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# Personal life events and individual risk preferences

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DESIGN PAPER 210

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# CONTENTS



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**Abstract**

Using a large sample of the Dutch working population, this study investigates whether and how risk preferences are affected by personal life events. More specifically, we investigate whether changes in marital status, parenthood, and employment are associated with changes in risk preferences. We elicit risk preferences using survey questions. where respondents provide self-assessed preferences (stated preferences), as well as methods with financial incentives, where respondents can earn money (revealed preferences). Using register data of Statistics Netherlands, personal life events are linked with the elicited risk preferences of participants. Besides immediate effects of personal life events, we explore how long such effects last.

The results show that some personal life events are associated with changes in elicited risk preferences. Being recently divorced is associated with higher revealed risk aversion than being divorced for a longer time. Individuals who experienced a recent first parenthood show lower revealed risk aversion than individuals without children. Getting married and becoming unemployed seem to have only short-term effects on stated risk preferences.

## Samenvatting

In deze studie is, op basis van een grote steekproef onder de Nederlandse beroepsbevolking, onderzocht of en hoe persoonlijke levensgebeurtenissen invloed hebben op risicovoorkeuren. Meer specifiek is nagegaan of veranderingen in burgerlijke staat, het krijgen van een kind, en de positie op de arbeidsmarkt gerelateerd zijn aan veranderingen van risicovoorkeuren. Om risicovoorkeuren vast te stellen maken we zowel gebruik van vragenlijsten waarin personen hun voorkeuren kenbaar kunnen maken (*stated preferences*) als van methoden waarin financiële prikkels worden gebruikt waarbij respondenten geld kunnen verdienen (*revealed preferences*). Door gebruik te maken van informatie uit registers van het CBS worden de persoonlijke levensgebeurtenissen gekoppeld aan de gemeten risicovoorkeuren van de respondenten in het steekproefonderzoek. Naast effecten van de levensgebeurtenissen op risicovoorkeuren, onderzochten we hoe lang een dergelijk effect aanhoudt.

De resultaten tonen dat sommige persoonlijke levensgebeurtenissen gerelateerd zijn aan veranderingen van de vastgestelde risicovoorkeuren. Iemand met een recente echtscheiding achter de rug toont meer risicomijdend gedrag dan iemand wiens echtscheiding al langer geleden plaatsvond. En iemand die recent een eerste kind kreeg is minder risicomijdend dan iemand zonder kinderen. Trouwen en werkloos worden hebben slechts een kortdurend effect op zelf gerapporteerde risicovoorkeuren.

## 1. Introduction and related literature

Given the importance of people's risk preferences in a wide area of decision situations, measuring such preferences is essential towards providing accurate financial advice or services and is therefore often compulsory for financial institutions.[1] For practitioners in the financial industry and the pension sector, as well as for policymakers, it is thus important to know whether a person's risk preferences remain stable after measurement. Such stability is often implicitly assumed, but it is plausible that events that have large impact on a person's life will also affect risk preferences. We elicit risk preferences among a large heterogeneous sample of the Dutch population and link these to administrative panel data retrieved from the System of social Statistical Datasets (SSD) (Bakker et al. 2014) of Statistics Netherlands, to investigate the role of personal life events on risk preferences. We investigate both self-assessed risk preferences and risk preferences elicited with incentive-compatible methods, thus stated and revealed risk preferences, respectively. The range of personal life events that we consider to significantly affect people's circumstances are: marriage, divorce, birth of the first child, and becoming unemployed. We also investigate the persistence of potential shifts in preferences in response to these life events.

The existing literature shows wide heterogeneity in risk preferences that should be taken into account when formulating policies and issuing recommendations in the financial domains (see Dohmen et al. 2011). However, even when considering heterogeneity, a standard assumption in many economic analyses is that preferences are largely stable (see, for instance, Stigler and Becker 1977), implying that an individual's willingness to take risk does not change much over time. Yet, as Schildberg-Hörisch (2018) describes, there is evidence that risk preferences may be more variable than commonly assumed. Some studies suggest that risk preferences may systematically change over time (see the recent survey by Bokern et al. 2021a). Other studies indicate that risk preferences may fluctuate in response to personal life events. Repeated elicitation of risk preferences yields mostly positive correlations between measurements at different points in time. However, these correlations vary substantially in size (Chuang and Schechter 2015, Schildberg-Hörisch 2018). This observation could reflect

