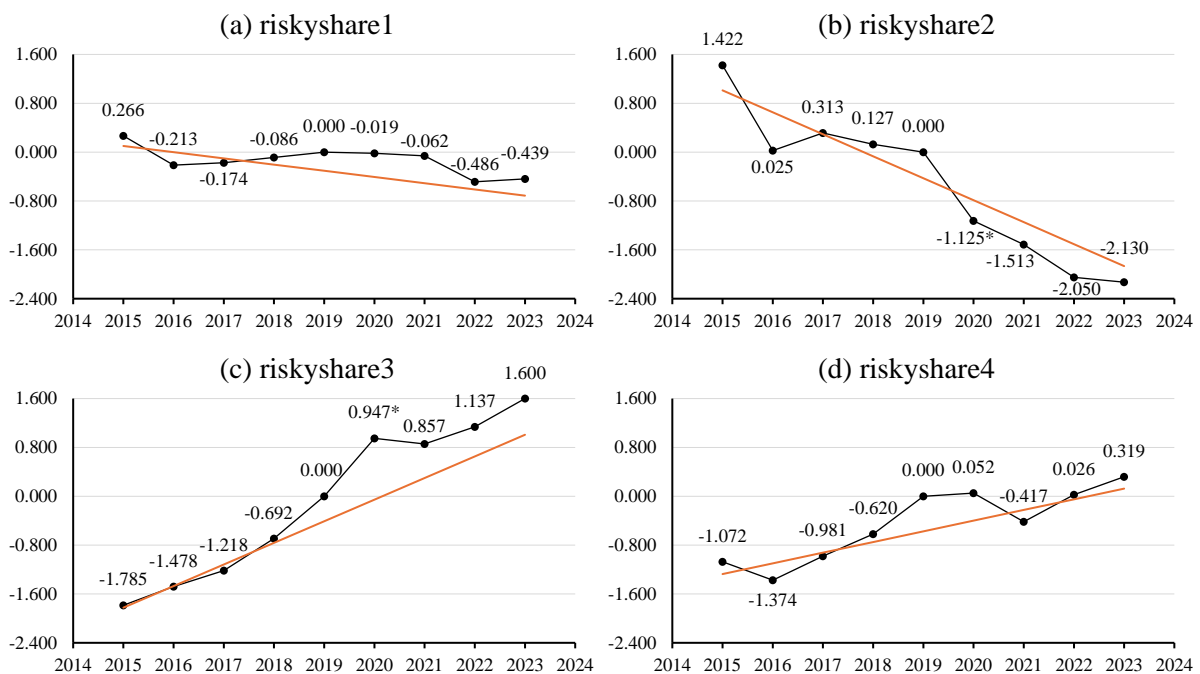


Figure 7 Coefficients across time for the quantitative analysis, 2015-2023  
 Note. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . The orange line is a linear trend calculated using the 4 years preceding 2007.

## 5.4 Comparative Analysis of the Financial Crisis and Pandemic

Studies such as Guiso et al. (2018) and Li & Liu. (2021) find that the financial crisis resulted in a significant and persistent increase in risk aversion. This is supported by the SPAAR responses, which show a marked decline in willingness to take financial risks during and after the crisis. The quantitative analysis of risky asset shares also indicates a reduced tendency to invest in volatile assets like stocks and options post-crisis, suggesting households became more cautious and prioritised safer investments. Hence, this study finds support for H1. The COVID-19 pandemic is more complex, with



evidence suggesting risk aversion both increased and decreased among households. Panels (a) to (g) of Figure 6 reveal mixed trends in risk aversion during the pandemic. While some SPAAR statements indicate increased risk aversion, others suggest a rise in risk tolerance, particularly towards the latter end of the pandemic. As a result, this study is unable to ascertain one overarching impact the COVID-19 pandemic has had on Dutch household risk preferences. The duality of the COVID-19 results may be attributed to the unique economic environment created by the pandemic, where despite a global recession, many households saw their wealth increase due to booming equities and real estate values. However, confirmation of this theory is beyond the scope of this study.

Despite both events causing a global recession and increasing uncertainty across many facets of economy, the nature of their effects on household risk aversion varied significantly. Whilst this is beyond the remit of this research, it may be interesting to explore some of the possible reasons why the findings from both events differed.

One key factor is the difference in the speed of economic recovery following each event. The recovery following the pandemic was far quicker than the 2008 financial crisis. Figure 1 shows the Dutch economy rebounding within months during the pandemic, whereas it took several years for the economy to reach pre crisis levels per capita post-2008. This rapid recovery during the pandemic may have influenced the mixed risk aversion trends observed, as households may have felt a renewed sense of financial stability sooner. Moreover, the slower recovery post-2008 likely contributed to sustained risk aversion as households faced extended periods of financial strain and market volatility.

Another significant factor is the impact of the events on household wealth. During the financial crisis, households generally saw a decline in their wealth as the prolonged downturn in both real estate and stock markets eroded financial security. However, the pandemic saw an uneven but overall increase in wealth for many households as stocks boomed and house prices rose resultant of the work from home movement. The disparity between the financial crisis and pandemic in their effects on wealth may explain the differing impacts on household risk aversion. The following section explores this theme further, aiming to understand how households in opposing wealth quartiles were affected by both the financial crisis and pandemic.

## **5.5 Impact of Events on Households from Opposing Wealth Percentiles**

To minimise the number of figures in this paper, figures 8 to 11 display the cumulative year dummies for their respective periods. The sum starts with SPAAR1 i.e. the line denoting SPAAR1 in the figures is an actual representation of the coefficients in that period. Subsequently, the SPAAR2 line constitutes the sum of coefficients from both SPAAR1 and SPAAR2. Thus, the SPAARALL line is the sum of all coefficients from all preceding regressions.

The wealthiest are those with above and including the 75<sup>th</sup> percentile of ln(wealth) with the least wealthy below and including the 25<sup>th</sup> percentile. Wealth data often have highly skewed

distributions with a small number of households holding extremely high wealth. Applying the natural logarithm transforms such a distribution into a more normal one. This aids the analysis by reducing the impact of extreme values, making the data more suitable for statistical techniques. The full set of coefficients for figures 8, 9, 10, 11, 12 and 13 can be found in tables A8, A9, A10, A11, A12, and A13 respectively. This section is concerned with the following hypotheses:

*H4: The risk tolerance of the wealthiest households was systemically different compared to the least wealthy across both the financial crisis and pandemic.*

*H5: The wealthiest in society became more risk averse following the 2008 financial crisis.*

*H6: The wealthiest in society became less risk averse following the COVID-19 pandemic.*

### 5.5.1 Impact of 2008 Financial Crisis on Households from Opposing Wealth Percentiles

Figure 8 shows the cumulative values of the year dummy coefficients for the wealthiest quartile from 2003 to 2011. The trend shows relatively stable levels of risk aversion leading up to the crisis, however this is followed by a notable decline in the years following its climax in 2008. This drop indicates that the wealthiest households experienced increased risk aversion in the aftermath of the crisis, likely due to their large holdings in both stocks and real estate which both saw large declines. The risk tolerance levels do not recover to pre-crisis levels in the three ensuing years with the average value of coefficients before and after 2007 being 0.009 and -0.289 respectively. The high number of significant coefficients underscores the shift to lower average risk aversion among the wealthiest households. This evidence supports hypothesis 5 that the wealthiest in society did indeed become more risk averse following the 2008 financial crisis.

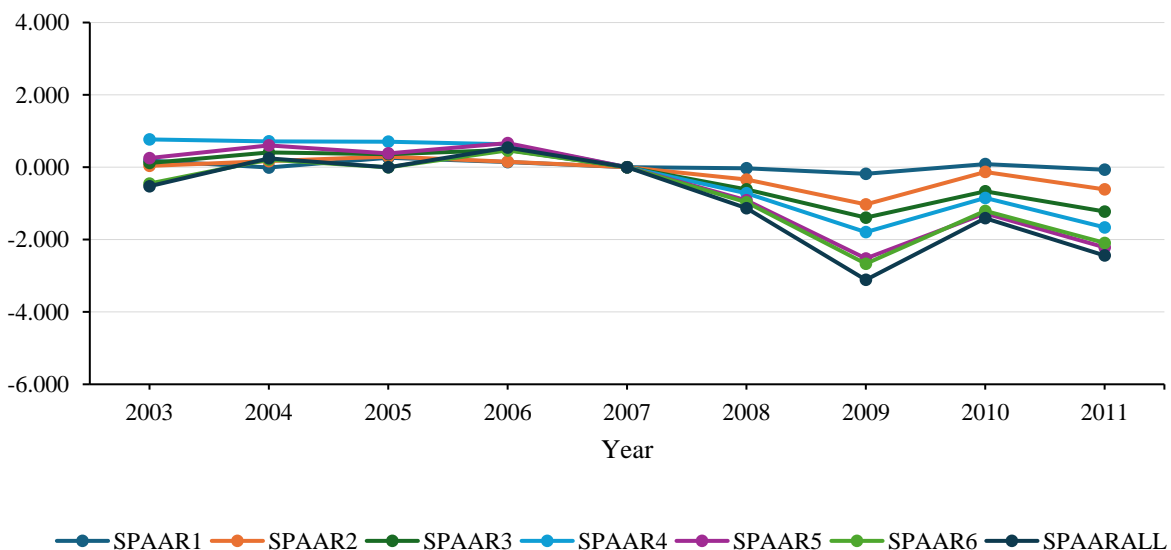


Figure 8 Cumulative values of wealthiest SRRR year coefficients, 2003-2011

Figure 9 tells a different story. The graph depicts the cumulative values of the year dummy coefficients for the least wealthy quartile from 2003 to 2011. Risk tolerance seems to have decreased among the least wealthy even before the crisis. However, unlike the wealthiest quartile, the trend continues with a consistent increase in risk aversion following the financial crisis. The coefficients demonstrate a significant decline in risk tolerance immediately after the crisis, with no notable recovery in subsequent years.

