When it comes to the crunch: retail investor decision-making during periods of market volatility

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Abstract

Attitude to risk questionnaires are widely used by financial advisors to recommend investments of appropriate risk levels to their clients. Yet the usefulness of this instrument to gauge how investors will react when faced with extreme volatility in the values of their assets remains untested. Using realistic scenarios and based on a large-scale survey in the UK, in this study we examine how the investing public reacts to actual portfolio losses. We find that conventional risk tolerance measures are inadequate for determining whether investors would 'sell out' or hold their portfolios in such circumstances. On the other hand, we find that past experience, emotions and personality characteristics, including measures of financial self-efficacy and extraversion, are significant predictors of investor reactions to market crashes.

Keywords: retail investors, risk tolerance, personality characteristics, emotions, financial decisions.

J.E.L. Classifications: G11, G20, J14, C25

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1. Introduction

The vast majority of the general public find saving and investment challenging, and hence many people choose to make use of independent financial advice (Hillenbrand et al., 2021). In that context, one of the most crucial tasks for financial advisors is to provide their clients with appropriate investment propositions given the latter's risk appetite so that their investment portfolios are suitable for their needs and matched with the amount of risk they are willing to take. Among the various approaches available for selecting such portfolios, attitude to risk questionnaires (ATRQs) have emerged as being preferred in many settings due to their objectivity, transparency, and clear mapping from the items to the outcome (see MacCrimmon and Wehrung, 1986). If well designed, they can be effective without requiring complex, specialist terminology, and they have been favoured by regulators. For instance, in the UK, the Financial Services Authority (more recently renamed the Financial Conduct Authority) stated in a report in 2011 that "where they are used within a suitability assessment process, tools and questionnaires can help to provide structure and promote consistency and so can usefully support the discussion a customer has with their adviser or investment manager".[1]

Despite the widespread use of ATRQs in practical investment settings, there has been virtually no research into how well they perform in predicting investor behaviour, in particular during times of market stress (Brooks et al., 2018). Specifically, when faced with periods of significant return volatility and where there are major price falls, can ATRQs separate investors who will hold their positions and ride the crashes from those who will take fright and sell out, possibly at the worst time when the markets are at a temporary floor, thus missing out on any partial or full recovery?

Risk tolerance is known to be reasonably stable over time for a given individual (see, for example, Sahm, 2012), and therefore what leads investors to sell when faced with investment losses is likely not a change in their risk tolerance but rather a change in their perception of market dynamics and their expectations of risks and returns. A misperception of likely future risks could lead to panic selling, which might suggest that an investor has low risk composure and requires additional assistance regardless of whether they are highly risk tolerant (Carr, 2014). Alternatively, it might be that the ATRQ measures risk appetites under 'normal circumstances', which is something other than an investor's probable reaction when they have purchased a financial product whose value is hit hard by a market crash.

[1] Financial Services Authority (March 2011) *Finalised Guidance - Assessing suitability: Establishing the Risk a Customer is Willing and Able to Take and Making a Suitable Investment Selection*.

Against this backdrop, it is valuable to draw a distinction between risk tolerance (and, viewing it from the opposite perspective, risk aversion), where significant research has been conducted, and risk composure, which has been the subject of minimal scholarly investigation (Rabbani et al., 2018). Risk composure is an individual's propensity to behave in a consistent manner, relating to how they actually behave when faced with a financial loss. Measuring composure involves evaluating past actions and how an investor has acted under stress to gauge future decisions (Nobre & Grable, 2015). Those with good risk composure can stay on course during market volatility, and it is important to understand which investors struggle to maintain their composure during periods of volatility. Given that this is not always possible in real-time, and not all investors have past behaviour to examine, it is necessary to understand the personal factors and characteristics that may influence reactions and decisions during periods of market volatility.

What factors affect risk composure, and is attitude to risk, broadly defined, a good measure of it? Risk tolerance alone may present misleading predictions about how an individual will emotionally deal with market volatility. Therefore, there could be other factors that better explain why individuals react differently to the way their risk profile might have suggested, and it is natural to expect a role for personality characteristics (Asebedo & Payne, 2019).

It has been proposed that better financial decisions and the link between financial knowledge and effective action stems from financial self-efficacy (Remund, 2010; Lapp, 2010). Financial self-efficacy refers to an individual's perceived ability to manage their finances (Lapp 2010). It is related to their self-confidence in carrying out a financial management task and could reflect their financial skills (Lown, 2011). Those with high financial self-efficacy retain a sense of long-term control over their financial situation when markets experience volatility (Asebedo & Payne, 2019). Individuals with higher levels of self-efficacy are more able to cope with periods of adversity and have lower levels of financial stress (Park & Folkman, 1997; Lapp, 2010). They have a greater sense of financial control and a more optimistic view of their financial situation than those with lower levels of self-efficacy, as well as feeling less at risk despite difficult periods such as disrupted income, unforeseen experience and unsuccessful investments (Engelberg, 2007). Perhaps surprisingly, higher levels of self-efficacy correlate with decisions to seek financial support and work with a financial planner, while individuals with higher levels of financial stress are less inclined to seek help (Letkiewicz et al., 2015). In other words, those with some inner strength to deal with financial turmoil are nonetheless more likely to ask for help when they need it.

Asebedo and Payne (2019) investigated financial self-efficacy as a psychological construct that may explain why individuals experience an emotional reaction to market volatility inconsistent with their risk tolerance level. They found financial self-efficacy to be the best predictor of financial satisfaction, where market volatility has a negative impact on financial satisfaction for those with low financial self-efficacy. Furthermore, risk tolerance levels did not correlate with financial self-efficacy, thus, demonstrating how self-efficacy provides further insight and is useful for understanding financial satisfaction amidst periods of adversity. In contrast, Lown (2011) found self-efficacy to be positively correlated with risk tolerance, as well as age and education. Montford and Goldsmith (2016) also found that self-efficacy positively related to levels of investment risk, and they further suggest that lower levels of self-efficacy in women supports the findings that they are more risk-averse than men.

Those with greater financial self-efficacy tend to be highly resilient during difficult financial periods and can retain their sense of control and confidence (Asebedo & Payne, 2019). Resilience is the ability to bounce back and adapt to adverse situations. It is viewed as a more dynamic process than frequently measured personality traits as it is more malleable over time, and therefore investors can be supported to develop resilience. It is not a trait that people have or do not have, but involves behaviours, thoughts and actions that can develop (Fleming & Ledogar, 2008; Salignac et al., 2019). Sagone et al. (2020) highlight similarities in the characteristics of highly resilient individuals and those with higher levels of self-efficacy, including dealing with the consequences of their actions, adapting to different situations, learning from mistakes, and looking at the positive elements of tricky situations. Keye and Pidgeon (2013) explored relationships between mindfulness, academic self-efficacy and resilience and found that both self-efficacy and mindfulness were significant predictors of resilience. There is yet little research exploring the connections between resilience, financial self-efficacy and financial risk-taking behaviour.

In this paper, we use realistic scenarios in a survey setting to examine the factors that influence how investors react to significant losses in the values of their portfolios. As well as exploring the role of attitude to risk as such a predictor, we consider the impact of financial self-efficacy and resilience, and also additional personality characteristics, including the ‘big five’ as well as the participant’s positive and negative emotional levels. Using the results from a large-scale survey conducted in the UK, we use logistic regression models to capture the probability that an investor would ‘sell up’ when faced with an investment loss. As far as we are aware, this study is the first to focus on investment value crashes rather than ‘risk’ more broadly defined. Our findings highlight the limitations in trying to predict financial behaviour based on the latter, which may appear to retail investors as an abstract concept that does not relate to how they

would react when their pension savings are significantly diminishing, and it does not capture any instinctive reaction to try to stem the outflow. We also incorporate into our models a broad range of covariates that have been found to impact risk tolerance and are therefore also relevant here, including the age and gender of the respondent, and their wealth, occupation, marital status, income and educational levels.

2. Conceptual Framework and Hypotheses Development

This section presents the conceptual underpinnings that explain the relevance of the personality and emotional factors in determining how people react to investment losses. We build upon these theories to develop specific testable hypotheses that are then examined via econometric models in sections 3 and 4.

2.1 Risk tolerance

Financial risk tolerance can be regarded as an indicator of how investors will select between assets with different levels of risks and is a relatively fixed trait that is stable over time and marginally affected by situational factors (Roszkowski et al. 1993; Sahm, 2012; Kruger, 2016). However, some research has also reported that risk tolerance is less stable during periods of market volatility, where it increases in a bull market and decreases in a declining market or due to economic events and financial crises (Yao et al., 2004; Yao and Curl, 2011, Hoffman et al., 2013). The risk of investing appears to be diminished in people's minds when markets are performing well, as investors become more confident and more willing to take financial risks (i.e., they become more risk-tolerant). Hatch et al. (2018) further illustrate that such fluctuations impact investment decisions where, during an increasing market, investors select advisors who manage riskier portfolios, but advisors linked with less risk when the market is volatile and declining. This research indicates a relationship between risk tolerance, volatility, and decisions. It is expectable that those with higher risk tolerance levels will be less inclined to sell during turbulent periods than more risk-averse investors. However, existing research does not further examine how risk tolerance impacts investment decisions during periods of volatility, which leads to our first hypothesis.

H1: Risk tolerance is negatively related to the likelihood of selling during periods of volatility

2.2 Financial self-efficacy

The theory of planned behaviour further strengthens the suggested importance of self-efficacy for behaviour and decisions. The theory of planned behaviour has contributed significantly to understanding the drivers of human behaviour and illustrates the importance of attitudes, subjective norms and perceived behavioural control (which relates to self-efficacy) on

behavioural intentions and actual conduct, as such factors are potential explanations for why attitudes do not translate into behaviour (Ajzen, 1985;1991; Juvan & Dolnicar, 2014). All factors of the model have been independently shown to influence investment intentions, such as plans to purchase shares, as well as levels of risk tolerance (Alleyne & Broome, 2011). Furthermore, Wang and Zhang (2016) illustrated that adding a direct measure of self-efficacy to the theory of planned behaviour leads to better predictions of behavioural intentions, in their case, conduct related to adolescent physical activity participation. However, self-efficacy was found to significantly affect intentions and actual behaviour more so than the major factors within the theory of planned behaviour. Having self-efficacy over a particular area in life can be considered as one of the factors that help promote resilience in difficult situations, as it represents confidence in dealing with specific life stressors (Schwarzer & Warner, 2013).