1 Throughout this paper, we use the terms risk preference, risk aversion, risk seeking and the like in a general sense. That is, risk preferences should not be seen as related to a specific theory of decision-making under risk, such as expected utility theory. Therefore, risk aversion does not necessarily relate only to the curvature of a Von Neumann-Morgenstern utility function but may also relate to risk-averse behavior due to probability weighting, as in rank-order expected utility theories or prospect theory. Although, this may be considered as an abuse of the term risk preference, we employ the term for the sake of convenience.

measurement error or that risk preferences of individuals simply fluctuate around a stable mean, but it might also reflect temporary or enduring changes in risk preferences, possibly triggered by personal experiences.

One of the open questions in this context is to what extent risk preferences may be influenced by external circumstances. If risk preferences are indeed malleable and change in response to exogenous shocks, this substantially complicates policy design and decision-making on behalf of others. For instance, choosing an investment strategy for a customer may require that a financial service provider takes into account changes in the personal circumstances of the customer during their mutual relationship. Therefore, responsible policy advice and customer service in the financial sector calls for systematic research regarding whether and, if so, how personal life events are associated with potential adjustments in risk preferences. Such research can, for example, help to identify whether and when the risk preferences of customers need to be reassessed.

The extent to which pension providers and other financial service providers need to take life events into account depends on the impact that those life events have on people's circumstances and attitudes. In the Dutch pension sector, a provider that offers an individual product is required to consider a client's risk attitudes, while a provider of a collective product is, under the new pension agreement, expected to take account of risk attitudes by cohort (Koolmees, 2019). Effects of life events on risk attitudes can be relevant indicators for both types of pension providers. In case of an individual product, a life event that is known to have an impact on risk attitudes would be a good time to reassess the client's risk attitudes. In case of a collective agreement, the awareness that life events affect risk attitudes is also important, even though life events affect individuals rather than cohorts. For example, if there is robust evidence that getting married or becoming a parent makes people more or less risk-averse, this could be taken into account when establishing an investment strategy for a cohort where such an event is likely to occur, i.e. in the 20-35 years age category. Blakstad et al.(2017) already noted that life events are a good time to activate pension participants. If these life events also affect people's pension-relevant attitudes toward risk, this provides additional reason to contact them at the time when they experience the life event. In a more general sense, if it can be robustly established that life events affect risk attitudes, suggesting that these attitudes are likely to vary over time, this calls for more frequent elicitation of risk attitudes to ensure that investment decisions taken by pension providers are in line with their clients' changing attitudes.

There is a body of literature that addresses how external shocks may influence risk preferences. First, a number of papers focus on the impact of natural catastrophes and civil conflicts on risk preferences (see Chuang and Schechter 2015 for an extensive

survey of the literature). Similarly, a very recent and growing body of literature analyzes whether and how the COVID-19 pandemic may change risk preferences (see Bokern et al. 2021b for a review of this literature). So far, however, this literature is inconclusive as the estimated effects of exogenous shocks on risk preferences vary widely and are sometimes even contradictory. This may be due to the large heterogeneity in settings where the studies are conducted and the large variety of measures these studies employ.

A second stream of studies analyzes how economic fluctuations interact with risk taking. For instance, Malmendier and Nagel (2011) investigate how the experience of stock market developments affects a person's willingness to take risks and to participate in the stock market. These authors find positive correlations between stock returns actually experienced and these variables.[2] Guiso, Sapienza and Zingales (2018), using a hypothetical lottery choice, elicit risk preferences among Italian investors before and after the financial crisis of 2008, and observe that investors exhibited more risk aversion following the crisis.

Finally, studies have been conducted on how risk preferences are correlated with individual demographic and socio-economic factors (e.g., Donkers et al. 2001, Harrison et al. 2007, Van Gaudecker et al. 2011, Dohmen et al. 2011, Falk et al. 2018, Galiera and Rutström 2021 and the references therein). These studies take a static approach and report correlations between a given variable that captures a person's characteristics at a given point in time (for instance, being married at the time when the study is conducted) and that person's risk preferences. In our study we take a more dynamic approach and consider the correlation between changes in demographic and socio-economic factors (for example, having married recently) and risk preferences.