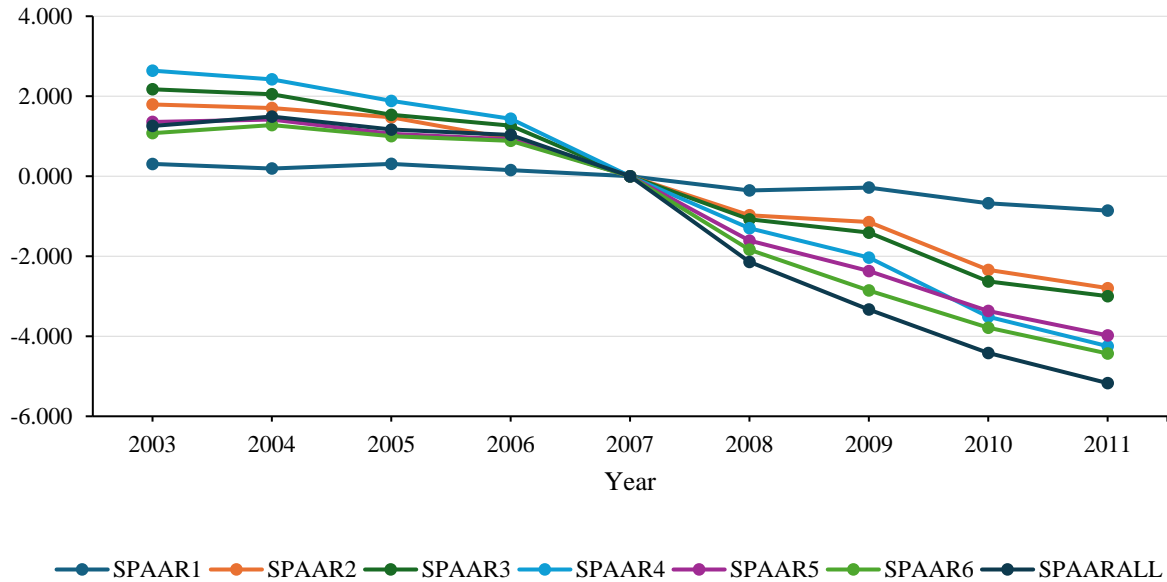


Figure 9 Cumulative values of least wealthy SRRRA year coefficients, 2003-2011

The two figures present a stark contrast of the impact of the 2008 financial crisis on households from opposite ends of the wealth spectrum. The graphs suggest that crisis impacted the risk tolerance of the least wealthy in society far more than the wealthiest. Note the two graphs have the same scale and the larger variation in the coefficients in figure 9 in comparison to figure 8. This suggests that the least wealthy households have a higher elasticity in their risk tolerance, meaning their risk preferences are more sensitive to changes in the economic environment. Furthermore, the graphs suggest that the two wealth demographics alter their risk preferences differently to one another. To test this notion further the regressions are re-run with interaction terms between year dummies and a dummy variable which takes the value 1 for the wealthiest and 0 for the least wealthy households. Figure 10 plots these coefficients for the period 2003-2011. If the plotted coefficients remained around zero over time, this would indicate that the wealthiest and least wealthy responded similarly in their risk tolerance changes. However, this is evidently not the case with a large dip in 2009 followed by a recovery in 2010. This implies that wealthier households asymmetrically altered their risk preferences relative to those least well off following the 2008 financial crisis. Despite figure 10 suggesting that this is the case, there are no consistently significant coefficients across all SPAAR statements and years. Resultantly, H4 can neither be rejected nor accepted with no evidence to prove its veracity or inaccuracy.

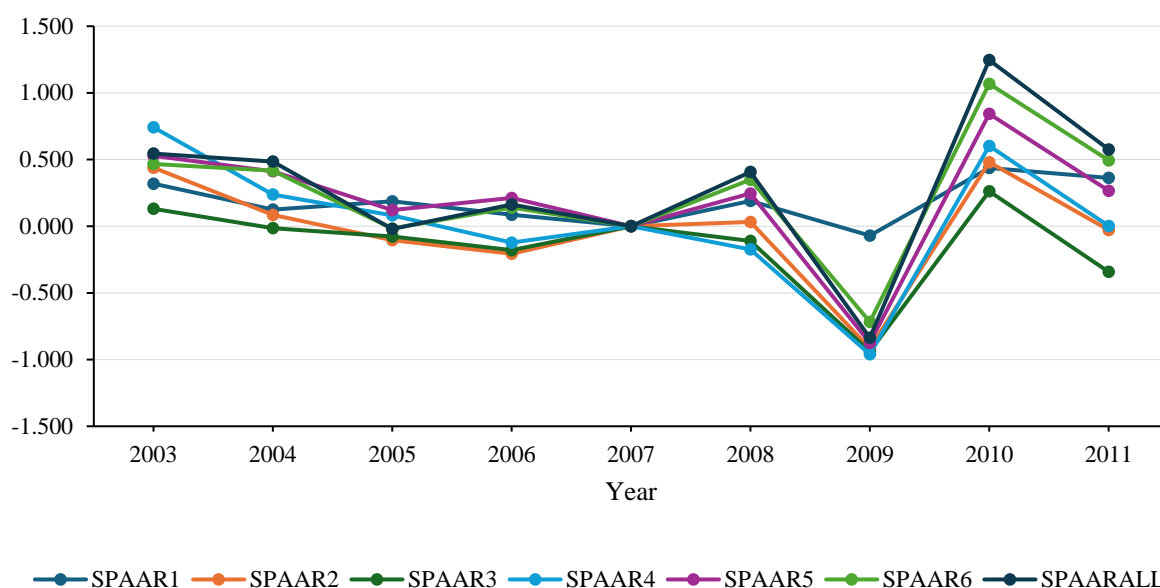


Figure 10 Cumulative values of interaction SRRA year coefficients, 2003-2011

### 5.5.2 Impact COVID-19 Pandemic on Households from Opposing Wealth Percentiles

Figure 11 shows the cumulative values of the year dummy coefficients for the wealthiest quartile from 2015 to 2023. It indicates that risk tolerance was comparably low in the years preceding the pandemic. Interestingly, risk tolerance actually increased for the wealthiest in the immediate aftermath of the pandemic onset and subsequently decreased in 2021 before recovering the following year. This is in stark contrast to the 2008 financial crisis where the immediate aftermath saw a significant decrease in risk tolerance among the wealthiest. Whilst figure 11 does suggest that the average risk tolerance post pandemic was higher than before the pandemic (-0.097 average coefficient value before and 0.036 after), the majority of the coefficients from this period are insignificant. Hence, hypothesis 6, stating that risk aversion decreased for the wealthiest after the pandemic, is only partially supported with no consistent or significant evidence across all measures and years.

Figure 12 highlights the impact of the COVID-19 pandemic on the risk tolerance of the least wealthy households. It shows a notable decline in risk tolerance over the years leading up to the pandemic, with a continued downward trend during the pandemic. Unlike the wealthiest households, which showed some recovery in risk tolerance, the least wealthy did not exhibit any significant rebound. Instead, their risk aversion deepened. These findings echo those from the 2008 financial crisis with continued decreases in risk aversion for the least wealthy households, recoveries for the wealthiest, and differences in the risk profile of the wealthiest compared to the least wealthy.

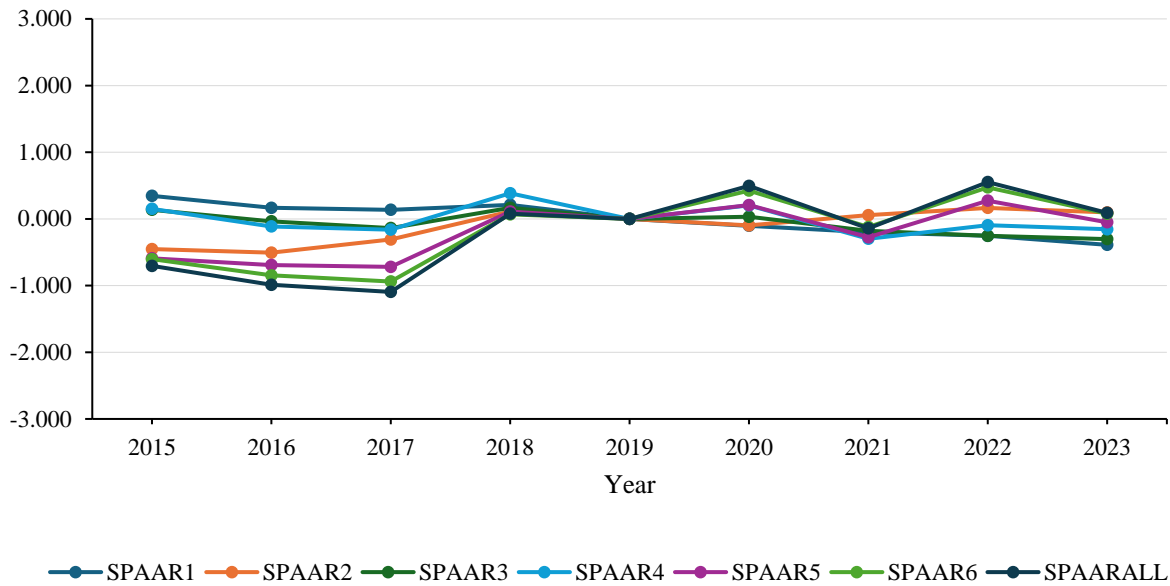


Figure 11 Cumulative values of wealthiest SRRR year coefficients, 2015-2023

Figure 13 provides a visual representation of how the risk preferences of the wealthiest households differed from the least wealthy as per their SRRR. The graph suggests support for hypothesis 4, that the wealthiest in society experienced systemically different risk preferences across both crises in comparison to the least wealthy. However, again the coefficients that make up figure 13 are primarily insignificant. Consequently, while there is an observable trend indicating systemically different risk preferences between the wealthiest and least wealthy households, the lack of statistical significance prevents the acceptance of the hypothesis.