The widely documented disposition effect is an investor's tendency to sell winning stocks too early and hold onto losing stocks too long (Shefrin & Statman, 1985). Studies have demonstrated how financial self-efficacy positively associates with the length of time investors retain losing stocks and that higher levels of financial self-efficacy are associated with stronger saving intentions and more saving behaviour (Kadous et al., 2014; Xiao et al., 2011; Magendans et al., 2017). Tang et al. (2019) found financial self-efficacy to positively associate with the disposition effect, where those with higher self-efficacy are more willing to sell winning investments compared to losing ones. They suggest that financial self-efficacy affects how people process information and, in turn, makes them more flexible regarding switching between experiential (fast and automatic) and rational (slow and effortful) thinking styles. This provides further evidence for the importance of examining financial self-efficacy in relation to decisions to sell investments during periods of adversity and suggests that lower levels of financial self-efficacy can have a negative impact on decisions.

H2: Financial self-efficacy is negatively related to decisions to sell during periods of volatility

2.3 Resilience

Financial resilience relates to both an individual's internal capabilities and their accessibility to external resources, including social support (Tadele & Mayena, 2009). The financial resilience framework developed by Salignac et al. (2019) highlights the importance of several external factors, including economic and financial resources, financial knowledge and behaviour, and social capital. Despite this, there are numerous personal characteristics also to consider. The researchers found that those with higher financial resilience were more optimistic and less likely to have a severe mental illness. This reiterates the need to consider personal and emotional characteristics in relation to levels of resilience, where, for example, optimism increases resilience. Financial resilience appears to be decoupled from emotional resilience during financial adversity, particularly regarding dealing with the volatility of stock markets.

Although Salignac et al. (2019) highlighted that many individuals are financially vulnerable on the scale of financial resilience, it is unclear how this level of resilience influences investors' decisions during financial ups and downs. Emotional resilience can provide a deeper understanding of clients' financial resilience as well as their composure and behaviour. Therefore, we would expect less emotionally resilient individuals to be vulnerable to selling during periods of volatility.

H3: Resilience is negatively related to the likelihood of selling during periods of volatility

2.4 Additional contributing factors

Emotions

How do different emotional states lead to specific choices? Two related hypotheses have been proposed and have received empirical support in the psychology literature, known as the 'mood maintenance hypothesis' and the 'mood repair hypothesis'. Both provide a plausible mechanism for why moods can influence decision-making. The mood maintenance hypothesis posits that people who are currently in a good mood will make choices and take actions that support the continuation of this positive mental state. In such circumstances, they will likely eschew risky activities (Isen et al., 1988). The mood repair hypothesis, on the other hand, indicates that people who are currently in a negative mind state will make choices to improve their mood, which might encourage risk-taking since, emotionally, the individual has little to lose and may feel better if the risk that they take pays off (see, for example, Conte et al., 2018 or Isen, 1984). The literature on whether either of these two hypotheses finds empirical support in the financial domain is highly mixed, and the ideas sometimes contradict alternative intuition that would indicate the opposite. For example, negative emotional states can lead to more careful choices (Breaban et al., 2016), and worry or concern can reduce risk-taking (Kuhnen & Knutson, 2011), yet there is also evidence that negative emotions sometimes lead to ill-thought-out decisions – even recklessness, and therefore encourage more risk-taking (Leith & Baumeister, 1996). On the other hand, people in a good mood may be more prone to take risks, becoming more susceptible to weak arguments (Bless et al., 1996; Sinclair and Mark, 1995).

'Affect' is a general term for an individual's emotional state. Adolescents with higher levels of positive affect have been found to have higher levels of self-efficacy and resilience (Sagone & Indiana, 2017). Psychological resilience has been suggested to explain why individuals who experience positive affect choose the potential for higher returns, despite being riskier investment options. Resilience is a helpful resource for happy individuals when overcoming challenges (Xing & Sun, 2013). This further suggests how individual coping strategies can influence investment choices and positive affect after making such decisions. Positive affect

relates to one's expression of emotions, but as we consider current mood, higher positive mood levels also relate to resilience. In fact, higher levels of cognitive reactivity to sadness leads to a decline in resilience (Giesbrecht et al., 2009).

Emotions are particularly influential in financial decision-making compared with other domains due to the investment context's complexity, the esoteric terminology and sheer volume of information making purely rational decisions very challenging. Brooks et al. (2020) examine the impact of emotions on attitudes to risk, although they do not consider more deep-seated personality characteristics as we do in this study. Both present emotions and how an investor expects to feel in the future contingent on a specific choice and possible outcomes are relevant for decision-making. For instance, concern about experiencing regret later can discourage people from taking risks now (Zeelenber & Beattie, 1997). It is commonly suggested in the literature that emotions get in the way of rational choices (Baker & Nofsinger, 2002; Lo et al., 2005), and investors with low self-control and a weak ability to regulate their emotions may hold on to losing stocks to avoid negative emotions and sell winning stocks to feel immediate positive emotions (Shefrin & Statman, 1985), thus exhibiting the disposition effect. Overall, we would expect that positive affect would reduce the likelihood of selling investments when facing volatile periods.

H4: Positive affect is negatively linked with decisions to sell during periods of volatility

There is evidence that certain negative emotions, and most notably anger, causes people to become more reckless and self-defeating in decision making, thus encouraging them to take more risks (Campos-Vasquez & Cuilty, 2014; Lerner & Tiedens, 2006). However, on balance, we might expect that fear would dominate other negative emotions in influencing financial choices, particularly during periods of market volatility and encouraging flight from risky assets when facing losses.

H5: Negative affect is positively linked with decisions to sell during periods of volatility

Personality

Relationships exist between personality, self-efficacy and resilience, and Brown and Cinamon (2016) report that of the Big Five personality traits, conscientiousness, emotional stability and extraversion contribute to higher self-efficacy levels. Resilience has been found to be most strongly correlated with emotional stability (low neuroticism) in comparison to other dimensions among the Big Five (Friborg et al., 2005; Oshio et al., 2018). Although Shafiezadeh (2012) found resilience to correlate positively with emotional stability, extraversion and conscientiousness, only emotional stability was found to be a significant predictor of resilience levels.

Personality traits have also been found to lead people to have a predisposition to behave in specific ways when required to make a decision where there are risks. Nicholson et al. (2005) examine the big five range of personality characteristics, finding that extraversion and openness to experience encourage risk-taking, as do agreeableness and the absence of neuroticism and not being too conscientious. Further, more extroverted individuals have been found to have a preference for making short-term investments, with those of low emotional stability avoiding investments altogether investments as they are depicted to be risk-averse individuals. People who are more open to experience are inclined to make long-term investments (Mayfield et al., 2008). Oehler et al. (2018) further support this by showing that more extroverted individuals have a greater tendency to purchase overpriced assets, while more neurotic individuals buy fewer risky assets than those who are less neurotic. They suggest that their results can be used by financial services in order to consider further personalising financial advice.

Extraversion

Extroverted people tend to be highly confident (Sadi et al., 2011), which might imply a tendency to take more risk and the evidence also suggests that this leads such individuals to make more asset purchases when these are overpriced (Pan & Statman, 2012; Oeheler et al., 2018). Furthermore, as extraversion positively correlates with resilience and self-efficacy, we would expect such individuals to be less inclined to sell during periods of volatility (Brown & Cinamon, 2016; Shafiezadeh, 2012).

H6: Extraversion is negatively linked with decisions to sell during periods of volatility

Agreeableness

Agreeable people are emotionally resilient in times of turbulence (Nicholson et al., 2005), although the possibility of agreeable investors complying with their advisor out of fear of social disapproval may be crucial to investment decisions rather than as a direct impact of the trusting characteristics they hold (Tauni et al.,2020). Despite this, we expect agreeable individuals to be more likely to remain invested and follow advice from their advisor than investors who are disagreeable.

H7: Agreeableness is negatively linked with decisions to sell during periods of volatility

Conscientiousness

Conscientious people tend to be careful with their money and compliant with the rules (Donnelly et al., 2012), and investors who have high levels of conscientiousness have been found to have higher levels of self-efficacy and resilience (Brown & Cinamon, 2016;

Shafiezadeh, 2012). We, therefore, expect that due to having greater resilience and confidence in their abilities to manage their finances, conscientious individuals will be less likely to sell.

H8: Conscientiousness is negatively linked with decisions to sell during periods of volatility

Neuroticism

Neurotic individuals are prone to a range of negative emotions, including depression and shame (Costa et al., 2001). This characteristic tends to discourage risky investing due to the heightened fear of failure (Oehler et al., 2018). On the other hand, neurotic people can also engage in self-defeating, reckless behaviour, encouraging more risk-taking (Pinjisakikool, 2017). Nevertheless, as low neuroticism (high emotional stability) has been found to correlate well with self-efficacy and resilience, and such individuals can be emotionally stable during times of turbulence, we would expect high neuroticism to be positively related to decisions to sell (Brown & Cinamon, 2016; Friborg et al., 2005; Nicholson et al., 2005; Oshio et al., 2018; Shafiezadeh, 2012).

H9: Neuroticism is positively linked with decisions to sell during periods of volatility

Openness to experience

People who are open to new experiences tend to be creative types who should be more comfortable in unfamiliar circumstances, including in the context of their finances, and they are thus less likely to be fazed by losses in their portfolios invested in risky markets (Nicholson et al., 2005; De Bortoli et al., 2019; Jiang et al., 2020). We would therefore expect those open to experience to stay invested during volatile times.

H10: Openness to experience is negatively linked with decisions to sell during periods of volatility

Self-esteem

Self-esteem relates to the positive or negative attitudes individuals have towards themselves (Rosenberg, 2015). It can be understood as both a stable trait as well as one that can develop over time and be temporarily altered (Donnellan et al., 2012). Self-esteem is similar but somewhat different to self-efficacy, where generalised self-efficacy has been found to correlate with global self-esteem (Sherer et al., 1982). Self-esteem has also been observed to influence individual's resilience in relation to how they deal with challenging situations, their ability to do so, and the success of overcoming such challenges (Veselska et al., 2009).

Self-esteem influences an investor's tendency to hold losing stocks too long. Investors with lower self-regard hold losing investments longer than those with higher self-regard, and

investors with higher confidence hold losing investments longer than those with lower confidence (Kadous et al., 2014). Furthermore, individuals with low self-esteem have been found to be more risk-averse, while those who have strong confidence in their decision-making abilities are more risk-tolerant (Judge et al., 1999; Krueger & Dickson, 1994, Sekścińska et al., 2021). This suggests such individuals will be less likely to sell their investments during difficult periods of market volatility.

H11: Self-esteem is negatively linked with decisions to sell during periods of volatility

Trait anger

This trait measures the extent to which an individual has an on-going predisposition to become angry when they are provoked by a person or event, often making them feel hateful (Owen, 2011). People with high levels of trait anger tend to hold on to investments rather than selling them, and it can lead such individuals to underpredict the likelihood of negative returns and overpredict the probability of positive returns (Gambetti & Giusberti, 2012). This trait is, therefore, likely to encourage risky investment and discourage panic selling during bear markets.