A number of earlier studies that investigate the empirical relationship between personal life events and risk-taking do so indirectly, by considering naturally occurring events such as stock market participation and portfolio choice (see, for instance, Love 2010, Bertocchi et al. 2011, Christiansen et al. 2014, Zetterdahl 2015). These studies find significant effects of changes in marital status (such as marriage, divorce, or loss of partner) on financial behavior. At the same time, however, most of these studies include no measure for risk preferences, making it impossible to distinguish effects on preferences and beliefs; and they do not focus on the question to what extent observed patterns reflect changes resulting from the personal life event.

2 Note that Malmendier and Nagel (2011) attribute their result mostly to changes in beliefs and not changes in preferences.

Our study, on the contrary, focuses on the direct measurement of risk preferences and uses both survey and incentivized experimental measures to elicit stated and revealed risk preferences, respectively. To the best of our knowledge, our study is the first that investigates the impact of personal life events with incentivized experimental preference measures, and that compares this impact with the results of survey measures. This is important as it informs practitioners whether the elicitation method matters.

Several papers have focused on the link between personal life events and stated risk preferences. First, Hanewald and Kluge (2014) use the German Socioeconomic Panel (GSOEP) to confirm that married people hold riskier investments. However, they also find that self-reported willingness to take risk of married people is lower than that of singles. This seemingly contradictory observation suggests that the riskier investment may be due to a change in circumstances and/or risk capacity that comes with marriage, rather than with a change in risk preferences. The study also suggests the importance of using direct measures of risk preferences, in addition to self-reported investment behavior, to assess the impact of life events on risk preferences. Two other papers, by Browne et al. (2016) and Görlitz and Tamm (2020), investigate the impact of first childbirth on a survey measure for risk preferences, using longitudinal data from the GSOEP. Browne et al. find that people who become parents are more risk-averse and that they also report being more risk-averse after marriage. Separation from a partner, but not divorce, is found to correlate with reduced risk aversion. Görlitz and Tamm (2020) focus on the effect of becoming a parent and consider when a change in risk preferences occurs, relative to the birth, and how long this lasts. They find that both men and women state higher risk aversion already before the birth of their first child and a few years after that, before the stated risk preference converges back to the original level. At the same time, there is no evidence that this shift in risk preferences translates to riskier behavior in the labor market (e.g., the risk of injury at work or the variance of earnings). Kettlewell (2019) explores the impact of a variety of life events in a panel data set of Australian households, based on a survey measure of self-assessed risk preferences, and finds that risk aversion is stronger shortly after the birth of the first child and that this effect vanishes in subsequent periods.

Hetschko and Preuss (2020), using panel data from the GSOEP, investigate the responses of stated risk preferences to becoming unemployed and find that losing one's job is associated with increased risk aversion and that this effect exists already before the even t happened. Finally, Cho et al. (2018) observe, in a panel dataset from the US National Longitudinal Survey of Youth 79, that risk aversion, as measured by

responses to a hypothetical lifetime income gamble, becomes smaller with increased duration of unemployment.[3]

In our study, we consider both stated and revealed preferences for risk taking and relate these to CBS register data, allowing for a more comprehensive picture than previous studies that were restricted to either survey data or observational field data. Our register data include a comprehensive range of personal life events and address the impact of changes in marital status, parenthood and employment on risk preferences within a large sample of Dutch residents. In particular, we can track life events using panel data from the SSD of Statistics Netherlands to obtain an objective picture of the impact of an individual's personal events on risk preferences.

In summary, we find that some personal life events are indeed associated with shifts in risk preferences. Recent divorce, for example, is associated with higher revealed risk aversion than being divorced for a longer time, and a recent first parenthood is most robustly correlated with lower revealed risk aversion compared to non-parenthood. On the contrary, neither marriage nor unemployment is associated with robust shifts in risk preferences.

The remainder of the paper is organized as follows. Section 2 contains an overview of the design of our large-scale study, introduces our measures for stated and revealed risk preferences, and describes the official administrative data that we link to our risk preferences measures. Section 3 describes the results from our study of the impact of personal life events on risk preferences. Section 4 discusses our findings and contains conclusions.