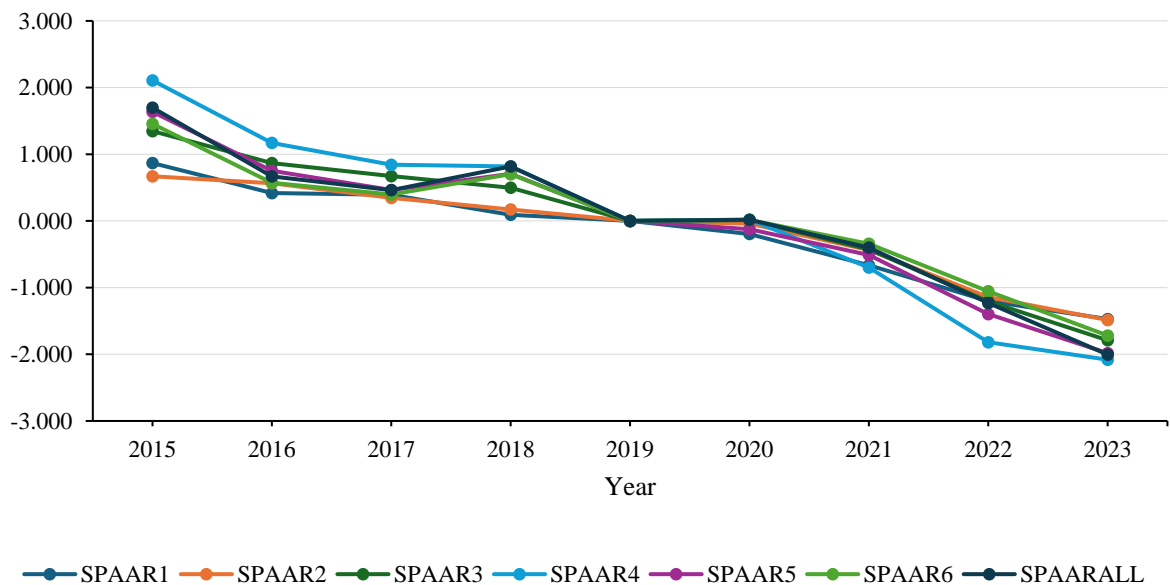


Figure 12 Cumulative values of least wealthy SRRR year coefficients, 2015-2023

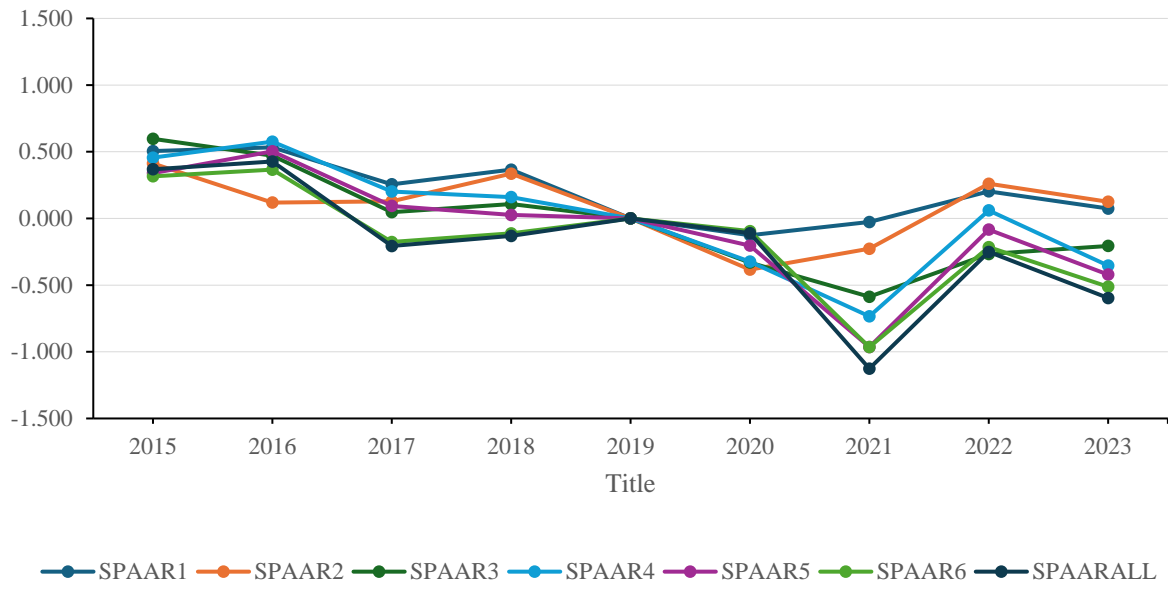


Figure 13 Cumulative values of interaction SRRA year coefficients, 2015-2023

## CHAPTER 6 Conclusion

This study has looked at how both the 2008 financial crisis and the COVID-19 pandemic affected the risk preferences of Dutch households. Previous research, all focused on the financial crisis, found that risk aversion systemically increased following the crisis, a finding that this study reaffirms. Until this study, no research had looked at the impact the COVID-19 pandemic may have had on household risk propensity, likely due to its recent nature and lack of significant post event information. However, this study used the most recent data available to try and build an image of the effects of the pandemic on risk preferences aiming to answer the following question: *What impact has COVID-19 had on the risk appetite of Dutch households and how does it compare to the 2008 financial crisis?*

Using panel data from the DNB DHS survey across 9 years around both events, fixed effects regressions with self-reported risk aversion and risky share variables as dependent variables were performed. Among various control variables incorporating socio-demographic characteristics, financial sophistication, and financial status, year dummies were included which gave a comparable indication of changes in risk preferences over time. This study finds that there was a significant and enduring increase in risk aversion among Dutch households following the 2008 financial crisis. No strong evidence was found to confirm what the impact of the COVID-19 pandemic on household risk preferences was.

The investigation into wealth disparities revealed notable differences in how households from different wealth percentiles responded to both crises. For the wealthiest households, the 2008 financial crisis resulted in an increase in risk aversion, with risk tolerance levels not recovering to pre-crisis levels within the subsequent three years. However, they did see some recovery from the initial dip in risk tolerance. This is in contrast to the least wealthy whose appetite for risk steadily decreased in the same period. Interestingly, the study suggests that risk aversion actually decreased for the wealthiest following the onset of the COVID-19 pandemic, however, the lack of statistical significance means no meaningful conclusions can be drawn. Whilst the analysis does point to the fact that the two wealth percentiles reacted differently to both crisis there is insufficient evidence to confirm this.

Whilst this study is comprehensive, it does have some limitations. As risk is not an inherently measurable variable researchers must find a way to proxy for it. Despite using two distinct measures for risk preferences, SPAAR statements and risky share values, they both are limited in their usefulness. The responses to the SPAAR statements are subjective and rely on self-reported data, which can be influenced by temporary emotions and personal biases. The risky share values are subject to large amounts of missing data with many respondents not fully disclosing the total value of their assets. Additionally, although the study spans nine years around each event, the full long-term impacts of the COVID-19 pandemic may not yet be fully observable. Future changes in risk preferences might emerge as more data becomes available. Future research should incorporate data from years beyond 2023 to potentially capture the longer-term effects of the pandemic.

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## APPENDIX

Table A1 Calculation for different definitions of risky share

<i>Variable</i>	<i>Components</i>
riskyshare1	shares + puts bought + put written + calls bought + calls written
riskyshare2	shares + puts bought + put written + calls bought + calls written + real estate + private business equity
riskyshare3	shares + puts bought + put written + calls bought + calls written + mutual funds + bonds
riskyshare4	shares + puts bought + put written + calls bought + calls written + real estate + private business equity + mutual funds + bonds

*Note.* The value of options is split into four categories: (1) Puts bought. (2) Puts written *i.e. short puts*. (3) Calls bought. (4) Calls written *i.e. short calls*.

Table A2 Correlation matrix between quantitative and qualitative measures of risk appetite.

	SPAAR1	SPAAR2	SPAAR3	SPAAR4	SPAAR5	SPAAR6	SPAARALL
riskyshare1	0.04	0.26	0.03	0.03	0.10	0.20	0.20
riskyshare2	0.02	0.20	0.04	0.01	0.08	0.16	0.16
riskyshare3	0.01	0.36	0.04	0.02	0.13	0.26	0.24
riskyshare4	0.00	0.31	0.04	0.00	0.12	0.24	0.21

*Note.* The darker the shade of green the higher the level of correlation

Table A3 Correlation matrix between all SRRA measures

	SPAAR1	SPAAR2	SPAAR3	SPAAR4	SPAAR5	SPAAR6	SPAARALL
SPAAR1	1.00						
SPAAR2	0.18	1.00					
SPAAR3	0.01	0.13	1.00				
SPAAR4	0.52	0.27	0.03	1.00			
SPAAR5	0.00	0.23	0.34	-0.02	1.00		
SPAAR6	0.01	0.44	0.38	0.10	0.55	1.00	
SPAARALL	0.53	0.68	0.49	0.54	0.58	0.71	1.00

*Note.* The darker the shade of green the higher the level of correlation

Table A4 SRR regression results surrounding the 2008 financial crisis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2003	0.152 (0.179)	0.165 (0.194)	-0.197 (0.157)	0.365** (0.152)	-0.647*** (0.170)	-0.282* (0.156)	-0.074 (0.092)
2004	0.138 (0.137)	0.380** (0.156)	-0.014 (0.131)	0.230* (0.117)	-0.366*** (0.137)	-0.132 (0.119)	0.039 (0.073)
2005	0.157 (0.104)	0.288** (0.114)	-0.115 (0.096)	0.231*** (0.087)	-0.344*** (0.102)	-0.231** (0.093)	-0.002 (0.053)
2006	0.042 (0.079)	0.229*** (0.088)	0.087 (0.074)	0.140** (0.068)	-0.086 (0.079)	-0.060 (0.069)	0.059 (0.039)
2008	-0.007 (0.083)	-0.190** (0.091)	-0.104 (0.080)	-0.077 (0.069)	-0.236*** (0.078)	-0.186*** (0.069)	-0.133*** (0.041)
2009	-0.013 (0.105)	-0.516*** (0.122)	-0.212** (0.101)	-0.214** (0.091)	-0.452*** (0.103)	-0.261*** (0.092)	-0.278*** (0.057)
2010	-0.073 (0.140)	-0.349** (0.161)	-0.268** (0.127)	-0.169 (0.119)	-0.204 (0.130)	-0.233* (0.124)	-0.216*** (0.071)
2011	-0.177 (0.177)	-0.580*** (0.196)	-0.229 (0.154)	-0.371*** (0.142)	-0.252 (0.168)	-0.304** (0.150)	-0.319*** (0.089)
Age <sup>2</sup>	0.000 (0.000)	0.001** (0.000)	-0.000 (0.000)	0.001*** (0.000)	-0.001 (0.000)	-0.000 (0.000)	0.000 (0.000)
University educated	-0.000 (0.166)	0.120 (0.198)	-0.727*** (0.274)	0.225 (0.199)	-0.595*** (0.198)	-0.013 (0.259)	-0.165* (0.085)
Number of people	0.075 (0.107)	0.013 (0.138)	0.045 (0.103)	0.010 (0.097)	0.235*** (0.079)	0.199* (0.106)	0.096 (0.066)
Number of children	0.059 (0.135)	0.140 (0.154)	-0.027 (0.126)	0.072 (0.116)	-0.217* (0.114)	-0.173 (0.124)	-0.024 (0.078)
Partner	-0.237 (0.174)	-0.112 (0.217)	0.047 (0.190)	0.128 (0.161)	-0.255 (0.180)	-0.187 (0.176)	-0.102 (0.101)
Height (cm)	0.023 (0.023)	-0.018 (0.018)	-0.033** (0.015)	-0.030** (0.014)	0.012 (0.015)	0.008 (0.013)	-0.006 (0.008)
Weight (kg)	-0.000 (0.003)	0.006* (0.004)	-0.005* (0.002)	-0.003 (0.003)	0.002 (0.002)	0.006*** (0.002)	0.001 (0.002)
General health	-0.015 (0.058)	-0.039 (0.057)	-0.027 (0.049)	-0.048 (0.044)	-0.037 (0.047)	-0.058 (0.045)	-0.037 (0.027)
Long illness	0.017 (0.076)	0.024 (0.085)	-0.093 (0.066)	-0.043 (0.065)	-0.004 (0.071)	-0.010 (0.060)	-0.018 (0.034)
Smoke	0.058 (0.139)	0.136 (0.138)	-0.030 (0.125)	0.023 (0.126)	-0.141 (0.143)	0.001 (0.084)	0.008 (0.068)
Financial literacy	0.065 (0.049)	0.095* (0.053)	0.063 (0.045)	0.045 (0.043)	0.017 (0.046)	0.072* (0.037)	0.059** (0.025)
Professional advice	0.089 (0.061)	0.056 (0.065)	-0.026 (0.059)	0.020 (0.048)	-0.041 (0.054)	-0.004 (0.051)	0.016 (0.028)
Media advice	0.099 (0.143)	-0.198 (0.156)	0.118 (0.115)	-0.040 (0.140)	0.089 (0.133)	-0.006 (0.097)	0.010 (0.054)
ln(income)	-0.114* (0.060)	0.003 (0.055)	-0.008 (0.041)	-0.013 (0.044)	0.041 (0.046)	-0.004 (0.046)	-0.016 (0.027)
ln(total debt)	-0.056 (0.038)	0.029 (0.036)	-0.004 (0.032)	-0.008 (0.021)	0.000 (0.032)	-0.006 (0.027)	-0.008 (0.014)
ln(wealth)	0.060** (0.028)	0.083*** (0.031)	-0.003 (0.026)	0.043* (0.022)	0.020 (0.025)	0.041** (0.020)	0.040*** (0.013)
Breadwinner	0.059 (0.124)	0.089 (0.166)	0.066 (0.172)	0.245* (0.130)	-0.218* (0.129)	-0.159 (0.127)	0.014 (0.071)
Constant	-1.501 (4.215)	2.421 (3.509)	8.952*** (2.991)	4.721* (2.628)	1.755 (2.927)	1.250 (2.499)	2.933* (1.593)
<i>N</i>	5821	5821	5821	5821	5821	5821	5821

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A5 Risky share regression results surrounding the 2008 financial crisis