H12: Trait anger is negatively linked with decisions to sell during periods of volatility

Intolerance of uncertainty

When people are intolerant of uncertainty, they don't like to be in situations where there is ambiguity about what will happen in the future, which would cause them to feel anxious (Buhr & Dugas, 2009). It is clear why intolerance of uncertainty is germane to attitude to risk, and it is highly negatively correlated with the tendency to purchase risky assets and participate in the stock market (Conlin et al., 2015). Recently, and more broadly, findings show how intolerance of uncertainty and fear of Covid-19 negatively predicted resilience during the pandemic period, and intolerance of uncertainty negatively predicted levels of academic self-efficacy (Karataş & Tagay, 2021; Uzan & Karatas, 2020). We, therefore, expect intolerance of uncertainty to have an opposite impact to resilience and financial self-efficacy on investment decisions during periods of market volatility.

H13: Intolerance of uncertainty is positively linked with decisions to sell during periods of volatility

Emotion regulation

Not all experienced feelings bias decisions, this is dependent on the individual and their ability to handle those feelings when making decisions. Those who better understand their feelings during decision-making and are therefore more successful in regulating the impact on their

decisions have been found to achieve higher investment returns (Seo & Barrett, 2007). Emotion regulation is a set of processes for coping with emotional episodes by initiating, maintaining and/or modulating feelings and emotion-related physiological activities (Kopp, 1989; Eisenberg & Spinrad, 2004). These processes controlling our emotions (which, when and how we experience and express them) are suggested to be crucial for decision making as well as other cognitive processes, such as memory (Richards & Gross, 1999; 2000; Gross, 2002).

Two distinct forms of emotion regulation exist: cognitive reappraisal and expressive suppression. Cognitive reappraisal is where the trajectory of emotional responses is altered as the meaning of a situation is reformatted. In contrast, expressive suppression is where behaviour associated with emotional responses, such as facial expressions, are inhibited (Gross, 2002; Gross & Thompson, 2007). Heilman et al. (2010) found that cognitive reappraisal increased risk-taking behaviour as it reduced the experience of negative emotion, whereas expressive suppression was ineffective for regulating unpleasant feelings and therefore did not decrease risk aversion. Suppressing expressions to negative emotions may appear useful in the short-term. However, it is the behaviour that is modified, not the negative emotion. Therefore, in the long-term, this can have a negative effect.

Fenton-O'creevy et al. (2011) argue that variability in emotion regulation strategies can explain decision-making biases influencing financial performance, such as loss aversion and the disposition effect. Acting like a trader and staying focused on how investments perform on the whole can help during periods of volatility. Such reappraisals do not encourage disregarding investment performance but focus on the affect-inducing object. Based on the evidence discussed, the following hypotheses are made:
H14: Cognitive reappraisal is negatively linked with decisions to sell during periods of volatility
H15: Expressive suppression is positively linked with decisions to sell during periods of volatility

3. Data and Methodology

3.1 Data collection

We used an on-line survey to test the above hypotheses, which was distributed through Qualtrics to respondents located in the UK. We established quotas to ensure a balanced sample of retail investors, including people with investing experience and those who had met independent financial advisors. The survey was open between January and March 2020. The questionnaire was designed with several sections covering attitude to financial risk,

investment experience, positive and negative affect, personality, intolerance of uncertainty, trait anger, resilience, financial self-efficacy, self-esteem, emotion regulation, and demographic information.

In addition, the core of the survey comprised two hypothetical scenarios representing a market crash of 20% together with graphs indicating the falls in the values of the portfolios that were designed to explore investors' decisions when faced with actual investment losses. Since we were particularly interested in the impact of independent financial advice on the decision, in scenario 1 the decision had to be taken without the benefit of advice, while scenario 2 included advice suggesting that the respondent remained invested. These scenarios are displayed together with the options available to respondents in figures 1 and 2, respectively.

The end sample contained 610 completed and usable sets of responses. We removed any responses from the sample where the participant spent less than the calculated mean time of eight minutes, or where they did not complete all questions, or there were apparent inconsistencies or implausibilities in their responses (e.g., selecting the middle answer repeatedly).

3.2 Measures

Investment decisions

To fully explore the decisions to sell, we prepared the survey data prior to running the analyses. Although the scenarios both comprise several possible responses to match the range of options available to individuals facing this situation in reality, to meet our research aims and for analysis, we collapse these responses into binary outcomes based on the decision either to sell or not to sell. Given that this investment decision (which constitutes our dependent variable) is binary, we therefore use logit models to explore the influence of personal factors on investment decisions during periods of market volatility. The specifications take the same general form throughout all analyses, although some models include only sub-sets of the variables:

$$\textit{Prob. Calculated Investment decision} = \alpha' + \beta_1 ATR_i + \beta_2 Financial\_self\_efficacy_i + \beta_3 Resilience_i + \beta_4 Positive\_affect_i + \beta_5 Negative\_affect_i + \beta_6 Extraversion_i + \beta_7 Agreeableness_i + \beta_8 Conscientiousness_i + \beta_9 Neuroticism_i + \beta_{10} Openness_i + \beta_{11} Self\_esteem_i + \beta_{12} Trait\_anger_i + \beta_{13} Intolerance\_of\_uncertainty_i + \beta_{14} Cogntive\_reapprasial_i + \beta_{15} Expressive\_supression_i + \gamma_i{}' X_i + \epsilon_i$$

where α' is a vector of cut-off points estimated in the logit models (constant terms); ATR_i is a risk level score measuring attitudes to risk that is calculated after obtaining an aggregate score. $Financial\_self\_efficacy_i$, $Resilience_i$, $Self\_esteeem_i$, $Trait\_anger_i$, and

Intolerance_of_uncertainty$_i$ are each aggregate score variables measuring various personal variables. *Cognitive_reappraisal*$_i$ is an aggregate score of items relating to this emotion regulation strategy, whereas Expressive_*supression*$_i$ is an aggregate score of the alternative strategy measured within this question set. *Openness*$_i$, *Extraversion*$_i$, *Neuroticism*$_i$, *Agreeableness*$_i$, and *Conscientiousness*$_i$ are a set of Likert scores measuring the respondent's personality traits on several different dimensions; *Positive_affect*$_i$ is an aggregate score of the PANAS positive emotions measure; *Negative_affect*$_i$ is an aggregate score of the PANAS negative emotions measure; ϵ_i is the i.i.d. standard normal error term; X_i is a vector of control variables (covariates) for gender, age, marital status, education, occupation, salary, wealth, time-period, past experience response, and we also include experience of working with a financial advisor (financial experience).

Attitude to financial risk

We measured attitude to financial risk using the 15-item questionnaire distributed by the company Distribution Technology in their 'Dynamic Planner' software, which was designed by academics (see Brooks et al., 2018).[2] The questionnaire is very widely used throughout the UK by independent financial advisors and in financial planning as a first step to determine appropriate portfolios to recommend to their clients. All 15 items have responses on a five-point Likert scale ranging from "strongly disagree" to "strongly agree". This questionnaire was specifically designed for retail investors not to include any technical or esoteric financial language that they typically struggle to understand (Charness et al., 2013). The individual question responses are then summed to form an overall score that is transformed to a 1-10 scale where higher scores indicate more tolerance of risk (i.e., lower risk aversion).

Financial self-efficacy

The study employs the financial self-efficacy scale that aims to measure how people evaluate their own skills in managing their money (Lown, 2011). Responses were made on a 4-point Likert scale from "Not at all true" to "Exactly true" on six items such as "I lack confidence in my ability to manage my finances".

[22] Distribution Technology is the UK's leading provider of software and analytics used by financial advisors, and their psychometric questionnaire process has been employed to risk profile more than a million end clients.

Resilience

We used the 10-item Connor-Davidson Resilience measure to obtain responses to items such as “I can deal with whatever comes my way” on a 5-point scale ranging from “Not true at all” to “True nearly all the time”.

Emotions

We followed many existing studies where the researchers aim to measure the emotional state of survey respondents by employing the Positive and Negative Affect Schedule (PANAS – see Watson et al., 1988). Our survey asked participants to state their feelings over the past week on 20 different emotional indicators, each measured using a 5-point Likert scale ranging from “very slightly or not at all” to “extremely”. The items included the emotions: interested, distressed, excited, upset, strong, guilty, scared, hostile, enthusiastic, proud, irritable, alert, ashamed, inspired, nervous, determined, attentive, jittery, active, and afraid.

Given the large numbers of emotions and that several of them are quite similar, in the interests of parsimony and retaining degrees of freedom, we follow other studies (e.g., Crawford & Henry, 2004; Watson et al., 1988) by aggregating positive emotions into a single composite measure of positive affect and negative emotions into a single measure of negative affect. These are known as the ‘PANAS’ scale.

The Big Five personality traits

Given the wide range of personality and other variables we use in the survey, to keep the overall number of questions at a manageable length, we use the short version of the Big Five Personality Inventory, outcomes from which are highly correlated with the full version (Rammstedt & John, 2007). There are ten items in the short version, with respondents being asked to self-evaluate the personality terms that they believe best describe themselves (Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism) – for example, "I see myself as someone who is relaxed, handles stress well" (emotional stability). As for the other characteristics above, a 5-point Likert scale ranging from “disagree strongly” to “agree strongly” was again used here.

Self-esteem

To measure self-esteem, we utilise the Rosenberg Self-esteem scale that measures global self-worth based on positive and negative feelings towards self (Rosenberg, 2015), for example, “At times I think I am no good at all”. Ten items were included with a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”.

Trait anger

Nine of the ten items from the Spielberg trait anger scale were employed, relating to how participants typically feel – for instance, whether they consider themselves to be “quick-tempered" on a 4-point Likert scale measure ranging from “almost never” to “almost always”.[3]

Intolerance of uncertainty

We employ the abridged version of the intolerance of uncertainty scale (Carleton, Norton & Asmundson, 2007), which incorporates 12 items regarding the extent to which respondents are comfortable with an ambiguity of outcomes. Participants are asked to specify the extent to which statement corresponds to the way they feel on a 5-point scale from “Not at all like me” to “Entirely like me”, using, for instance, items such as, “it frustrates me not having all the information I need”.

Emotion regulation

The emotional regulation questionnaire created by Gross and John (2003) was used to capture respondents’ strategies (cognitive reappraisal and expressive suppression). However, due to the repetition within the original questionnaire, five out of the ten items were selected targeting negative emotions. A 5-point Likert scale was used, ranging from “strongly disagree” to “strongly agree”. Three items relate to cognitive reappraisal, such as, “ when I want to feel less negative emotion (such as sadness or anger), I change what I’m thinking about”, and two items to expressive suppression, such as, “when I am feeling negative emotions, I make sure not to express them”.

Control variables

As well as exploring the impact of personality and emotions on attitudes to risk, we also control for several other variables as described below. In addition, we also include experience of working with a financial advisor, the timing of taking part in the survey (pre- or post-crash) and reactions to past periods of volatility as control variables.