3 In addition, several studies have considered the impact of health shocks on risk preferences. For example, Bucciol and Zarri (2015) find in a sample from the US Health and Retirement Study that being the victim of a physical attack and losing a child are associated with lower investments in risky assets. Decker and Schmitz (2016) use grip strength of individuals as an indicator for the general health condition of an individual and find that negative health shocks measured by significant decreases in grip strength are associated with an increase in stated risk aversion.

## 2 Study Design, Procedures and Data

### 2.1 Data collection

The risk preferences data used in this study were elicited in a two-wave online study in May and June of 2020, conducted with the aid of the research agency Flycatcher. The study consisted of incentivized experiments and questionnaires. Statistics Netherlands provided a random sample of 18,000 employees and 18,000 self-employed workers in the Netherlands; these were invited to participate in the study. In total, 4,282 participants (12%) took part in both waves of the study. The data elicited in the study were matched to the SSD of Statistics Netherlands to identify demographic and socio-economic variables for the 2014-2019 period. Using the register data from 2019, we classified 2,224 participants as employees, 1,480 as self-employed, 388 as both employed and self-employed, 17 as unemployed, 99 as retirees, and 74 as having another occupational status.[4]

It is worthwhile checking whether our sample of study participants deviates substantially from the general Dutch population. Table A1 in the Appendix lists descriptive statistics of several demographic and socio-economic characteristics of the study participants. The table reports unweighted statistics (averages, percentage shares) for these characteristics as well as population-weighted values. As can be seen from the table, the unweighted and weighted values do not differ strongly from each other for most variables considered in our study. Naturally, given that the sampling procedure oversampled the self-employed, such participants are strongly over-represented in our sample.[5] In addition, married persons, persons with a native Dutch background,[6] and persons with higher income and wealth levels appear to be somewhat over-represented. To take these differences into account, we include controls for all demographic and socio-economic characteristics in our parametric analysis of risk preferences.

4 We classify individuals using register data from 2019, because that year is closest to the implementation dates of our survey (May and June 2020). The sample was drawn, however, using a pool of individuals who were classified as employed and self-employed, respectively, in 2018. As occupational status can change over time, we have a number of individuals in 2019 with an occupational status other than employed or self-employed, despite the sample being drawn from a population of employed and self-employed persons.

5 The experiment and survey was part of a larger Netspar project "Understanding and Improving Pension Savings," which focused explicitly on the self-employed.

6 Statistics Netherlands defines a person as non-native Dutch (i.e., as a person with migration background) if the person him- or herself or at least one the parents was not born in the Netherlands.

Risk preferences were elicited with self-reports using survey questions, i.e. general and domain-specific risk questions based on Dohmen et al. (2011), as well as incentivized behavioral measures, i.e. multiple price lists (MPLs) in the tradition of Holt and Laury (2002). These measures are described in detail below.[7] Self-reported (i.e. stated) risk preferences have been shown to relate to self-reported behavior in risky decision situations, including financial decisions. MPLs provide a more direct measure of actual behavior under risk because these are incentivized decisions with real financial consequences, even though the consequences of these decisions may be considered as relatively minor relative to pension-related investment decisions. There are conflicting findings in the literature on how stake size may affect revealed risk aversion. A relatively recent Netspar Study (Potters et al. 2016) shows that behavior involving small and large stakes is similar when people make decisions under risk. Conversely, Fehr-Duda et al. (2010) confirm earlier work that found that relative risk aversion may increase when stake size increases. These authors go on to show that the increase in risk aversion appears to be largely due to probability weighting. Roughly speaking, one can conjecture that stated risk attitudes should be more reflective of a person's self-perceptions, while revealed preferences such as those elicited by MPLs provide a better reflection of how people actually deal with financial risk. However, the behavior captured by revealed preference measures may not only be driven by normatively relevant risk preferences, but also by biases such as loss aversion and probability weighting.[8]

To incentivize decisions, one out of every five participants who completed the two waves was randomly selected to be paid, based on their decisions in one randomly selected revealed preferences task (participants having performed a range of tasks, not only the risk elicitation tasks reported here). In addition, one iPad was raffled off among the participants who completed both waves. Possible earnings ranged from zero to €186 depending on the task. The average amount earned by the participants selected for payment was €78. Participants were fully informed about the procedures in advance.

7 In addition to risk preferences, a number of other preferences, including solidarity, ambiguity, and intertemporal preferences, were elicited through a variety of incentivized and self-reported measures. The study also collected data on a range of beliefs and biases. These additional measures are not reported here.