	(1)	(2)	(3)	(4)
<i>Variable</i>	<i>riskyshare1</i>	<i>riskyshare2</i>	<i>riskyshare3</i>	<i>riskyshare4</i>
2003	2.905 (2.415)	2.630 (2.571)	2.478 (3.797)	2.461 (3.761)
2004	3.260 (2.016)	3.686* (2.052)	3.013 (2.935)	3.490 (2.877)
2005	2.208 (1.641)	1.735 (1.547)	2.238 (2.199)	1.844 (2.084)
2006	0.060 (0.790)	-0.346 (0.973)	1.215 (1.256)	0.746 (1.330)
2008	-0.952 (0.710)	-0.590 (0.996)	-0.105 (1.095)	0.044 (1.250)
2009	-2.410* (1.268)	-1.486 (1.824)	-1.830 (2.155)	-1.347 (2.365)
2010	-3.337** (1.587)	-3.301 (2.348)	-3.114 (2.988)	-3.135 (3.314)
2011	-4.288** (2.146)	-3.215 (2.893)	-5.016 (3.614)	-4.185 (3.939)
Age <sup>2</sup>	0.005 (0.005)	0.003 (0.006)	0.008 (0.008)	0.006 (0.009)
University educated	2.063 (3.256)	1.176 (3.406)	-0.293 (3.389)	-0.937 (3.541)
Number of people	-0.356 (0.345)	-3.529*** (1.072)	-1.085 (0.749)	-4.096*** (1.204)
Number of children	1.609 (1.062)	4.632*** (1.397)	0.897 (1.921)	3.870** (1.957)
Partner	-1.524 (0.954)	3.363 (2.218)	0.687 (1.956)	5.241* (2.805)
Height (cm)	0.084 (0.097)	0.152 (0.121)	-0.153 (0.162)	-0.096 (0.168)
Weight (kg)	-0.023 (0.030)	0.017 (0.052)	0.011 (0.052)	0.054 (0.060)
General health	0.145 (0.466)	0.482 (0.609)	0.824 (0.635)	1.173 (0.721)
Long illness	-0.439 (0.605)	0.200 (0.693)	0.226 (0.932)	0.876 (0.943)
Smoke	0.671 (0.616)	-0.847 (1.445)	1.736 (1.755)	0.528 (2.057)
Financial literacy	-0.866** (0.386)	-0.164 (0.548)	-0.949* (0.573)	-0.442 (0.652)
Professional advice	0.481 (0.455)	1.478** (0.577)	0.129 (0.697)	0.953 (0.721)
Media advice	-0.271 (1.106)	-0.380 (1.027)	0.042 (1.488)	-0.090 (1.391)
ln(income)	-0.301 (0.440)	-0.090 (0.702)	-1.028 (0.653)	-0.982 (0.811)
ln(total debt)	-0.254 (0.219)	-0.076 (0.525)	-0.425 (0.477)	-0.180 (0.648)
ln(wealth)	1.047* (0.546)	5.623*** (0.926)	3.020*** (0.759)	7.276*** (0.974)
Breadwinner	-0.752 (1.207)	0.185 (2.137)	0.137 (1.802)	1.349 (2.282)
Constant	-25.902 (27.286)	-83.149** (35.144)	-0.844 (42.176)	-52.830 (45.848)
<i>N</i>	5820	5820	5821	5821

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A6 SRR regression results surrounding the COVID-19 pandemic

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2015	0.403** (0.181)	-0.536*** (0.187)	0.223 (0.148)	0.451*** (0.157)	-0.652*** (0.149)	-0.364*** (0.135)	-0.079 (0.084)
2016	0.063 (0.143)	-0.417*** (0.145)	0.148 (0.117)	0.259** (0.120)	-0.518*** (0.118)	-0.346*** (0.110)	-0.135** (0.065)
2017	0.184* (0.111)	-0.349*** (0.111)	0.103 (0.091)	0.190** (0.090)	-0.381*** (0.094)	-0.283*** (0.084)	-0.089* (0.051)
2018	-0.033 (0.089)	-0.082 (0.086)	0.111 (0.074)	0.231*** (0.074)	-0.200*** (0.069)	-0.100 (0.062)	-0.012 (0.036)
2020	-0.027 (0.082)	0.003 (0.083)	-0.033 (0.070)	0.014 (0.074)	0.087 (0.078)	0.218*** (0.061)	0.044 (0.035)
2021	-0.117 (0.109)	0.250** (0.111)	-0.111 (0.091)	-0.169* (0.091)	0.297*** (0.101)	0.323*** (0.081)	0.079 (0.049)
2022	-0.170 (0.141)	0.365** (0.146)	-0.312** (0.122)	-0.210* (0.120)	0.437*** (0.129)	0.409*** (0.109)	0.087 (0.066)
2023	-0.289 (0.176)	0.511*** (0.189)	-0.288* (0.153)	-0.234 (0.154)	0.429*** (0.159)	0.446*** (0.135)	0.096 (0.084)
Age <sup>2</sup>	0.001** (0.000)	-0.001*** (0.000)	0.000 (0.000)	0.001** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.000 (0.000)
University educated	0.060 (0.564)	0.171 (0.323)	-0.274 (0.343)	0.728* (0.443)	-0.035 (0.407)	0.124 (0.319)	0.129 (0.211)
Number of people	0.072 (0.073)	-0.129 (0.121)	0.295** (0.148)	-0.199* (0.109)	0.043 (0.109)	0.096 (0.089)	0.030 (0.055)
Number of children	-0.009 (0.094)	0.050 (0.130)	-0.309* (0.163)	0.303*** (0.116)	-0.126 (0.137)	-0.053 (0.101)	-0.024 (0.063)
Partner	-0.138 (0.196)	0.218 (0.217)	-0.472** (0.235)	0.231 (0.167)	0.065 (0.212)	-0.114 (0.154)	-0.035 (0.096)
Height (cm)	-0.029* (0.017)	-0.033** (0.013)	-0.002 (0.010)	0.004 (0.012)	-0.015 (0.012)	0.002 (0.010)	-0.012** (0.006)
Weight (kg)	0.007 (0.004)	0.016*** (0.006)	-0.001 (0.003)	0.007 (0.005)	0.000 (0.005)	-0.001 (0.003)	0.005*** (0.002)
General health	0.058 (0.052)	-0.100* (0.053)	-0.100** (0.041)	-0.001 (0.048)	-0.050 (0.048)	-0.001 (0.039)	-0.032 (0.024)
Long illness	0.060 (0.087)	0.109 (0.079)	-0.016 (0.060)	0.040 (0.070)	-0.161** (0.067)	-0.051 (0.055)	-0.003 (0.034)
Smoke	0.188 (0.149)	0.050 (0.212)	0.070 (0.150)	-0.001 (0.154)	-0.114 (0.161)	-0.120 (0.147)	0.012 (0.086)
Financial literacy	0.031 (0.049)	0.028 (0.047)	-0.025 (0.043)	0.020 (0.042)	0.024 (0.045)	0.053 (0.038)	0.022 (0.021)
Professional advice	-0.026 (0.060)	0.083 (0.061)	-0.027 (0.048)	-0.027 (0.050)	0.013 (0.055)	0.070 (0.052)	0.014 (0.026)
Media advice	0.020 (0.195)	-0.321* (0.194)	-0.070 (0.146)	-0.042 (0.194)	0.123 (0.157)	0.071 (0.140)	-0.036 (0.071)
ln(income)	0.020 (0.036)	0.022 (0.037)	-0.029 (0.031)	0.024 (0.033)	0.014 (0.031)	0.004 (0.029)	0.009 (0.015)
ln(total debt)	0.076** (0.031)	-0.003 (0.037)	0.024 (0.026)	0.022 (0.026)	-0.003 (0.030)	-0.008 (0.025)	0.018 (0.015)
ln(wealth)	0.045 (0.032)	0.062* (0.034)	0.033 (0.025)	0.018 (0.030)	0.067** (0.028)	0.016 (0.024)	0.040*** (0.015)
Breadwinner	0.072 (0.123)	0.095 (0.147)	-0.154 (0.126)	0.130 (0.099)	-0.025 (0.126)	-0.008 (0.103)	0.018 (0.065)
Constant	2.895 (3.371)	10.803*** (2.742)	1.564 (2.254)	-2.441 (2.625)	9.325*** (2.465)	5.211** (2.123)	4.560*** (1.297)
<i>N</i>	7189	7189	7189	7189	7189	7189	7189

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A7 Risky share regression results surrounding the COVID-19 pandemic

	(1)	(2)	(3)	(4)
<i>Variable</i>	<i>riskyshare1</i>	<i>riskyshare2</i>	<i>riskyshare3</i>	<i>riskyshare4</i>
2015	0.266 (0.997)	1.422 (1.305)	-1.785 (1.549)	-1.072 (1.721)
2016	-0.213 (0.732)	0.025 (0.959)	-1.478 (1.193)	-1.374 (1.335)
2017	-0.174 (0.578)	0.313 (0.788)	-1.218 (0.871)	-0.981 (1.021)
2018	-0.086 (0.405)	0.127 (0.537)	-0.692 (0.564)	-0.620 (0.662)
2020	-0.019 (0.384)	-1.125* (0.683)	0.947* (0.537)	0.052 (0.743)
2021	-0.062 (0.603)	-1.513 (0.928)	0.857 (0.892)	-0.417 (1.101)
2022	-0.486 (0.776)	-2.050* (1.155)	1.137 (1.197)	0.026 (1.424)
2023	-0.439 (1.001)	-2.130 (1.445)	1.600 (1.616)	0.319 (1.866)
Age <sup>2</sup>	0.002 (0.002)	0.005* (0.002)	-0.002 (0.003)	0.000 (0.003)
University educated	0.884 (1.529)	-3.023 (4.152)	0.844 (1.769)	-3.052 (4.264)
Number of people	0.341 (0.220)	0.625 (0.405)	0.003 (0.812)	0.279 (0.937)
Number of children	0.852* (0.502)	2.046** (0.861)	1.690 (1.083)	2.903** (1.306)
Partner	-2.025 (2.035)	-1.608 (2.705)	0.396 (2.493)	0.657 (3.010)
Height (cm)	-0.024 (0.066)	-0.033 (0.086)	-0.209 (0.146)	-0.212 (0.159)
Weight (kg)	-0.017 (0.013)	-0.044 (0.029)	0.015 (0.018)	-0.011 (0.031)
General health	-0.179 (0.264)	-0.303 (0.389)	-0.517 (0.347)	-0.604 (0.444)
Long illness	0.341 (0.346)	0.197 (0.622)	0.649 (0.426)	0.413 (0.643)
Smoke	0.496 (0.476)	0.850 (0.564)	-0.895 (1.420)	-0.563 (1.396)
Financial literacy	-0.053 (0.235)	-0.372 (0.331)	0.318 (0.323)	-0.081 (0.384)
Professional advice	-0.133 (0.202)	-0.660 (0.415)	-0.210 (0.338)	-0.776 (0.480)
Media advice	-0.383 (0.437)	-0.014 (0.620)	0.606 (0.510)	0.793 (0.640)
ln(income)	-0.209 (0.162)	-0.211 (0.307)	-0.287 (0.205)	-0.354 (0.315)
ln(total debt)	-0.115 (0.188)	-0.034 (0.281)	-0.096 (0.211)	0.010 (0.293)
ln(wealth)	0.133 (0.266)	4.378*** (0.734)	0.220 (0.371)	4.105*** (0.756)
Breadwinner	-0.082 (0.414)	-2.213 (1.478)	0.648 (0.867)	-1.269 (1.560)
Constant	6.725 (14.633)	-37.325* (20.692)	51.846* (29.728)	13.241 (33.481)
<i>N</i>	7187	7187	7189	7189