Gender is a binary variable split into male and female and was included due to the body of literature that shows men are more risk-tolerant than women and women invest less than men (Charness & Gneezy, 2012; Brooks et al., 2019). General differences depicting men to be more optimistic about future stock market performance may explain these findings (Jacobsen

[3] One item was omitted due to its inappropriateness for the purpose, “When I get frustrated, I feel like hitting someone”.

et al., 2014). Women are also deemed to be more loss adverse and have a higher disposition effect in comparison to men (Rau, 2014). Montford & Goldsmith (2016) also indicate that women make less risky decisions because they have lower levels of financial self-efficacy. Therefore, it is important to consider gender when examining factors that influence financial decisions.

Age is divided into seven categories and is included as a control variable as research has observed a decline in risk tolerance with age (Brooks et al., 2018; Bucciol & Miniaci, 2011). Possible reasons behind these findings are the complexity of the information (Tun et al., 1998), a weakening of the analytical processes needed to make financial decisions (Hess, 2015) or a decline in tolerance of ambiguity and uncertainty with age (Kruglianski & Webster, 1996). Older investors have been found to have greater knowledge about investing, but with age, investment skill deteriorates due to reduced cognitive ability (Korniotis & Kumar, 2011).

Marital status is broken down here into five categories. Asebedo and Payne (2019) found no clear relation between marital status and financial self-efficacy. However, there is mixed evidence regarding the relationship between marital status and financial risk tolerance. In numerous studies, marriage had no significant association with financial risk tolerance (Hallahan et al., 2003). However, in some studies, married individuals were found to be more risk-tolerant than those who were single (Grable, 2000), whereas others find single people to be more risk-tolerant (Roszkowski et al., 1993). The latter results can be interpreted as a result of additional responsibilities such as dependents.

Educational level from school leaver to higher education is included as a control variable. Positive relationships between an individual's educational level and their degree of risk tolerance have been observed (Chang et al., 2004; Grable, 2000; Sulaiman, 2012). Differences exist in susceptibility to behavioural biases due to education, with those who have a higher level of education being more confident when making investment decisions (Jamshidinavid et al., 2012).

Occupation is included to monitor the impact of employment status. It has been suggested to be important as a control variable when studying financial risk tolerance and decisions (Grable,1997; Kannadhasan, 2015). Those with professional occupations and higher wealth are also less influenced by the disposition effect (Dhar & Zhu, 2002).

Salary & Wealth variables were included in the analyses separately. However, to explain the need for including control variables relating to income and wealth, we discuss both together

within this section. Hallahan et al. (2004) provide support that both income and wealth relate to higher levels of financial risk tolerance. Although both salary and wealth are deemed to have a positive relationship with risk tolerance levels, the evidence for wealth is not conclusive. It can be viewed that wealthy individuals can afford to incur losses when taking greater risks; however, they may also be more conservative than those with less wealth, who therefore perceive an opportunity to grow and are willing to tolerate the associated risks.

Experience with a financial advisor was included as a variable separating those who have and have not worked with a financial advisor due to the mixed evidence regarding the relationships between working with a financial advisor and risk tolerance. Researchers have found positive associations between working with an advisor and risk tolerance and that risk appetite increases after discussions with a financial advisor (Gibson et al., 2013; Bernasek & Shwiff, 2001). However, other studies show no significant impact of such interactions (Van de Venter & Michayluk, 2007).

Time period was also included as a variable. By coincidence, the survey took place during the initial wave of the covid-19 pandemic and straddles the time when major world stock markets did indeed experience significant falls of the order that we describe in the scenarios. Therefore, to allow for the impact of this, the control variable vector also includes a dummy variable for whether the respondent completed the survey before or after the stock market crash as a result of the covid-19 lockdown (time period).

Past experience response is included as a variable examining reactions when investments substantially fell in the past. Such responses can be used to gauge future actions and provide an understanding of an investors risk composure. In a similar fashion to investment decisions, we collapsed the response options into binary outcomes based on the decision either to sell or not to sell.

3.3 Data Summary

Table 1 presents a set of summary statistics of the demographic information from the 610 participants, including the period in which the study was completed, having experience with a financial advisor or not, gender, age, marital status, occupation, education, salary and wealth. Around two-thirds of respondents completed the questionnaire after the cov-19-related market crash of February 2020, 45% of the sample have previously had experience with a financial advisor, and 57% are women. The age profile of respondents is balanced, with 90% being between the ages of 25 and 74 and roughly equal splits for each 10-year band within that range. 5% of the sample are aged 18-24 with the same percentage being over 75. Just over

half of respondents are married, with a quarter single and 10% divorced. Regarding their educational attainment, a roughly equal split of 30% each of the sample have A-levels and a degree, with a quarter having only school-leaving qualifications. The majority of our sample are employed (40% full-time and 18% part-time), with a quarter retired. There is a good spread of salary and wealth levels represented in the sample, with 40% of the sample earning over £30,000 per year (roughly the median salary in the UK at the time of writing in 2021) and 25% having a wealth of over £100,000.

Tables 2 and 3 present univariate summary statistics for the binary constructed variable regarding the decision to sell or not sell in response to the two scenarios (without advice in scenario 1 (table 2) and with advice in scenario 2 (table 3)). For scenario 1, 85 respondents (14% of the sample) would sell their investments given the 20% price drop, compared with 158 (26%) with advice under scenario 2. The results appear inconsistent with what we would expect, as advice leads to more selling behaviour. However, the additional response options when presented with scenario 1 explain this finding. A large number of respondents selected the options to contact their advisor, either immediately or after a few days (49% of the sample). In scenario 2, some would therefore opt to sell when there is no option to contact an advisor, despite the advice provided to stay invested.

The tables show the means and standard deviations of the scores for each of the attitude to risk (first row after the headers), personality and emotional indicators. Of particular interest is to compare these characteristics across the sample of respondents who would not sell (column 2) compared to those who would (column 3). This difference is tested formally in columns 4 and 5 of tables 2 and 3, which present t-ratios and p-values for the null hypotheses of no difference between the not sell and sell samples against two-sided alternatives.

Among all of the various personality and affect (emotions) measures, people are more likely to sell if they have significantly higher levels of negative affect and intolerance of uncertainty but lower levels of extraversion, self-esteem and financial self-efficacy. Interestingly, the mean ATRQ score is not significantly different between the sell and not sell samples in the scenario without advice, although there is a trend (as $\alpha=0.003$) in scenario 2 where advice is provided. Even in the latter case, many of the personality variables have differences between the sell and not sell samples that are considerably more statistically significant. This provides *prima facie* evidence that risk attitude questionnaires might be inadequate as indicators of how retail investors will actually behave when faced with considerable investment losses, in particular when in the (overwhelmingly most common) situation where they do not have the reassurance

of a financial advisor to suggest that they hold tight until conditions improve rather than selling at a low point.

To understand the relationships between the potential factors that influence decisions to sell, a correlation matrix is provided (see table 4). Fairly strong positive correlations exist particularly between resilience, positive emotions, financial self-efficacy, and self-esteem, with strong negative corelations between these in relation to negative emotions, and neuroticism. Although these correlations exist between the explanatory variables, it is expected given the nature of what is being measured. However, these are not a cause for concern as they are not sufficiently high and variance inflation factor (VIF) test results (see table 5) further indicate that there are no issues of multicollinearity. None of the VIFs is greater than 2.7, with the majority being below 2, whereas figures of at least around 10 would usually be required before suggesting a problem. Therefore, we retain all variables in the model. In any case, while a high degree of correlation could cause inflated standard errors, it will not affect the estimator's consistency, unbiasedness, or efficiency (Brooks, 2019, p. 216).

4. Results and Analysis

4.1 Psychological predictors in isolation: Decisions to sell

Prior to creating regression models that incorporate both psychological and demographic variables that can predict decisions to sell during periods of volatility, we examine each psychological variable and its explanatory power for scenarios 1 (see table 6) and 2 (see table 7) individually. When no advice was provided from an advisor in scenario 1, higher levels of resilience, financial self-efficacy, extraversion, and self-esteem were found to be significant predictors of staying invested. In contrast, higher levels of negative emotions, neuroticism and intolerance of uncertainty were significant predictors of selling behaviour. When advice was provided in scenario 2, higher levels of risk tolerance, resilience, financial self-efficacy, extraversion, and self-esteem were significant predictors of staying invested, whereas higher levels of negative emotions, neuroticism, trait anger and intolerance of uncertainty were significant predictors or selling. Overall, there is a reassuringly high degree of consistency in the results between scenarios 1 and 2, with corresponding parameters having the same signs, broadly comparable magnitudes and mostly the same degrees of statistical significance.

4.2 Predictors of decisions to sell during periods of market volatility

Table 8 presents the core results from the logit regressions examining decisions to sell during periods of adversity. In all cases, the dependent variable is 1 in situations where the investor sells and zero otherwise, with alternating columns representing scenarios 1 and 2. Columns 1 and 2 in table 8 show the impacts of attitudes to risk, resilience, financial self-efficacy and

past experience responses on decisions, with a positive sign representing a sale decision. In both scenarios, it is apparent that risk tolerance is not a good predictor of such decisions, whereas financial self-efficacy is a significant predictor, with lower levels leading to a greater likelihood of deciding to sell. This provides support in favour of hypothesis H2 but not H1. Resilience is not statistically significant in the models, thus not supporting H3. Past experience is also a significant predictor, greater activity of selling during past periods of volatility leads to a greater likelihood to sell. Pseudo-R^2 values of 4.9% and 6.6% were obtained, respectively.

We were further interested in exploring the impact of covid-19 and the real market crash of February 2020, which many survey respondents would have been aware of, on decisions to sell according to the hypothetical scenarios. Columns 3 and 4 in table 8 highlight the impact of the actual experience investors were facing, and the parameter estimates indicate that those who took part in the study after the crash were more likely to sell their investments than those who took part before this period of volatility (in scenario 2), with a slightly higher pseudo-R^2 in scenario one and two of 5.7% and 7.9%, respectively. With this addition, financial self-efficacy (in scenario 2) and past experience response (in scenario 1) continue to be significant factors.

The results illustrate the need to capture additional dimensions of an investors character outside of their attitudes to risk to better understand investment decisions during periods of market volatility. In fact, when we break down the ATR measure and explore the cognitive, behavioural and emotional themes underlying the question set, it is apparent that the emotionally based questions are more relevant as predictors of the decision to sell, and therefore it is ideal to consider factors relating to this.