8 Bokern et al. (2021a) provides more details on these and other measures and their relation to field behavior.

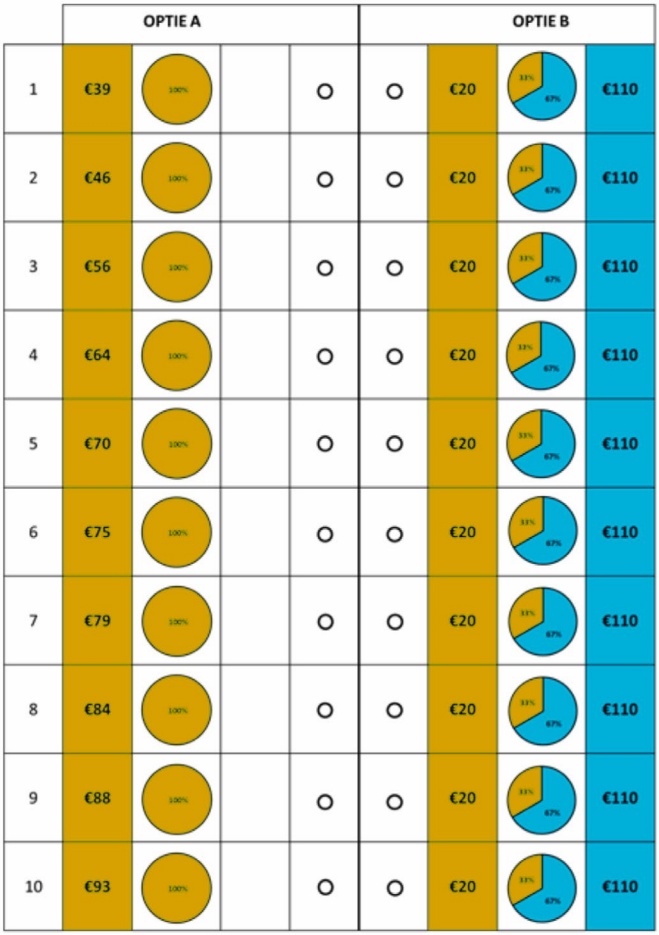
## 2.2 Risk preferences

*Stated risk preferences – Survey questions.* Our non-incentivized measure for stated risk preferences is based on the work of Dohmen et al. (2011). Participants identified themselves as being more or less willing to take risks on an eleven-point Likert scale ranging from "not at all willing to take risks" (0) to "very willing to take risks" (10), either in general or in specific domains. For general risk the question was: "To what extent, in general, are you willing or unwilling to take risks?" Similar questions were asked for risk preferences in the domains of career choice, health, and personal finances. For these domains, the question was: "How do you rate your willingness to take risks in the following areas?", followed by a list of the different domains. All four questions were asked in both waves of the study, thus providing a total of eight answers. Dohmen et al. (2011) conclude that risk preferences are "relatively stable across different contexts" (p. 542). We confirm this in our data, as Cronbach's alpha for the scale calculated from the eight separate questions yielded a value of 0.878. We therefore took the average of all eight answers as the measure of a person's self-reported risk attitude. In addition, to make comparison with the revealed risk preference measure easier, we reversed the scoring of the survey measure by subtracting it from 10 (the largest value on the Likert scale). Hence, a higher value of our proxy for stated risk preference implies a lower willingness of the individual participant to take risks, thus more risk aversion.

*Revealed risk preferences – Choices in multiple price lists.* Participants made choices in five different multiple price lists (MPLs), which were all presented in the second wave of the study. In each of these, participants made ten choices between a safer and a riskier lottery. Each lottery had two possible outcomes at most. In the riskier lottery, the difference between the better and the worse outcome was larger, leading to a higher variance. Figure 1 shows an example of part of one MPL that was used in the study. The full set of all five MPLs can be found in Appendix A2.
In each MPL, parameters of the lotteries were changed across choice situations in such a way that either the risky or the safer lottery became more attractive. The choices were ordered such that, when moving from the choice situation at the top of the MPL to the bottom, either the safer or the riskier option became relatively more attractive with each step. A consistent choice pattern thus implied that a participant switches from picking the safer to picking the riskier option (or vice-versa) no more than once in the MPL.