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01



Table A8 SRR regression results surrounding the 2008 financial crisis, wealthiest

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2003	0.184 (0.341)	-0.145 (0.372)	0.078 (0.393)	0.652** (0.311)	-0.517 (0.386)	-0.703** (0.347)	-0.075 (0.168)
2004	-0.008 (0.278)	0.176 (0.323)	0.239 (0.333)	0.309 (0.226)	-0.111 (0.289)	-0.394 (0.290)	0.035 (0.140)
2005	0.262 (0.191)	0.032 (0.199)	0.068 (0.232)	0.345** (0.154)	-0.324 (0.201)	-0.385** (0.181)	-0.000 (0.083)
2006	0.142 (0.165)	0.012 (0.160)	0.324** (0.154)	0.155 (0.136)	0.034 (0.143)	-0.201 (0.125)	0.078 (0.071)
2008	-0.027 (0.133)	-0.314* (0.177)	-0.270 (0.176)	-0.108 (0.112)	-0.195 (0.152)	-0.055 (0.145)	-0.162** (0.073)
2009	-0.181 (0.196)	-0.846*** (0.266)	-0.365 (0.254)	-0.402** (0.171)	-0.727*** (0.245)	-0.147 (0.212)	-0.445*** (0.111)
2010	0.088 (0.265)	-0.218 (0.384)	-0.535 (0.350)	-0.184 (0.247)	-0.430 (0.319)	0.072 (0.296)	-0.201 (0.143)
2011	-0.068 (0.352)	-0.545 (0.432)	-0.611 (0.423)	-0.439 (0.283)	-0.554 (0.427)	0.125 (0.353)	-0.348* (0.183)
Age <sup>2</sup>	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.001** (0.001)	0.000 (0.001)	-0.001 (0.001)	0.000 (0.000)
University educated	-0.265 (0.169)	0.243 (0.215)	0.215 (0.230)	-0.791*** (0.138)	0.575*** (0.220)	-0.774*** (0.211)	-0.133 (0.108)
Number of people	0.171 (0.118)	0.021 (0.104)	-0.084 (0.084)	0.195** (0.093)	0.303*** (0.078)	-0.036 (0.080)	0.095* (0.055)
Number of children	-0.263 (0.165)	0.000 (0.174)	-0.037 (0.194)	-0.339** (0.159)	-0.313 (0.237)	0.095 (0.174)	-0.143 (0.108)
Partner	-0.380 (0.472)	0.010 (0.258)	0.834* (0.439)	-0.806** (0.407)	0.127 (0.942)	-0.093 (0.441)	-0.051 (0.208)
Height (cm)	-0.005 (0.022)	-0.001 (0.037)	-0.028 (0.029)	-0.001 (0.021)	0.039* (0.020)	0.006 (0.029)	0.002 (0.014)
Weight (kg)	-0.006 (0.005)	0.009 (0.007)	-0.002 (0.004)	-0.013** (0.006)	0.003 (0.005)	0.002 (0.004)	-0.001 (0.003)
General health	-0.017 (0.101)	-0.106 (0.094)	-0.048 (0.096)	-0.153* (0.080)	-0.127 (0.091)	-0.185* (0.099)	-0.106** (0.054)
Long illness	0.050 (0.161)	0.067 (0.158)	-0.197 (0.147)	-0.133 (0.132)	-0.227* (0.137)	-0.036 (0.126)	-0.079 (0.071)
Smoke	-0.107 (0.281)	0.293 (0.295)	0.091 (0.320)	0.197 (0.215)	-0.742** (0.345)	0.261 (0.176)	-0.001 (0.140)
Financial literacy	0.045 (0.121)	0.240** (0.102)	-0.002 (0.104)	0.154 (0.096)	0.078 (0.108)	0.034 (0.087)	0.092 (0.061)
Professional advice	0.120 (0.102)	0.016 (0.106)	-0.133 (0.128)	0.001 (0.072)	0.090 (0.102)	-0.051 (0.101)	0.007 (0.047)
Media advice	-0.626* (0.361)	-0.358 (0.480)	-0.407 (0.378)	-0.024 (0.200)	0.372 (0.284)	-0.297 (0.279)	-0.223 (0.176)
ln(income)	-0.238* (0.132)	-0.015 (0.110)	0.023 (0.083)	-0.081 (0.082)	0.098 (0.069)	0.030 (0.093)	-0.031 (0.053)
ln(total debt)	0.078 (0.078)	-0.178* (0.094)	0.102 (0.157)	0.112* (0.062)	-0.131 (0.093)	0.057 (0.062)	0.007 (0.043)
ln(wealth)	-0.003 (0.099)	0.239* (0.133)	0.086 (0.120)	-0.070 (0.094)	0.249** (0.124)	0.068 (0.092)	0.095* (0.057)
Breadwinner	0.182 (0.293)	-0.060 (0.240)	0.044 (0.298)	0.736*** (0.223)	-0.592*** (0.138)	-0.264 (0.303)	0.008 (0.130)
Constant	4.913 (4.862)	1.801 (6.901)	2.837 (6.607)	0.221 (4.710)	-8.116 (5.144)	3.708 (5.755)	0.894 (2.833)
<i>N</i>	1570	1570	1570	1570	1570	1570	1570

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A9 SRR regression results surrounding the 2008 financial crisis, least wealthy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2003	0.308 (0.483)	1.487*** (0.525)	0.379 (0.399)	0.466 (0.368)	-1.281*** (0.441)	-0.281 (0.418)	0.180 (0.232)
2004	0.193 (0.308)	1.514*** (0.435)	0.343 (0.322)	0.372 (0.311)	-1.005*** (0.367)	-0.138 (0.310)	0.213 (0.179)
2005	0.309 (0.265)	1.164*** (0.336)	0.063 (0.261)	0.348 (0.222)	-0.821*** (0.278)	-0.061 (0.264)	0.167 (0.146)
2006	0.153 (0.200)	0.784*** (0.229)	0.327* (0.190)	0.174 (0.199)	-0.515** (0.202)	-0.037 (0.185)	0.148 (0.104)
2008	-0.354* (0.197)	-0.620** (0.255)	-0.103 (0.209)	-0.221 (0.174)	-0.311 (0.235)	-0.226 (0.198)	-0.306*** (0.097)
2009	-0.283 (0.289)	-0.861*** (0.319)	-0.265 (0.300)	-0.624*** (0.229)	-0.335 (0.296)	-0.487 (0.306)	-0.476*** (0.163)
2010	-0.674** (0.342)	-1.666*** (0.383)	-0.288 (0.329)	-0.884*** (0.303)	0.145 (0.430)	-0.419 (0.333)	-0.631*** (0.180)
2011	-0.859** (0.418)	-1.937*** (0.468)	-0.201 (0.424)	-1.250*** (0.379)	0.269 (0.497)	-0.454 (0.421)	-0.739*** (0.213)
Age <sup>2</sup>	0.002* (0.001)	0.005*** (0.001)	0.000 (0.001)	0.003*** (0.001)	-0.002* (0.001)	-0.000 (0.001)	0.001** (0.000)
University educated	0.464 (0.462)	-0.111 (0.363)	-0.348 (0.404)	0.197 (0.365)	0.003 (0.256)	0.920** (0.371)	0.187 (0.198)
Number of people	0.446 (0.274)	0.476* (0.250)	0.116 (0.709)	-0.587* (0.302)	1.014*** (0.257)	-0.181 (0.301)	0.214 (0.163)
Number of children	0.065 (0.274)	-0.083 (0.258)	0.333 (0.722)	0.855*** (0.309)	-1.127*** (0.271)	0.151 (0.312)	0.032 (0.168)
Partner	-0.702* (0.407)	-0.438 (0.495)	-0.545 (0.785)	0.725 (0.473)	-0.925* (0.512)	0.187 (0.495)	-0.283 (0.283)
Height (cm)	-0.016 (0.051)	-0.040 (0.045)	-0.004 (0.037)	-0.017 (0.052)	0.081** (0.037)	0.065** (0.031)	0.011 (0.018)
Weight (kg)	-0.019 (0.017)	0.023 (0.020)	-0.003 (0.014)	-0.015 (0.014)	0.017 (0.014)	0.017 (0.014)	0.003 (0.010)
General health	0.171 (0.146)	0.119 (0.175)	-0.129 (0.141)	-0.107 (0.104)	-0.223* (0.129)	-0.171 (0.113)	-0.057 (0.074)
Long illness	0.067 (0.183)	0.043 (0.243)	0.063 (0.163)	-0.185 (0.163)	0.114 (0.171)	0.157 (0.146)	0.043 (0.091)
Smoke	0.118 (0.303)	-0.137 (0.319)	0.029 (0.271)	0.204 (0.273)	-0.332* (0.200)	-0.334 (0.220)	-0.075 (0.162)
Financial literacy	0.113 (0.129)	-0.138 (0.158)	-0.030 (0.111)	0.081 (0.116)	0.058 (0.117)	0.021 (0.090)	0.018 (0.064)
Professional advice	-0.059 (0.178)	0.175 (0.193)	0.162 (0.135)	-0.174 (0.129)	0.045 (0.171)	0.123 (0.137)	0.045 (0.084)
Media advice	-0.090 (0.213)	0.316 (0.545)	0.195 (0.204)	-0.338 (0.565)	0.228 (0.314)	0.218 (0.187)	0.088 (0.155)
ln(income)	-0.242* (0.125)	0.134 (0.171)	-0.161 (0.128)	0.012 (0.120)	-0.023 (0.194)	-0.050 (0.088)	-0.055 (0.075)
ln(total debt)	-0.015 (0.078)	0.003 (0.077)	-0.004 (0.078)	-0.019 (0.054)	0.084 (0.061)	0.006 (0.047)	0.009 (0.029)
ln(wealth)	-0.057 (0.091)	-0.007 (0.087)	0.090 (0.085)	-0.133* (0.071)	-0.127 (0.077)	-0.038 (0.068)	-0.045 (0.039)
Breadwinner	-0.272 (0.334)	-0.027 (0.366)	-0.394 (0.474)	-0.004 (0.464)	0.220 (0.425)	0.062 (0.447)	-0.069 (0.304)
Constant	5.203 (9.606)	-5.660 (8.453)	3.413 (7.531)	2.112 (9.223)	-7.322 (7.228)	-8.346 (5.688)	-1.767 (3.652)
<i>N</i>	1230	1230	1230	1230	1230	1230	1230