Columns 5 and 6 retain all the variables used in the previously discussed specifications but also including the following additional variables: positive and negative affect, personality traits (openness, conscientiousness, neuroticism, extroversion and agreeableness), self-esteem, trait anger, intolerance of uncertainty, cognitive reappraisal, and expressive suppression, as described in the methods section above. Adding these variables leads pseudo-R^2 to rise to 10.7% and 13.8% for scenarios one and two respectively, where more emotional (higher positive and negative affect) individuals (in scenario 2), those completing the study during the more volatile markets (in scenario 2) and who sold during similar times in the past (in scenario 1), are more likely to sell. This provides evidence in support of hypothesis H5 but against H4 since we expected that a positive emotional state would reduce the likelihood of an individual selling their investment. This result can potentially be explained by the mood maintenance hypothesis, however, whereby an investor might sell their risky assets in times of adversity to

preserve their good current emotional state. In contrast, extraverts (in scenario 1 & 2), and those with higher levels of financial self-efficacy (in scenario 2), were more likely to remain invested. The statistical significance of the parameter on extraversion provides support for hypothesis H6, but not for any of the other 'big five' or for openness to experience, self-esteem, trait anger, cognitive reappraisal or expressive suppression proposed by hypotheses H7 to H15.

Finally, adding the control variables (financial experience, gender, age, marital status, education, occupation, salary, and wealth) to all of the other variables in columns 7 and 8 of table 8 provides further insight on decisions made in response to the hypothetical scenarios. The results highlight that being male (in scenario 1) or having wealth in the highest band of over £200k (in scenario 2) makes respondents more likely to remain invested, although housepersons and students are more likely to sell (in scenario 1 & 2, respectively). Despite this, high levels of positive affect (in scenario 1 & 2), negative affect (in scenario 2), and previous decisions to sell (in scenario 1), remain significant indicators of selling behaviour, whereas being extroverted (in scenario 1 & 2) and neurotic (in scenario 2) are significant indicators of staying invested. We do not find a role in the decision to sell for marital status, education, age, or for the majority of the employment categories. Pseudo-R^2 values of 20.7% and 22.2%, respectively, are obtained for the final two logit regressions containing all of the variables.

5. Conclusions

This study has employed realistic scenarios in a survey context to tease out the factors influencing retail investors' decisions to sell or maintain their stock market holdings when facing significant falls in the values of their portfolios. This is an issue of considerable practical importance as well as being academically relevant given the additional losses that investors face if they liquidate their positions immediately after a crash at the lowest point in the cycle.

We find that although attitude to risk might provide a valuable insight into how investors are likely to behave on average and during normal market circumstances, as an instrument, it has limited ability to measure what matters when it matters – namely, it lacks strength as a predictor of reaction during periods of market volatility. Instead, we find that previous behaviour, along with emotional, personal and demographic characteristics can contribute to this understanding, highlighting the necessity to incorporate additional measures that can complement risk tolerance assessments during the investment planning process (Asebedo &

Payne, 2019). We find particularly strong roles for affect, financial self-efficacy and extraversion, although the other personality variables have limited explanatory power.

Our findings have several implications for both researchers in investment management and financial market regulators. The personality characteristics discussed above can be influenced through training and development, with the possibility of encouraging positive behaviours that would generate better outcomes in the long term. For example, those scoring high on intolerance of uncertainty who might fear the unknown and therefore be prone to make rash and self-defeating decisions can be given guidance to take time, reflect and regulate their emotions. Similarly, improved levels of financial self-efficacy and financial resilience could be achieved through appropriate education and support. If financial advisors were able to gauge how their clients scored on various personality scales, advisors could tailor their propositions and communications to ensure that clients responded in a manner that was consistent with their long-term best interests. Investigating how to generate such a supportive environment and how behaviour might change in the light of education and guidance framed according to personality characteristics would be a worthwhile topic for future research to explore.

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Table 1: Summary statistics of control variables

Demographic information	Overall (n=610)
Past experience response	
Not sell	583 (95.6%)
Sell	27 (4.4%)
Time-Period	
pre-crash	199 (32.6%)
post-crash	411 (67.4%)
Experience with a financial adviser	
Experience with a financial advisor	280 (45.9%)
No experience with a financial advisor	330 (54.1%)
Gender	
Female	350 (57.4%)
Male	260 (42.6%)
Age	
18-24	31 (5.1%)
25-34	91 (14.9%)
35-44	101 (16.6%)
45-54	104 (17.0%)
55-64	129 (21.1%)
65-74	122 (20.0%)
75+	32 (5.2%)
Marital status	
Single	166 (27.2%)
Divorced	60 (9.8%)
Married	344 (56.4%)
Separated	20 (3.3%)
Widowed	20 (3.3%)
Education	
School leaver	140

Demographic information	Overall (n=610)
	(23.0%)
A levels or equivalent	193 (31.6%)
Degree	190 (31.1%)
Higher degree	87 (14.3%)
Occupation	
Retired	152 (24.9%)
Full-time employment	246 (40.3%)
Houseperson	42 (6.9%)
Part-time employment	109 (17.9%)
Semi-retired	13 (2.1%)
Student	10 (1.6%)
Unemployed	38 (6.2%)
Salary	
Less than £10,000	90 (14.8%)
£10,000 - £19,999	133 (21.8%)
£20,000 - £29,999	143 (23.4%)
£30,000- £49,999	159 (26.1%)
£50,000+	85 (13.9%)
Wealth	
Less than £10,000	190 (31.1%)
£10,000 - £49,999	162 (26.6%)
£50,000 - £99,999	98 (16.1%)
£100,000 - £199,999	82 (13.4%)
£200,000+	78 (12.8%)

This table presents the summary statistics of all control variables (**Paste experience response, Time period, Financial experience, Gender, Age, Marital status, Education, Occupation, Salary, and Wealth**) broken down into the subcategories that make up these variables. The values within parentheses represent the percentage of respondents within each subcategory.

Table 2: Summary statistics (scenario 1)

Decisions: scenario 1	Not sell (n=525)	Sell (n=85)	t(df)	p value
Risk level				
Mean (SD)	4.91 (1.45)	4.81 (1.14)	0.697(132.49)	0.487
Median [Min, Max]	5.00 [1.00, 10.0]	5.00 [2.00, 8.00]		
Financial self-efficacy				
Mean (SD)	16.8 (4.35)	15.4 (4.39)	2.915(112.44)	0.0043
Median [Min, Max]	17.0 [6.00, 24.0]	14.0 [6.00, 24.0]		
Resilience				
Mean (SD)	35.8 (7.13)	34.1 (7.57)	1.990(109.5)	0.049
Median [Min, Max]	36.0 [10.0, 50.0]	34.0 [11.0, 49.0]		
Positive Affect				
Mean (SD)	33.2 (7.97)	32.9 (7.95)	0.327(113.02)	0.744
Median [Min, Max]	34.0 [10.0, 50.0]	35.0 [10.0, 49.0]		
Negative Affect				
Mean (SD)	21.6 (9.10)	25.5 (9.71)	-3.447(109.26)	<0.001
Median [Min, Max]	20.0 [10.0, 48.0]	27.0 [10.0, 48.0]		
Extraversion				
Mean (SD)	6.13 (1.80)	5.54 (1.77)	2.836(114.04)	0.0054
Median [Min, Max]	6.00 [2.00, 10.0]	5.00 [2.00, 10.0]		
Agreeableness				
Mean (SD)	7.12 (1.55)	6.98 (1.63)	0.750(110.34)	0.455
Median [Min, Max]	7.00 [2.00, 10.0]	7.00 [2.00, 10.0]		
Conscientiousness				
Mean (SD)	7.61 (1.61)	7.48 (1.78)	0.611(107.38)	0.543
Median [Min, Max]	8.00 [2.00, 10.0]	8.00 [2.00, 10.0]		
Neuroticism				
Mean (SD)	5.42 (2.01)	5.95 (1.97)	-2.296(114.19)	0.024
Median [Min, Max]	5.00 [2.00, 10.0]	6.00 [2.00, 10.0]		
Openness				
Mean (SD)	6.62 (1.64)	6.42 (1.37)	1.189(126.49)	0.237
Median [Min, Max]	7.00 [2.00, 10.0]	6.00 [3.00, 10.0]		
Self esteem				
Mean (SD)	36.6 (8.16)	33.5 (8.06)	3.306(113.7)	0.0012
Median [Min, Max]	38.0 [10.0, 50.0]	32.0 [14.0, 49.0]		
Trait anger				
Mean (SD)	17.2 (6.12)	18.5 (6.23)	-1.828(111.9)	0.070
Median [Min, Max]	16.0 [9.00, 36.0]	17.0 [9.00, 33.0]		
Intolerance of uncertainty				
Mean (SD)	32.7 (7.91)	35.0 (7.17)	-2.721(119.64)	0.0075
Median [Min, Max]	33.0 [11.0, 55.0]	36.0 [11.0, 51.0]		

Decisions: scenario 1	Not sell (n=525)	Sell (n=85)	t(df)	p value
Cognitive reappraisal				
Mean (SD)	10.3 (2.27)	9.82 (2.17)	1.726(115.88)	0.087
Median [Min, Max]	10.0 [3.00, 15.0]	10.0 [5.00, 15.0]		
Expressive Suppression				
Mean (SD)	6.70 (1.65)	6.61 (1.73)	0.464(110.29)	0.644
Median [Min, Max]	7.00 [2.00, 10.0]	7.00 [3.00, 10.0]		

This table presents the summary statistics of investment decisions by risk level, financial self-efficacy, resilience, positive and negative affect, Big 5 personality traits, self-esteem, trait anger, intolerance of uncertainty, cognitive reappraisal, expressive suppression. **Risk level** is the result of the attitude to risk questionnaire where a score of 1 indicates the lowest risk tolerance level and a score of 10 the highest. **Financial self-efficacy** is an aggregate mean score ranging from 6 to 24, the higher the value, the greater the confidence of the investor in managing their finances. **Resilience** is an aggregate mean score ranging from 10 to 50, where 50 indicates the highest level of resilience. The Big Five personality traits are presented. Two items for each of the five dimensions were included, and therefore scores for each measure (**Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism**) range from 2 to 10, where a higher score indicates a higher level of the respective trait. **Self-esteem** is an aggregate mean score ranging from 10 to 50, where a higher value indicates an individual to have a higher level of self-esteem. **Trait anger** is an aggregate mean score ranging from 9 to 36, where a higher value indicates an individual to have a higher level of trait anger. The **Intolerance of uncertainty** variable is an aggregate mean score ranging from 12 to 60. Here, a lower value relates to being more tolerant of uncertainty. **Cognitive reappraisal** is an aggregate mean score ranging from 3 to 15, and **expressive suppression** is an aggregate score ranging from 2 to 10, with higher values indicating an individual to have a higher level of the respective emotion regulation strategy. In addition, t-tests were run for each variable to examine the difference between those who decided to sell and those who did not, and as 15 paired t-tests have been carried out, here, it is important to correct for type 1 error. Therefore, we apply a Bonferroni correction and set our alpha level at 0.05/15= 0.003.