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A10 SRRA regression results surrounding the 2008 financial crisis, interaction terms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2003	0.035 (0.348)	0.411 (0.370)	0.274 (0.306)	0.211 (0.256)	-0.817*** (0.305)	-0.451 (0.282)	-0.056 (0.170)
2004	-0.023 (0.230)	0.693** (0.323)	0.266 (0.247)	0.174 (0.239)	-0.643** (0.263)	-0.259 (0.216)	0.035 (0.137)
2005	0.158 (0.232)	0.636** (0.274)	0.006 (0.225)	0.257 (0.191)	-0.597*** (0.229)	-0.148 (0.212)	0.052 (0.119)
2006	0.103 (0.182)	0.482** (0.209)	0.312* (0.173)	0.135 (0.177)	-0.409** (0.178)	-0.083 (0.170)	0.090 (0.091)
2008	-0.252 (0.194)	-0.312 (0.234)	-0.102 (0.190)	-0.112 (0.162)	-0.450** (0.208)	-0.197 (0.176)	-0.238*** (0.092)
2009	-0.169 (0.242)	-0.355 (0.262)	-0.268 (0.263)	-0.466** (0.192)	-0.569** (0.252)	-0.413 (0.254)	-0.373*** (0.135)
2010	-0.427 (0.264)	-0.771*** (0.275)	-0.201 (0.267)	-0.643*** (0.231)	-0.305 (0.328)	-0.299 (0.240)	-0.441*** (0.136)
2011	-0.565* (0.307)	-0.855*** (0.305)	-0.194 (0.324)	-0.953*** (0.272)	-0.317 (0.362)	-0.305 (0.289)	-0.532*** (0.156)
2003i	0.319 (0.283)	0.120 (0.298)	-0.308 (0.287)	0.611** (0.238)	-0.214 (0.263)	-0.061 (0.234)	0.078 (0.139)
2004i	0.125 (0.218)	-0.040 (0.288)	-0.099 (0.249)	0.252 (0.220)	0.174 (0.236)	0.004 (0.213)	0.069 (0.129)
2005i	0.187 (0.228)	-0.291 (0.255)	0.027 (0.252)	0.159 (0.195)	0.039 (0.228)	-0.138 (0.204)	-0.003 (0.113)
2006i	0.086 (0.216)	-0.292 (0.226)	0.027 (0.213)	0.056 (0.209)	0.335 (0.207)	-0.072 (0.191)	0.023 (0.102)
2008i	0.190 (0.217)	-0.158 (0.267)	-0.142 (0.229)	-0.064 (0.181)	0.420* (0.225)	0.103 (0.200)	0.058 (0.108)
2009i	-0.070 (0.246)	-0.846*** (0.292)	-0.023 (0.272)	-0.021 (0.192)	0.086 (0.262)	0.157 (0.259)	-0.119 (0.139)
2010i	0.437* (0.246)	0.043 (0.329)	-0.218 (0.272)	0.340 (0.231)	0.241 (0.315)	0.225 (0.243)	0.178 (0.135)
2011i	0.363 (0.252)	-0.391 (0.305)	-0.314 (0.281)	0.344 (0.237)	0.264 (0.293)	0.228 (0.254)	0.082 (0.147)
Age <sup>2</sup>	0.001 (0.001)	0.002*** (0.001)	0.000 (0.001)	0.002*** (0.000)	-0.001 (0.001)	-0.000 (0.001)	0.001** (0.000)
University educated	0.133 (0.390)	-0.226 (0.289)	-0.238 (0.317)	-0.119 (0.274)	-0.326 (0.423)	0.289 (0.412)	-0.081 (0.208)
Number of people	0.136 (0.147)	0.002 (0.123)	-0.031 (0.095)	0.078 (0.101)	0.409*** (0.091)	-0.022 (0.065)	0.095 (0.066)
Number of children	-0.051 (0.182)	0.093 (0.170)	0.082 (0.164)	-0.074 (0.162)	-0.491*** (0.175)	0.032 (0.130)	-0.068 (0.098)
Partner	-0.369 (0.273)	0.032 (0.274)	0.102 (0.279)	-0.156 (0.290)	-0.265 (0.390)	0.008 (0.261)	-0.108 (0.155)
Height (cm)	-0.011 (0.027)	-0.021 (0.030)	-0.019 (0.023)	-0.015 (0.027)	0.059*** (0.021)	0.037 (0.023)	0.005 (0.011)
Weight (kg)	-0.009* (0.005)	0.006 (0.006)	-0.006 (0.004)	-0.015*** (0.005)	0.003 (0.004)	0.005 (0.003)	-0.003 (0.003)
General health	0.054 (0.083)	-0.031 (0.084)	-0.062 (0.079)	-0.140** (0.066)	-0.143* (0.073)	-0.170** (0.072)	-0.082* (0.042)
Long illness	0.063 (0.119)	0.055 (0.133)	-0.101 (0.110)	-0.136 (0.104)	-0.113 (0.110)	0.029 (0.093)	-0.034 (0.055)
Smoke	-0.012 (0.212)	0.055 (0.232)	0.019 (0.215)	0.140 (0.185)	-0.577*** (0.200)	-0.028 (0.147)	-0.067 (0.113)
Financial literacy	0.075 (0.086)	0.100 (0.087)	0.001 (0.075)	0.111 (0.072)	0.051 (0.079)	0.053 (0.062)	0.065 (0.043)
Professional advice	0.060 (0.092)	0.074 (0.105)	-0.019 (0.094)	-0.049 (0.067)	0.053 (0.087)	0.000 (0.080)	0.020 (0.042)
Media advice	-0.417* (0.216)	-0.058 (0.369)	-0.076 (0.207)	-0.268 (0.310)	0.263 (0.219)	-0.000 (0.145)	-0.093 (0.105)
ln(income)	-0.223** (0.090)	0.035 (0.093)	-0.036 (0.065)	-0.058 (0.064)	0.075 (0.078)	0.006 (0.064)	-0.033 (0.040)
ln(total debt)	0.029 (0.059)	-0.058 (0.061)	0.027 (0.073)	0.037 (0.042)	0.024 (0.051)	0.007 (0.035)	0.011 (0.022)
ln(wealth)	-0.004 (0.064)	0.087 (0.073)	0.065 (0.064)	-0.069 (0.053)	0.010 (0.063)	0.001 (0.050)	0.015 (0.031)

Breadwinner	0.063	-0.094	-0.024	0.366	-0.311	-0.125	-0.021
	(0.213)	(0.179)	(0.238)	(0.251)	(0.191)	(0.247)	(0.124)
Constant	5.165	0.686	4.427	2.237	-6.292	-2.268	0.659
	(5.329)	(5.630)	(4.887)	(4.929)	(4.293)	(4.272)	(2.306)
<i>N</i>	2800	2800	2800	2800	2800	2800	2800

Table A11 SRRA regression results surrounding the COVID-19 pandemic, wealthiest

<i>Variable</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2015	0.346	-0.799	0.589	0.015	-0.742*	-0.013	-0.101
	(0.439)	(0.524)	(0.388)	(0.336)	(0.384)	(0.351)	(0.234)
2016	0.167	-0.673*	0.470	-0.077	-0.579*	-0.155	-0.141
	(0.335)	(0.405)	(0.297)	(0.266)	(0.300)	(0.289)	(0.180)
2017	0.137	-0.446	0.172	-0.024	-0.558**	-0.220	-0.156
	(0.265)	(0.300)	(0.228)	(0.198)	(0.239)	(0.207)	(0.138)
2018	0.211	-0.100	0.055	0.219	-0.275*	-0.042	0.011
	(0.161)	(0.211)	(0.153)	(0.155)	(0.156)	(0.137)	(0.077)
2020	-0.103	0.006	0.129	0.171	0.004	0.218*	0.071
	(0.154)	(0.168)	(0.146)	(0.143)	(0.146)	(0.129)	(0.076)
2021	-0.200	0.256	-0.234	-0.120	0.023	0.153	-0.020
	(0.236)	(0.236)	(0.215)	(0.194)	(0.233)	(0.184)	(0.119)
2022	-0.254	0.419	-0.419	0.159	0.368	0.200	0.079
	(0.313)	(0.337)	(0.289)	(0.271)	(0.308)	(0.260)	(0.164)
2023	-0.389	0.486	-0.400	0.148	0.104	0.129	0.013
	(0.407)	(0.459)	(0.368)	(0.329)	(0.378)	(0.336)	(0.219)
age2	0.001	-0.001	0.001	0.000	-0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Number of people	0.180	0.510	-0.254	0.448	0.551***	-0.125	0.218
	(0.202)	(0.380)	(0.202)	(0.403)	(0.187)	(0.149)	(0.156)
Number of children	-0.265	-0.439	0.389**	-0.376	-0.988***	0.045	-0.272
	(0.266)	(0.399)	(0.195)	(0.415)	(0.282)	(0.169)	(0.170)
Partner	-0.384	-0.781*	-0.588	-0.281	0.849	-0.065	-0.208
	(0.479)	(0.433)	(0.401)	(0.571)	(0.751)	(0.223)	(0.177)
Height (cm)	-0.078*	-0.052	-0.038	-0.014	0.027	0.037	-0.020
	(0.046)	(0.049)	(0.041)	(0.034)	(0.045)	(0.038)	(0.019)
Weight (kg)	0.000	0.015	-0.002	0.001	0.018**	0.007	0.007*
	(0.007)	(0.011)	(0.006)	(0.005)	(0.007)	(0.008)	(0.004)
General health	0.094	-0.261**	-0.086	0.034	-0.032	0.009	-0.040
	(0.089)	(0.104)	(0.085)	(0.080)	(0.097)	(0.071)	(0.040)
Long illness	0.201	-0.003	0.014	0.036	-0.216*	0.068	0.017
	(0.154)	(0.186)	(0.150)	(0.099)	(0.121)	(0.108)	(0.069)
Smoke	0.297	0.074	0.790***	-0.221	-0.902*	-0.481	-0.074
	(0.327)	(0.406)	(0.274)	(0.204)	(0.469)	(0.355)	(0.150)
Financial literacy	-0.045	0.098	0.100	-0.012	-0.037	0.089	0.032
	(0.091)	(0.094)	(0.104)	(0.082)	(0.091)	(0.068)	(0.036)
Professional advice	-0.049	0.042	-0.040	-0.036	-0.089	-0.102	-0.046
	(0.105)	(0.124)	(0.101)	(0.096)	(0.108)	(0.103)	(0.053)
Media advice	0.049	-0.150	-0.181	0.322	0.347	0.068	0.076
	(0.309)	(0.343)	(0.275)	(0.344)	(0.343)	(0.199)	(0.115)
ln(income)	-0.006	-0.007	-0.024	-0.045	0.019	-0.026	-0.015
	(0.061)	(0.062)	(0.070)	(0.051)	(0.062)	(0.055)	(0.031)
ln(total debt)	-0.027	-0.016	-0.040	-0.005	-0.064	-0.045	-0.033
	(0.082)	(0.100)	(0.083)	(0.086)	(0.085)	(0.053)	(0.050)
ln(wealth)	0.077	-0.082	-0.017	0.160*	0.102	0.033	0.045
	(0.110)	(0.139)	(0.091)	(0.091)	(0.119)	(0.105)	(0.052)
Breadwinner	-0.044	0.212	-0.651***	0.108	-0.194	-0.080	-0.108
	(0.179)	(0.186)	(0.203)	(0.140)	(0.216)	(0.164)	(0.080)
Constant	13.638	18.526*	9.117	2.753	-0.226	-2.127	6.947*
	(8.986)	(9.509)	(8.430)	(6.735)	(9.037)	(8.134)	(4.165)
<i>N</i>	1841	1841	1841	1841	1841	1841	1841

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01. University education is omitted due to collinearity resulting from minimal variation over time among the wealthiest 25% of households in the sample.

Table A12 SRRA regression results surrounding the COVID-19 pandemic, least wealthy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2015	0.868 (0.554)	-0.198 (0.533)	0.677* (0.400)	0.761 (0.499)	-0.472 (0.470)	-0.180 (0.385)	0.243 (0.238)
2016	0.418 (0.445)	0.148 (0.415)	0.302 (0.300)	0.302 (0.397)	-0.418 (0.383)	-0.179 (0.317)	0.096 (0.182)
2017	0.393 (0.331)	-0.047 (0.302)	0.327 (0.251)	0.170 (0.286)	-0.379 (0.271)	-0.068 (0.217)	0.066 (0.133)
2018	0.093 (0.260)	0.079 (0.201)	0.326* (0.195)	0.319 (0.209)	-0.110 (0.179)	-0.006 (0.157)	0.117 (0.093)
2020	-0.195 (0.227)	0.155 (0.207)	0.054 (0.178)	0.005 (0.230)	-0.142 (0.244)	0.138 (0.180)	0.002 (0.098)
2021	-0.665** (0.333)	0.228 (0.331)	0.011 (0.237)	-0.272 (0.317)	0.188 (0.319)	0.168 (0.262)	-0.057 (0.151)
2022	-1.201*** (0.414)	0.058 (0.461)	-0.064 (0.344)	-0.612 (0.441)	0.422 (0.451)	0.342 (0.345)	-0.176 (0.209)
2023	-1.471*** (0.545)	-0.015 (0.542)	-0.304 (0.410)	-0.291 (0.531)	0.098 (0.549)	0.264 (0.422)	-0.286 (0.257)
Age <sup>2</sup>	0.003*** (0.001)	-0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)
University educated	-0.296 (0.674)	0.020 (0.354)	0.074 (0.392)	0.807 (0.872)	-0.514 (0.452)	-0.385 (0.336)	-0.049 (0.326)
Number of people	0.166 (0.190)	-0.165 (0.199)	0.382* (0.214)	-0.378 (0.240)	-0.169 (0.234)	0.122 (0.122)	-0.007 (0.080)
Number of children	-0.125 (0.383)	-0.048 (0.250)	-0.628** (0.265)	0.151 (0.279)	0.087 (0.312)	-0.023 (0.245)	-0.098 (0.115)
Partner	-0.363 (0.549)	0.473 (0.402)	-0.598 (0.408)	0.678* (0.378)	1.270** (0.495)	0.319 (0.305)	0.296 (0.194)
Height (cm)	0.024 (0.024)	-0.016 (0.023)	-0.019 (0.019)	0.052* (0.028)	0.018 (0.037)	0.020 (0.030)	0.013 (0.011)
Weight (kg)	0.005 (0.012)	-0.016** (0.008)	0.003 (0.006)	0.003 (0.010)	-0.020*** (0.007)	-0.002 (0.010)	-0.005 (0.005)
General health	0.141 (0.143)	0.202* (0.119)	-0.175* (0.095)	0.261* (0.147)	-0.091 (0.124)	0.024 (0.102)	0.060 (0.059)
Long illness	-0.108 (0.263)	0.229 (0.177)	-0.196 (0.121)	-0.251 (0.172)	-0.120 (0.148)	-0.038 (0.145)	-0.081 (0.075)
Smoke	0.409 (0.361)	0.529* (0.316)	-0.067 (0.455)	-0.092 (0.379)	0.137 (0.417)	0.004 (0.282)	0.153 (0.195)
Financial literacy	0.164 (0.147)	-0.019 (0.120)	-0.061 (0.100)	0.150 (0.113)	-0.028 (0.108)	0.021 (0.095)	0.038 (0.054)
Professional advice	-0.096 (0.164)	0.098 (0.157)	-0.104 (0.126)	0.133 (0.125)	-0.012 (0.139)	0.153 (0.162)	0.029 (0.072)
Media advice	0.765 (0.587)	-0.415 (0.503)	0.109 (0.248)	0.220 (0.473)	-0.093 (0.262)	0.186 (0.285)	0.129 (0.221)
ln(income)	-0.070 (0.073)	-0.130* (0.078)	-0.202*** (0.061)	-0.008 (0.072)	0.013 (0.054)	-0.054 (0.050)	-0.075*** (0.027)
ln(total debt)	0.263*** (0.084)	0.134** (0.067)	0.063 (0.060)	0.079 (0.062)	0.033 (0.059)	-0.005 (0.060)	0.095*** (0.035)
ln(wealth)	-0.134* (0.078)	0.147 (0.098)	0.099 (0.062)	0.043 (0.069)	0.046 (0.072)	-0.014 (0.054)	0.031 (0.034)
Breadwinner	-0.448 (0.678)	-0.370 (0.327)	-0.075 (0.397)	0.390 (0.411)	-0.399 (0.335)	-0.289 (0.239)	-0.199 (0.167)
Constant	-12.504** (6.008)	5.694 (5.545)	3.167 (4.541)	-13.608** (6.573)	3.236 (7.807)	1.062 (6.170)	-2.159 (2.776)
<i>N</i>	1432	1432	1432	1432	1432	1432	1432

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A13 SRRA regression results surrounding the COVID-19 pandemic, interaction terms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
2003	0.231 (0.389)	-0.565 (0.374)	0.550* (0.305)	0.332 (0.318)	-0.555* (0.323)	-0.113 (0.265)	-0.020 (0.176)
2004	-0.073 (0.320)	-0.126 (0.312)	0.250 (0.235)	-0.042 (0.266)	-0.442 (0.277)	-0.113 (0.230)	-0.091 (0.141)
2005	0.072 (0.257)	-0.229 (0.241)	0.301 (0.206)	-0.071 (0.207)	-0.408* (0.214)	-0.011 (0.183)	-0.058 (0.107)
2006	-0.069 (0.225)	-0.040 (0.186)	0.298* (0.177)	0.217 (0.186)	-0.111 (0.162)	0.062 (0.143)	0.060 (0.086)
2008	-0.057 (0.204)	0.199 (0.189)	0.012 (0.176)	0.113 (0.193)	-0.106 (0.200)	0.156 (0.154)	0.053 (0.088)
2009	-0.392 (0.277)	0.372 (0.254)	0.041 (0.212)	-0.089 (0.232)	0.229 (0.234)	0.186 (0.203)	0.058 (0.118)
2010	-0.746** (0.316)	0.248 (0.335)	-0.053 (0.286)	-0.313 (0.290)	0.448 (0.303)	0.377 (0.253)	-0.007 (0.155)
2011	-0.854** (0.373)	0.254 (0.383)	-0.261 (0.327)	0.121 (0.352)	0.123 (0.355)	0.297 (0.292)	-0.053 (0.188)
2003i	0.505 (0.324)	-0.093 (0.287)	0.185 (0.235)	-0.141 (0.280)	-0.116 (0.258)	-0.024 (0.181)	0.053 (0.128)
2004i	0.533* (0.272)	-0.414 (0.281)	0.351* (0.200)	0.106 (0.245)	-0.073 (0.244)	-0.137 (0.202)	0.061 (0.116)
2005i	0.256 (0.254)	-0.127 (0.246)	-0.082 (0.202)	0.155 (0.211)	-0.108 (0.232)	-0.271 (0.189)	-0.030 (0.104)
2006i	0.366 (0.244)	-0.030 (0.235)	-0.228 (0.207)	0.052 (0.224)	-0.134 (0.201)	-0.138 (0.174)	-0.019 (0.098)
2008i	-0.126 (0.231)	-0.258 (0.224)	0.053 (0.205)	0.007 (0.210)	0.120 (0.212)	0.109 (0.166)	-0.016 (0.099)
2009i	-0.027 (0.289)	-0.200 (0.229)	-0.360 (0.221)	-0.147 (0.222)	-0.230 (0.230)	-0.001 (0.182)	-0.161 (0.107)
2010i	0.203 (0.298)	0.057 (0.256)	-0.527** (0.250)	0.327 (0.242)	-0.144 (0.233)	-0.131 (0.189)	-0.036 (0.120)
2011i	0.074 (0.303)	0.051 (0.274)	-0.331 (0.233)	-0.148 (0.298)	-0.067 (0.236)	-0.091 (0.182)	-0.085 (0.128)
Age <sup>2</sup>	0.002** (0.001)	-0.001 (0.001)	0.001* (0.001)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.000)	0.000 (0.000)
University educated	-0.038 (0.852)	-0.190 (0.377)	-0.057 (0.265)	0.685 (0.811)	-0.276 (0.544)	-0.533** (0.218)	-0.068 (0.349)
Number of people	0.170 (0.144)	-0.022 (0.154)	0.227 (0.155)	-0.182 (0.202)	-0.004 (0.170)	0.080 (0.106)	0.045 (0.065)
Number of children	-0.193 (0.202)	0.014 (0.198)	-0.227 (0.182)	0.151 (0.226)	-0.291 (0.231)	-0.072 (0.142)	-0.103 (0.083)
Partner	-0.326 (0.388)	0.075 (0.299)	-0.495 (0.306)	0.202 (0.318)	1.061** (0.432)	0.079 (0.236)	0.099 (0.138)
Height (cm)	-0.009 (0.025)	-0.043* (0.023)	-0.031 (0.019)	0.023 (0.026)	0.013 (0.030)	0.028 (0.024)	-0.003 (0.009)
Weight (kg)	0.001 (0.007)	-0.002 (0.005)	0.000 (0.004)	0.003 (0.006)	-0.003 (0.009)	0.002 (0.006)	0.000 (0.002)
General health	0.092 (0.078)	-0.072 (0.081)	-0.125** (0.063)	0.105 (0.077)	-0.052 (0.077)	0.022 (0.059)	-0.005 (0.035)
Long illness	0.065 (0.138)	0.089 (0.128)	-0.068 (0.100)	-0.088 (0.090)	-0.177* (0.094)	0.026 (0.086)	-0.025 (0.051)
Smoke	0.378 (0.256)	0.324 (0.264)	0.203 (0.315)	-0.109 (0.250)	-0.256 (0.324)	-0.180 (0.227)	0.060 (0.138)
Financial literacy	0.036 (0.078)	0.043 (0.074)	0.025 (0.074)	0.038 (0.067)	-0.022 (0.069)	0.069 (0.054)	0.031 (0.030)
Professional advice	-0.068 (0.088)	0.078 (0.094)	-0.085 (0.077)	0.033 (0.075)	-0.079 (0.086)	-0.010 (0.088)	-0.022 (0.041)
Media advice	0.418 (0.329)	-0.149 (0.295)	-0.166 (0.190)	0.248 (0.292)	0.187 (0.219)	0.231 (0.159)	0.128 (0.117)
ln(income)	-0.046 (0.049)	-0.056 (0.048)	-0.098** (0.047)	-0.027 (0.043)	0.023 (0.041)	-0.039 (0.035)	-0.040** (0.020)
ln(total debt)	0.123** (0.058)	0.046 (0.056)	0.031 (0.047)	0.026 (0.050)	-0.008 (0.051)	-0.020 (0.039)	0.033 (0.028)
ln(wealth)	-0.057 (0.063)	0.074 (0.078)	0.040 (0.051)	0.072 (0.054)	0.041 (0.059)	0.022 (0.046)	0.032 (0.028)

Breadwinner	-0.142 (0.227)	0.016 (0.172)	-0.475*** (0.181)	0.195 (0.145)	-0.239 (0.175)	-0.151 (0.140)	-0.133* (0.075)
Constant	-1.389 (5.293)	14.076*** (4.847)	5.191 (4.238)	-4.021 (5.310)	3.819 (5.996)	-0.274 (4.951)	2.900 (2.249)
<i>N</i>	3273	3273	3273	3273	3273	3273	3273