Table 3: Summary statistics (scenario 2)

Decisions: scenario 2	Not sell (n=452)	Sell (n=158)	t(df)	p value
Risk level				
Mean (SD)	4.98 (1.42)	4.65 (1.36)	2.582(285.49)	0.010
Median [Min, Max]	5.00 [1.00, 10.0]	5.00 [1.00, 8.00]		
Financial self-efficacy				
Mean (SD)	17.1 (4.42)	15.3 (4.00)	4.757(299.98)	<0.001
Median [Min, Max]	17.0 [6.00, 24.0]	15.0 [6.00, 24.0]		
Resilience				
Mean (SD)	36.0 (7.23)	34.4 (7.05)	2.432(280.6)	0.016
Median [Min, Max]	36.0 [10.0, 50.0]	35.0 [13.0, 50.0]		
Positive Affect				
Mean (SD)	33.2 (8.23)	33.0 (7.16)	0.285(312.47)	0.776
Median [Min, Max]	34.0 [10.0, 50.0]	34.0 [10.0, 49.0]		
Negative Affect				
Mean (SD)	21.1 (8.95)	25.3 (9.51)	-4.912(260.72)	<0.001
Median [Min, Max]	19.0 [10.0, 47.0]	25.0 [10.0, 48.0]		
Extraversion				
Mean (SD)	6.18 (1.84)	5.66 (1.66)	3.326(300.85)	<0.001
Median [Min, Max]	6.00 [2.00, 10.0]	6.00 [2.00, 10.0]		
Agreeableness				
Mean (SD)	7.13 (1.52)	7.01 (1.70)	0.758(250.08)	0.449

Decisions: scenario 2	Not sell (n=452)	Sell (n=158)	t(df)	p value
Median [Min, Max]	7.00 [2.00, 10.0]	7.00 [2.00, 10.0]		
Conscientiousness				
Mean (SD)	7.64 (1.59)	7.44 (1.74)	1.263(254.36)	0.208
Median [Min, Max]	8.00 [2.00, 10.0]	8.00 [2.00, 10.0]		
Neuroticism				
Mean (SD)	5.39 (2.04)	5.80 (1.89)	-2.322(294.26)	0.021
Median [Min, Max]	5.00 [2.00, 10.0]	6.00 [2.00, 10.0]		
Openness				
Mean (SD)	6.60 (1.64)	6.58 (1.51)	0.090(295.57)	0.928
Median [Min, Max]	7.00 [2.00, 10.0]	6.00 [2.00, 10.0]		
Self esteem				
Mean (SD)	36.9 (8.20)	34.1 (7.92)	3.827(282.89)	<0.001
Median [Min, Max]	38.0 [10.0, 50.0]	33.5 [12.0, 50.0]		
Trait anger				
Mean (SD)	17.0 (5.95)	18.5 (6.58)	-2473(252.27)	0.014
Median [Min, Max]	16.0 [9.00, 36.0]	18.0 [9.00, 36.0]		
Intolerance of uncertainty				
Mean (SD)	32.3 (7.83)	35.2 (7.50)	-4.104(285.03)	<0.001
Median [Min, Max]	33.0 [11.0, 53.0]	35.0 [15.0, 55.0]		
Cognitive reappraisal				
Mean (SD)	10.2 (2.27)	10.3 (2.25)	-0.733(276.92)	0.464

Decisions: scenario 2	Not sell (n=452)	Sell (n=158)	t(df)	p value
Median [Min, Max]	10.0 [3.00, 15.0]	10.0 [4.00, 15.0]		
Expressive Suppression				
Mean (SD)	6.66 (1.71)	6.79 (1.52)	-0.924(305.28)	0.356
Median [Min, Max]	7.00 [2.00, 10.0]	7.00 [2.00, 10.0]		

This table presents the summary statistics of investment decisions by risk level, financial self-efficacy, resilience, positive and negative affect, Big 5 personality traits, self-esteem, trait anger, intolerance of uncertainty, cognitive reappraisal, expressive suppression. **Risk level** is the result of the attitude to risk questionnaire where a score of 1 indicates the lowest risk tolerance level and a score of 10 the highest. **Financial self-efficacy** is an aggregate mean score ranging from 6 to 24, and the higher the value, the greater the confidence of the investor in managing their finances. **Resilience** is an aggregate mean score ranging from 10 to 50, where 50 indicates the highest level of resilience. The Big Five personality traits are presented. Two items for each of the five dimensions were included, and therefore scores for each measure (**Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism**) range from 2 to 10, where a higher score indicates a higher level of the respective trait. **Self-esteem** is an aggregate mean score ranging from 10 to 50, where a higher value indicates an individual to have a higher level of self-esteem. **Trait anger** is an aggregate mean score ranging from 9 to 36, where a higher value indicates an individual to have a higher level of trait anger. The **Intolerance of uncertainty** variable is an aggregate mean score ranging from 12 to 60. Here, a lower value relates to being more tolerant of uncertainty. **Cognitive reappraisal** is an aggregate mean score ranging from 3 to 15, and **expressive suppression** is an aggregate score ranging from 2 to 10, with higher values indicating an individual to have a higher level of the respective emotion regulation strategy. In addition, t-tests were run for each variable to examine the difference between those who decided to sell and those who did not. As 15 paired t-tests have been carried out here, it is important to correct for type 1 error. Therefore, we apply a Bonferroni correction and set our alpha level at 0.05/15= 0.003.

Table 4: Correlation matrix

	Risk level	Positive affect	Negative affect	Openness	Conscientio-usness	Extraversion	Agreeablene-ss	Neurotici-sm	Resilience	Financial self-efficacy	Trait Anger	Intolera-nce of uncertain ty	Self-esteem	Cognitive reappraisal
Risk level														
Positive affect	0.23 ***													
Negative affect	-0.08 *	-0.29 ***												
Openness	0.0	0.12 ***	0.02											
Conscientiousness	0.03	0.32 ***	-0.3 ***	0.09 *										
Extraversion	0.13 ***	0.34 ***	-0.18 ***	0.17 ***	0.19 ***									
Agreeableness	-0.02	0.09 *	-0.23 ***	0.0	0.2 ***	0.12 ***								
Neuroticism	-0.2 ***	-0.45 ***	0.53 ***	0.05	-0.29 ***	-0.38 ***	-0.21 ***							
Resilience	0.22 ***	0.56 ***	-0.34 ***	0.12 ***	0.42 ***	0.40 ***	0.11 ***	-0.58 ***						
Financial self-efficacy	0.18 ***	0.24 ***	-0.48 ***	-0.03	0.30 ***	0.09 *	0.08	-0.38 ***	0.25 ***					
Trait Anger	0.02	-0.03	0.48 ***	0.08 *	-0.20 ***	-0.03	-0.38 ***	0.30 ***	-0.14 ***	-0.44 ***				
Intolerance of uncertainty	-0.21 ***	-0.14 ***	0.52 ***	0.1 **	-0.18 ***	-0.22 ***	-0.22 ***	-0.50 ***	-0.32 ***	-0.38 ***	0.5 ***			
Self-esteem	0.18 ***	0.53 ***	-0.6 ***	0.06	0.39 ***	0.39 ***	0.14 ***	-0.64 ***	0.58 ***	0.47 ***	-0.29 ***	-0.46 ***		
Cognitive reappraisal	0.06	0.32 ***	-0.13 **	0.09 *	0.27 ***	0.14 ***	0.12 **	-0.29 ***	0.51 ***	0.04	-0.06	-0.04	0.27 ***	
Expressive suppression	0.07	0.02	-0.01	-0.05	0.06	-0.19 ***	0.04	-0.08 *	0.16 ***	-0.05	-0.03	0.07	-0.06	0.28 ***

A Spearman's correlation matrix is presented here of attitude to risk (**Risk level**) **Positive and Negative affect, Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism, Resilience, Financial self-efficacy, Trait anger, Intolerance of uncertainty, Self-esteem, Cognitive reappraisal, and Expressive suppression.** *, ** and *** indicate significance at the 5%, 1% and 0.1% levels, respectively.

Table 5: Variance inflation factors

	VIF (scenario 1)	VIF (scenario 2)
Risk level	1.22	1.18
Positive affect	2.05	1.91
Negative affect	2.06	2.06
Openness	1.08	1.08
Conscientiousness	1.45	1.42
Extraversion	1.47	1.43
Agreeableness	1.31	1.27
Neuroticism	2.34	2.42
Resilience	2.61	2.60
Financial self-efficacy	1.71	1.66
Trait Anger	2.00	1.93
Intolerance of uncertainty	2.06	1.97
Self-esteem	2.70	2.65
Cognitive reappraisal	1.59	1.59
Expressive suppression	1.31	1.27

Variance inflation factors (VIF) are provided to determine whether there are concerns of multicollinearity between the variables; attitude to risk (Risk level), Positive and Negative affect, Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism, Resilience, Financial self-efficacy, Trait anger, Intolerance of uncertainty, Self-esteem, Cognitive reappraisal, and Expressive suppression.

Table 6: Individual psychological variables logit results (scenario 1)

	Dependent variable: Decision to sell or hold														
	Scenario 1														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Risk level	-0.048														
	(0.082)														
Resilience		-0.033*													
		(0.016)													
Financial self-efficacy			-0.077**												
			(0.027)												
Positive affect				-0.005											
				(0.015)											
Negative affect					0.043***										
					(0.012)										
Extraversion						-0.185**									
						(0.067)									
Agreeableness							-0.057								
							(0.074)								
Conscientiousness								-0.047							
								(0.071)							
Neuroticism									0.128*						
									(0.057)						
Openness										-0.076					
										(0.073)					
Self-esteem											-0.045**				

											(0.014)				
Trait anger												0.033			
												(0.018)			
Intolerance of uncertainty													0.039*		
													(0.015)		
Cognitive reappraisal														-0.085	
														(0.051)	
Expressive suppression															-0.034
															(0.070)
Constant	-1.585***	-0.678	-0.577	-1.663***	-2.840***	-0.742+	-1.418**	-1.468**	-2.551***	-1.325**	-0.258	-2.419***	-3.126***	-0.969+	-1.597***
	(0.415)	(0.556)	(0.433)	(0.494)	(0.328)	(0.394)	(0.529)	(0.546)	(0.356)	(0.484)	(0.486)	(0.353)	(0.545)	(0.517)	(0.479)
Observations	610	610	610	610	610	610	610	610	610	610	610	610	610	610	610
R^2	0.001	0.012	0.025	0.0003	0.036	0.023	0.002	0.001	0.015	0.003	0.030	0.010	0.019	0.008	0.001
chi^2 (df = 1)	0.343	4.213*	8.430**	0.107	12.397***	7.875**	0.594	0.430	5.007*	1.088	10.268**	3.301+	6.463*	2.750+	0.229

Notes: +p *p **p ***p<0.01

This table reports the results of logit regressions estimated with robust standard errors in the round parentheses when the psychological variables are examined in isolation. **Investment decisions** are binary, with one representing that the respondent has decided to sell (positive sign) and zero if they have not (negative sign). **Risk level** is measured on a scale from 1 to 10, **Financial self-efficacy** measured on a scale from 6 to 24, **Resilience** measured on a scale from 10 to 50, **Positive affect** is measured on a scale from 10 to 50 and **Negative affect** on a separate construct also from 10 to 50. **Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism** are measures of personality on separate scales from 2 to 10. **Self-esteem** is measured on a scale from 10 to 50, **Trait anger** measured on a scale from 9 to 36 , **Intolerance of uncertainty** measured on a scale from 12 to 60, **Cognitive reappraisal** is measured on a scale from 3 to 15 and **Expressive suppression** on a separate construct from 2 to 10. *, ** and *** indicate significance at the 5% and 1% and 0.1% levels, respectively.