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A14 Attrition test 2003-2011

<i>Variable</i>	(1) <i>SPAAR1</i>	(2) <i>SPAAR2</i>	(3) <i>SPAAR3</i>	(4) <i>SPAAR4</i>	(5) <i>SPAAR5</i>	(6) <i>SPAAR6</i>	(7) <i>SPAARALL</i>
Attrition	0.046 (0.062)	0.066 (0.073)	-0.052 (0.065)	0.017 (0.056)	0.028 (0.061)	-0.007 (0.058)	0.016 (0.033)
2003	0.161 (0.179)	0.177 (0.196)	-0.207 (0.157)	0.368** (0.152)	-0.641*** (0.170)	-0.283* (0.156)	-0.071 (0.092)
2004	0.143 (0.137)	0.388** (0.156)	-0.019 (0.130)	0.231** (0.117)	-0.363*** (0.137)	-0.133 (0.120)	0.041 (0.073)
2005	0.160 (0.104)	0.291** (0.114)	-0.117 (0.096)	0.232*** (0.087)	-0.343*** (0.103)	-0.232** (0.093)	-0.002 (0.053)
2006	0.042 (0.079)	0.229*** (0.088)	0.087 (0.074)	0.140** (0.068)	-0.086 (0.079)	-0.060 (0.069)	0.059 (0.039)
2008	-0.009 (0.083)	-0.193** (0.091)	-0.101 (0.080)	-0.078 (0.069)	-0.237*** (0.078)	-0.186*** (0.069)	-0.134*** (0.041)
2009	-0.019 (0.105)	-0.524*** (0.123)	-0.206** (0.101)	-0.216** (0.091)	-0.455*** (0.104)	-0.260*** (0.092)	-0.280*** (0.057)
2010	-0.078 (0.141)	-0.356** (0.162)	-0.263** (0.126)	-0.171 (0.119)	-0.207 (0.131)	-0.232* (0.124)	-0.218*** (0.072)
2011	-0.183 (0.177)	-0.589*** (0.197)	-0.222 (0.154)	-0.373*** (0.143)	-0.255 (0.168)	-0.303** (0.150)	-0.321*** (0.090)
Age <sup>2</sup>	0.000 (0.000)	0.001** (0.000)	-0.000 (0.000)	0.001*** (0.000)	-0.001 (0.000)	-0.000 (0.000)	0.000 (0.000)
University educated	0.004 (0.168)	0.126 (0.198)	-0.732*** (0.275)	0.226 (0.200)	-0.593*** (0.199)	-0.014 (0.259)	-0.164* (0.086)
Number of people	0.076 (0.106)	0.014 (0.136)	0.044 (0.104)	0.011 (0.096)	0.236*** (0.078)	0.199* (0.106)	0.097 (0.065)
Number of children	0.057 (0.134)	0.137 (0.152)	-0.025 (0.127)	0.071 (0.116)	-0.218* (0.113)	-0.173 (0.124)	-0.025 (0.078)
Partner	-0.237 (0.173)	-0.111 (0.216)	0.047 (0.190)	0.128 (0.161)	-0.254 (0.180)	-0.187 (0.176)	-0.102 (0.101)
Height (cm)	0.023 (0.023)	-0.018 (0.018)	-0.033** (0.015)	-0.030** (0.014)	0.012 (0.015)	0.008 (0.013)	-0.006 (0.008)
Weight (kg)	-0.000 (0.003)	0.006* (0.004)	-0.005* (0.002)	-0.003 (0.003)	0.002 (0.002)	0.006*** (0.002)	0.001 (0.002)
General health	-0.015 (0.058)	-0.038 (0.057)	-0.028 (0.049)	-0.047 (0.044)	-0.037 (0.047)	-0.058 (0.045)	-0.037 (0.027)
Long illness	0.018 (0.076)	0.025 (0.085)	-0.094 (0.066)	-0.043 (0.065)	-0.003 (0.071)	-0.010 (0.060)	-0.018 (0.034)
Smoke	0.059 (0.139)	0.138 (0.139)	-0.032 (0.125)	0.024 (0.126)	-0.140 (0.143)	0.001 (0.084)	0.009 (0.069)
Financial literacy	0.065 (0.049)	0.096* (0.053)	0.062 (0.045)	0.045 (0.043)	0.017 (0.046)	0.072* (0.037)	0.060** (0.025)
Professional advice	0.088 (0.061)	0.055 (0.065)	-0.026 (0.059)	0.020 (0.048)	-0.042 (0.054)	-0.004 (0.051)	0.015 (0.028)
Media advice	0.099 (0.143)	-0.198 (0.155)	0.118 (0.115)	-0.040 (0.140)	0.088 (0.133)	-0.006 (0.097)	0.010 (0.054)
ln(income)	-0.113* (0.060)	0.005 (0.055)	-0.009 (0.041)	-0.013 (0.044)	0.042 (0.046)	-0.005 (0.046)	-0.015 (0.027)
ln(total debt)	-0.056 (0.038)	0.030 (0.036)	-0.005 (0.032)	-0.008 (0.021)	0.000 (0.032)	-0.006 (0.027)	-0.007 (0.014)
ln(wealth)	0.060** (0.028)	0.083*** (0.031)	-0.004 (0.026)	0.043* (0.022)	0.020 (0.025)	0.041** (0.020)	0.041*** (0.013)
Breadwinner	0.059 (0.124)	0.089 (0.166)	0.066 (0.172)	0.245* (0.130)	-0.218* (0.129)	-0.159 (0.127)	0.014 (0.071)
Constant	-1.559 (4.211)	2.339 (3.521)	9.016*** (2.997)	4.700* (2.630)	1.720 (2.931)	1.259 (2.501)	2.912* (1.596)
<i>N</i>	5821	5821	5821	5821	5821	5821	5821

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01

Table A15 Attrition test 2015-2023

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Variable</i>	<i>SPAAR1</i>	<i>SPAAR2</i>	<i>SPAAR3</i>	<i>SPAAR4</i>	<i>SPAAR5</i>	<i>SPAAR6</i>	<i>SPAARALL</i>
Attrition	0.119 (0.093)	0.076 (0.084)	-0.091 (0.074)	0.016 (0.076)	0.078 (0.076)	-0.057 (0.064)	0.024 (0.037)
2015	0.418** (0.182)	-0.527*** (0.187)	0.211 (0.148)	0.453*** (0.157)	-0.643*** (0.149)	-0.371*** (0.135)	-0.076 (0.084)
2016	0.069 (0.143)	-0.414*** (0.145)	0.144 (0.117)	0.260** (0.120)	-0.514*** (0.118)	-0.349*** (0.110)	-0.134** (0.065)
2017	0.183* (0.111)	-0.350*** (0.111)	0.104 (0.091)	0.190** (0.090)	-0.382*** (0.094)	-0.283*** (0.085)	-0.090* (0.051)
2018	-0.036 (0.089)	-0.084 (0.086)	0.113 (0.074)	0.231*** (0.074)	-0.202*** (0.070)	-0.099 (0.062)	-0.013 (0.036)
2020	-0.031 (0.082)	0.001 (0.083)	-0.031 (0.070)	0.013 (0.074)	0.085 (0.078)	0.220** (0.061)	0.043 (0.035)
2021	-0.127 (0.110)	0.243** (0.111)	-0.103 (0.091)	-0.170* (0.091)	0.290** (0.101)	0.328** (0.081)	0.077 (0.049)
2022	-0.180 (0.141)	0.359** (0.146)	-0.305** (0.123)	-0.211* (0.120)	0.431*** (0.129)	0.414*** (0.109)	0.085 (0.066)
2023	-0.291* (0.176)	0.509*** (0.189)	-0.286* (0.153)	-0.234 (0.154)	0.428** (0.159)	0.447** (0.135)	0.095 (0.084)
Age <sup>2</sup>	0.001** (0.000)	-0.001*** (0.000)	0.000 (0.000)	0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.000 (0.000)
University educated	0.089 (0.566)	0.189 (0.324)	-0.296 (0.342)	0.732* (0.443)	-0.016 (0.407)	0.110 (0.323)	0.135 (0.211)
Number of people	0.072 (0.073)	-0.129 (0.121)	0.295** (0.149)	-0.199* (0.109)	0.043 (0.108)	0.096 (0.090)	0.030 (0.055)
Number of children	-0.011 (0.094)	0.050 (0.130)	-0.308* (0.163)	0.303*** (0.116)	-0.127 (0.136)	-0.053 (0.102)	-0.024 (0.063)
Partner	-0.141 (0.195)	0.217 (0.217)	-0.470** (0.236)	0.231 (0.167)	0.064 (0.211)	-0.113 (0.155)	-0.035 (0.096)
Height (cm)	-0.029* (0.017)	-0.033** (0.013)	-0.002 (0.010)	0.004 (0.012)	-0.015 (0.012)	0.002 (0.010)	-0.012** (0.006)
Weight (kg)	0.007 (0.004)	0.016*** (0.006)	-0.001 (0.003)	0.007 (0.005)	0.000 (0.005)	-0.001 (0.003)	0.005*** (0.002)
General health	0.058 (0.052)	-0.100* (0.053)	-0.100** (0.041)	-0.001 (0.048)	-0.050 (0.048)	-0.001 (0.039)	-0.032 (0.024)
Long illness	0.059 (0.087)	0.108 (0.079)	-0.015 (0.060)	0.040 (0.070)	-0.162** (0.067)	-0.050 (0.055)	-0.003 (0.034)
Smoke	0.191 (0.149)	0.051 (0.213)	0.068 (0.150)	-0.001 (0.154)	-0.112 (0.161)	-0.121 (0.147)	0.013 (0.085)
Financial literacy	0.031 (0.050)	0.028 (0.047)	-0.025 (0.043)	0.020 (0.042)	0.024 (0.045)	0.053 (0.038)	0.022 (0.021)
Professional advice	-0.023 (0.060)	0.084 (0.061)	-0.029 (0.048)	-0.027 (0.050)	0.015 (0.055)	0.069 (0.052)	0.015 (0.026)
Media advice	0.023 (0.195)	-0.319 (0.194)	-0.072 (0.146)	-0.041 (0.194)	0.125 (0.157)	0.069 (0.140)	-0.036 (0.071)
ln(income)	0.019 (0.036)	0.021 (0.037)	-0.028 (0.030)	0.023 (0.033)	0.013 (0.031)	0.004 (0.029)	0.009 (0.015)
ln(total debt)	0.075** (0.031)	-0.004 (0.037)	0.025 (0.026)	0.022 (0.026)	-0.003 (0.030)	-0.008 (0.025)	0.018 (0.015)
ln(wealth)	0.045 (0.032)	0.062* (0.034)	0.033 (0.025)	0.018 (0.030)	0.067** (0.028)	0.016 (0.024)	0.040*** (0.015)
Breadwinner	0.069 (0.123)	0.093 (0.147)	-0.152 (0.126)	0.130 (0.099)	-0.027 (0.126)	-0.007 (0.103)	0.018 (0.065)
Constant	2.907 (3.372)	10.811*** (2.739)	1.555 (2.255)	-2.439 (2.626)	9.332*** (2.465)	5.205** (2.122)	4.562*** (1.298)
<i>N</i>	7189	7189	7189	7189	7189	7189	7189

Note. Standard errors are in parentheses; \*p<0.1, \*\*p<0.05, \*\*\*p<0.01