Table 7: Individual psychological variables logit results (scenario 2)

	Dependent variable: Decision to sell or hold														
	Scenario 2														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Risk level	-0.165*														
	(0.066)														
Resilience		-0.030*													
		(0.013)													
Financial self-efficacy			-0.095***												
			(0.022)												
Positive affect				-0.003											
				(0.012)											
Negative affect					0.049***										
					(0.010)										
Extraversion						-0.165**									
						(0.053)									
Agreeableness							-0.047								
							(0.059)								
Conscientiousness								-0.074							
								(0.056)							
Neuroticism									0.102*						
									(0.046)						
Openness										-0.005					
										(0.058)					

Self-esteem											-0.041***				
											(0.011)				
Trait Anger												0.038*			
												(0.015)			
Intolerance of uncertainty													0.049***		
													(0.012)		
Cognitive reappraisal														0.030	
														(0.041)	
Expressive suppression															0.049
															(0.056)
Constant	-0.258	0.017	0.494	-0.949*	-2.179***	-0.076	-0.719+	-0.491	-1.620***	-1.018**	0.417	-1.720***	-2.690***	-1.359**	-1.381***
	(0.325)	(0.454)	(0.355)	(0.394)	(0.259)	(0.320)	(0.424)	(0.433)	(0.276)	(0.391)	(0.403)	(0.281)	(0.437)	(0.433)	(0.391)
Observations	610	610	610	610	610	610	610	610	610	610	610	610	610	610	610
R^2	0.015	0.014	0.047	0.0002	0.057	0.024	0.002	0.004	0.012	0.00002	0.033	0.016	0.038	0.001	0.002
chi^2 (df = 1)	6.318*	5.675*	20.005***	0.071	24.217***	10.030**	0.638	1.730	4.943*	0.008	13.696***	6.540*	16.108***	0.536	0.769

Notes: *p **p ***p<0.01

This table reports the results of logit regressions estimated with robust standard errors in the round parentheses when the psychological variables are examined in isolation. **Investment decisions** are binary, with one representing that the respondent has decided to sell (positive sign) and zero if they have not (negative sign). **Risk level** is measured on a scale from 1 to 10, **Financial self-efficacy** measured on a scale from 6 to 24, **Resilience** measured on a scale from 10 to 50, **Positive affect** is measured on a scale from 10 to 50 and **Negative affect** on a separate construct also from 10 to 50. **Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism** are measures of personality on separate scales from 2 to 10. **Self-esteem** is measured on a scale from 10 to 50, **Trait anger** measured on a scale from 9 to 36 , **Intolerance of uncertainty** measured on a scale from 12 to 60, **Cognitive reappraisal** is measured on a scale from 3 to 15 and **Expressive suppression** on a separate construct from 2 to 10. *, ** and *** indicate significance at the 5% and 1% and 0.1% levels, respectively.

Table 8: Logit results (scenarios 1 and 2)

	Dependent variable: Decision to sell or hold							
	Scenario							
	1	2	1	2	1	2	1	2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Risk level	-0.001	-0.122	-0.005	-0.128	0.005	-0.145	0.095	-0.116
	(0.089)	(0.070)	(0.089)	(0.070)	(0.099)	(0.077)	(0.112)	(0.087)
	[-0.0001]	[-0.022]	[-0.0006]	[-0.023]	[0.0006]	[-0.025]	[0.01]	[-0.019]
Resilience	-0.027	-0.016	-0.027	-0.016	-0.010	-0.039	-0.014	-0.041
	(0.017)	(0.013)	(0.017)	(0.013)	(0.027)	(0.022)	(0.027)	(0.022)
	[-0.003]	[-0.003]	[-0.003]	[-0.003]	[-0.001]	[-0.007]	[-0.001]	[-0.007]
Financial self-efficacy	-0.061*	-0.080***	-0.050	-0.069**	-0.060	-0.067*	-0.070	-0.022
	(0.028)	(0.023)	(0.029)	(0.023)	(0.037)	(0.030)	(0.041)	(0.033)
	[-0.007]	[-0.015]	[-0.006]	[-0.012]	[-0.007]	[-0.012]	[-0.007]	[-0.004]
Past experience response	1.173**	0.826*	1.102*	0.750	0.958*	0.550	1.089*	0.683
	(0.436)	(0.407)	(0.438)	(0.409)	(0.461)	(0.429)	(0.517)	(0.465)
	[0.136]	[0.151]	[0.127]	[0.136]	[0.107]	[0.095]	[0.113]	[0.11]
crash=post-crash			0.488	0.511*	0.500	0.504*	0.310	0.300
			(0.291)	(0.224)	(0.299)	(0.233)	(0.331)	(0.250)
			[0.053]	[0.089]	[0.053]	[0.084]	[0.031]	[0.047]
Positive affect					0.042	0.041*	0.057*	0.044*
					(0.022)	(0.017)	(0.024)	(0.018)
					[0.005]	[0.007]	[0.006]	[0.007]
Negative affect					0.024	0.038*	0.030	0.042**
					(0.018)	(0.015)	(0.020)	(0.016)
					[0.003]	[0.007]	[0.003]	[0.007]
Extraversion					-0.208*	-0.180**	-0.216*	-0.178*
					(0.083)	(0.066)	(0.089)	(0.070)
					[-0.023]	[-0.031]	[-0.022]	[-0.029]
Agreeableness					-0.020	-0.018	-0.060	-0.028
					(0.087)	(0.070)	(0.091)	(0.074)
					[-0.002]	[-0.003]	[-0.006]	[-0.0046]
Conscientiousness					0.129	0.054	0.167	0.020
					(0.089)	(0.071)	(0.097)	(0.077)
					[0.014]	[0.009]	[0.017]	[0.003]
Neuroticism					-0.065	-0.133	-0.121	-0.191*
					(0.091)	(0.076)	(0.103)	(0.083)
					[-0.007]	[-0.023]	[-0.013]	[-0.031]
Openness					-0.079	-0.0002	-0.042	0.039
					(0.080)	(0.064)	(0.086)	(0.069)
					[-0.009]	[-0.00004]	[-0.004]	[0.006]

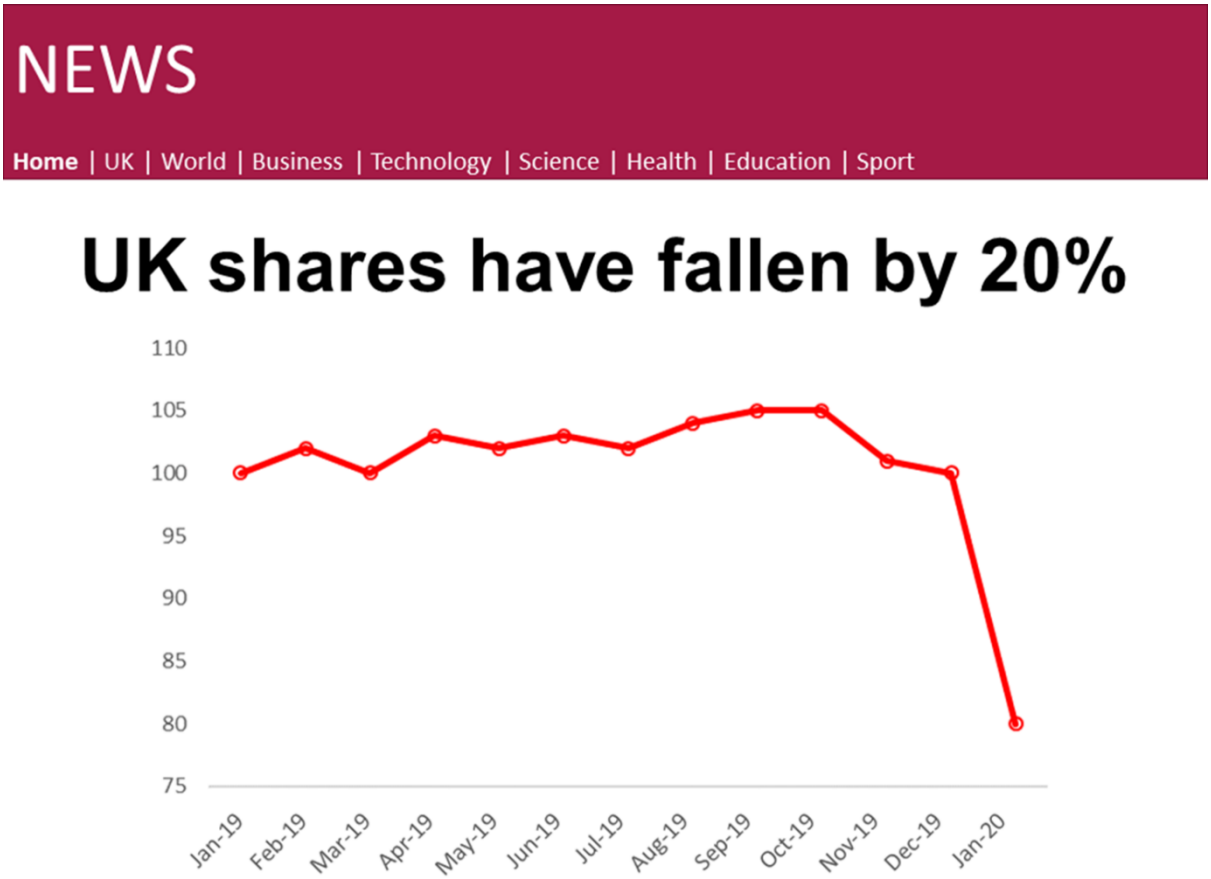
Self-esteem	-0.025	-0.009	-0.013	-0.003
	(0.024)	(0.019)	(0.026)	(0.020)
	[-0.003]	[-0.002]	[-0.001]	[-0.0005]
Trait Anger	-0.023	-0.019	-0.033	-0.018
	(0.027)	(0.022)	(0.029)	(0.023)
	[-0.003]	[-0.003]	[-0.003]	[-0.003]
Intolerance of uncertainty	0.014	0.012	0.013	0.021
	(0.022)	(0.018)	(0.024)	(0.019)
	[0.002]	[0.002]	[0.001]	[0.003]
Cognitive reappraisal	-0.070	0.076	-0.079	0.075
	(0.066)	(0.054)	(0.069)	(0.058)
	[-0.008]	[0.013]	[-0.008]	[0.012]
Expressive suppression	-0.113	-0.024	-0.056	0.022
	(0.083)	(0.066)	(0.089)	(0.071)
	[-0.013]	[-0.004]	[-0.006]	[0.004]
financial=No experience with a financial advisor			0.330	0.140
			(0.307)	(0.241)
			[0.034]	[0.022]
Gender=Male			-0.690*	-0.201
			(0.321)	(0.246)
			[-0.069]	[-0.032]
Age=25-34			-0.392	0.872
			(0.608)	(0.563)
			[-0.048]	[0.136]
Age=35-44			-1.059	0.235
			(0.668)	(0.596)
			[-0.101]	[0.032]
Age=45-54			-0.527	0.823
			(0.679)	(0.610)
			[-0.063]	[0.127]
Age=55-64			-0.442	0.527
			(0.703)	(0.634)
			[-0.054]	[0.077]
Age=65-74			-0.216	0.501
			(0.907)	(0.772)
			[-0.028]	[0.072]
Age=75+			-1.083	0.398
			(1.416)	(0.986)
			[-0.112]	[0.056]
Marital status=Divorced			-0.279	0.033
			(0.570)	(0.432)
			[-0.025]	[0.005]
Marital status=Married			0.253	0.476
			(0.356)	(0.286)

	[0.027]	[0.075]
Marital status=Separated	0.213	0.221
	(0.737)	(0.620)
	[0.022]	[0.033]
Marital status=Widowed	-1.114	0.190
	(1.141)	(0.690)
	[-0.078]	[0.028]
Education=A levels or equivalent	-0.409	-0.161
	(0.342)	(0.290)
	[-0.049]	[-0.025]
Education=Degree	-0.676	-0.047
	(0.382)	(0.303)
	[-0.076]	[-0.008]
Education=Higher degree	-1.018	0.349
	(0.530)	(0.382)
	[-0.104]	[0.06]
Occupation=Full-time employment	0.586	0.543
	(0.673)	(0.528)
	[0.05]	[0.081]
Occupation=Houseperson	1.436*	0.127
	(0.694)	(0.599)
	[0.161]	[0.171]
Occupation=Part-time employment	0.526	0.918
	(0.653)	(0.505)
	[0.044]	[0.147]
Occupation=Semi-retired	0.435	0.655
	(1.225)	(0.872)
	[0.035]	[0.099]
Occupation=Student	0.773	1.969*
	(1.101)	(0.953)
	[0.071]	[0.358]
Occupation=Unemployed	1.474	0.901
	(0.761)	(0.624)
	[0.168]	[0.144]
Salary=£10,000 - £19,999	-0.334	-0.126
	(0.426)	(0.348)
	[-0.035]	[-0.021]
Salary=£20,000 - £29,999	-0.269	-0.010
	(0.448)	(0.362)
	[-0.028]	[-0.002]
Salary=£30,000- £49,999	-0.134	-0.042
	(0.468)	(0.388)

							[-0.015]	[-0.007]
Salary=£50,000+							0.058	-0.561
							(0.592)	(0.502)
							[0.006]	[-0.085]
Wealth=£10,000 - £49,999							-0.123	-0.364
							(0.358)	(0.273)
							[-0.013]	[-0.066]
Wealth=£50,000 - £99,999							0.328	-0.578
							(0.436)	(0.360)
							[0.038]	[-0.1]
Wealth=£100,000-199,999							-0.034	-0.728
							(0.501)	(0.387)
							[-0.004]	[-0.124]
Wealth=£200,000+							-0.601	-1.570**
							(0.648)	(0.520)
							[-0.053]	[-0.223]
Constant	0.023	1.343*	-0.461	0.847	0.621	0.647	0.050	-1.480
	(0.683)	(0.567)	(0.746)	(0.609)	(1.949)	(1.578)	(2.341)	(1.868)
Observations	610	610	610	610	610	610	610	610
R^2	0.049	0.066	0.057	0.079	0.107	0.138	0.207	0.222
chi^2	16.648**	28.268***	19.632**	33.689***	37.406**	60.228***	74.117**	100.183***
	(df = 4)	(df = 4)	(df = 5)	(df = 5)	(df = 17)	(df = 17)	(df = 46)	(df = 46)

Notes: This table reports the results of logit regressions estimated with robust standard errors in the round parentheses and average marginal effects in the square brackets. **Investment decisions** are binary, with one representing that the respondent has decided to sell (positive sign) and zero if they have not (negative sign). **Risk level** is measured on a scale from 1 to 10, **Financial self-efficacy** measured on a scale from 6 to 24, **Resilience** measured on a scale from 10 to 50, **Positive affect** is measured on a scale from 10 to 50 and **Negative affect** on a separate construct also from 10 to 50. **Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism** are measures of personality on separate scales from 2 to 10. **Self-esteem** is measured on a scale from 10 to 50, **Trait anger** measured on a scale from 9 to 36 , **Intolerance of uncertainty** measured on a scale from 12 to 60, **Cognitive reappraisal** is measured on a scale from 3 to 15 and **Expressive suppression** on a separate construct from 2 to 10. **Past experience response** is a binary variable where similarly to the investment decision, one relates to selling and zero for not selling. **Time period** is a binary variable which equals one if the respondent took part in the study after the real-life market crash of February 2020 and zero if before the crash. **Financial experience** is a binary variable which equals one if the respondent has no experience with a financial advisor and zero if they do. **Gender** is a binary variable which equals one if the respondent is male and zero if female. **Age** is measured using seven categories ranging from 18 to more than 75 years where 18-24 is the reference level. **Marital status** is measured in five categories, and single is the reference level. **Education** is measured using four categories ranging from school leaver to higher degree, where school leaver is the reference level. **Occupation** is categorised into seven groups, retired is the reference level. **Salary** is measured in five categories ranging from less than £10,000 to more than £50,000, less than £10,000 is the reference level. Wealth is categorised into five groups ranging from £10,000 or less to more than £200,000, where less than £10,000 is the reference level. *, ** and *** indicate significance at the 5% and 1% and 0.1% levels, respectively.

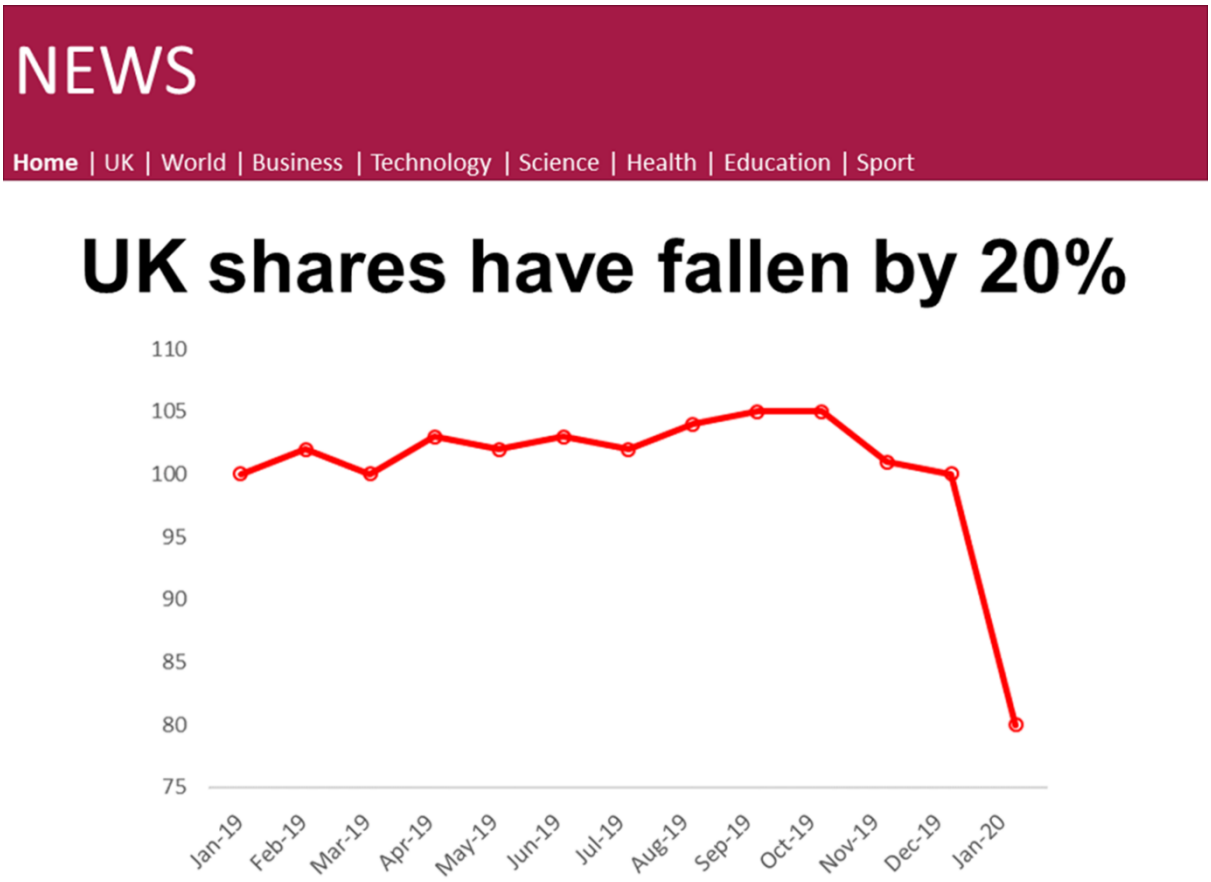
Figure 1: Scenario 1 example



Suppose that you have owned some shares for the past year. The news headline above shows there is a market crash and the value of your shares depicted in the graph has fallen by 20% (a fifth). What do you do?

- ○ Immediately seek financial advice
- ○ Wait some days with the possibility to lose more or to get back the previous losses before seeking financial advice
- ○ Take some of the remaining money out of the investment
- ○ Take all the remaining money out of the investment
- ○ Invest more to take advantage of the new lower stock prices
- ○ Stay invested and take no action

Figure 2: Scenario 2 example



Suppose that you have owned some shares for the past year. The news headline above shows there is a market crash and the value of your shares depicted in the graph has fallen by 20% (a fifth). **Your financial adviser suggests that you stay invested.** What do you do?

- ○ Take some of the remaining money out of the investment
- ○ Take all the remaining money out of the investment
- ○ Invest more to take advantage of the new lower stock prices
- ○ Stay invested and take no action