The parameter that changed with each step within an MPL was varied between MPLs. For two MPLs, the probability of receiving the better outcome was varied, with a higher probability making the riskier lottery more attractive. For two MPLs, the safer

*Figure 1. Example of a Multiple Price List (MPL)*




Note: The figure shows an MPL as it was displayed to the study participants. In each row, participants had to choose between a safer option (in the case shown, an amount paid with certainty, option A) and a riskier option (in the case shown, option B).

'lottery' was a fixed amount (the MPL displayed in Figure 1 is an example). In these MPLs, the fixed amount was varied (raised or lowered) at each step. In the remaining MPL the value of the better outcome in the riskier lottery was varied. We use this variety of types of MPLs because it limits a potential framing effect on measured risk preferences related to the presentation of a specific MPL (Bokern et al. 2021a).

Less risk aversion (or risk seeking) is revealed by switching between the safer and risky lottery. Relatively less risk-averse persons will choose the riskier option more frequently in the ten choices that they need to make per MPL. Likewise, individuals who are more risk-averse will choose the safer option more often. Therefore we use the average number of safe lottery choices over the five MPLs as a measure of a participant's revealed risk preference, with more frequent safe choices implying higher risk aversion.

Figures A1 and A2 in the Appendix show the distributions of both measures. Most observations lie in the middle of the parameter ranges for both measures, with only

a few individuals exhibiting extremely risk-averse or risk-seeking patterns. Still the variety of choices reflected in these figures shows that participants are highly heterogeneous concerning both stated and revealed risk preferences.

*Life events*. As explained above, we focus on a number of life events that arguably have a substantial impact on risk preferences and/or financial behavior: marriage, divorce, parenthood (for the first time), and unemployment. To identify these events we consider changes in these demographic or socio-economic variables, in other words, whether a participant's marital status, number of children, or employment status changed from one year to the next.

The data from Statistics Netherlands are yearly. Therefore, we can classify participants according to their status at the end of each calendar year and compare this to their status at the end of the previous calendar year. For example, marital status is recorded as either single, married (including registered partnership), divorced, or widowed. If an individual is classified as married in year T (i.e., end of 2019) but not in T-1 (i.e., end of 2018), then we infer that the individual has experienced the life event "marriage" in year T=2019. Similarly, a person not classified as divorced in year T-1 but classified as divorced in year T has experienced a divorce in year T. As to parenthood, we track the number of children that an individual has. If this number increased from zero in year T-1 to more than zero in year T, we know that the individual became a parent (for the first time) in year T. Finally, someone who was not unemployed in year T-1 but was unemployed in year T has become unemployed during year T.

## 3. Results

### 3.1 Risk preferences and individual characteristics

In the first step, we test how our measures for risk preferences relate to a person's demographic and socio-economic background by linking those measures to the official administrative data. We estimate two simple OLS regression models, one with the measure for stated risk preferences (Model 1) and one with the measure for revealed risk preferences (Model 2), as dependent variables. In both models, we include variables for the family and occupational status of an individual. In addition, we include controls for a participant's sex, age in years (at the time when we conducted the first wave of our study), squared age in years (to capture a potential non-linear link between age and risk preferences), migration background (Western and non-Western, with native Dutch as reference category), and level of education (high, low, and unknown, with intermediate as reference category). We also control for household wealth and standardized spendable household income in our regressions, both measured in tertiles of our sample (with the low tertiles as reference categories). In addition, we include answers to survey questions that measure financial literacy (Lusardi and Mitchell 2014) and cognitive reflection (Frederick 2005) in both models, to control for participants' understanding of topics related to financial decision-making and to cognitive ability in general. Finally, to account for noise in decisions in Model 2 for our revealed risk preference measure, we include controls for self-reported understanding of the experimental instructions and self-reported confidence in one's choices. We also control for two types of irrational decisions in the MPL. The first type consists of making dominated choices (i.e., choices a rational decision maker would never make). In some of the MPLs, one option would yield more money than the other option, independent of the outcome of the lottery. If, in that case, someone chose the option that yielded less money, this is recorded as making a dominated choice. These options were included specifically to identify individuals who may not have answered carefully, or perhaps did not fully understand the task. The second type of irrational behavior is multiple or inconsistent switching within one MPL. Due to the construction of the MPLs, participants should switch from the riskier to the safer option (or vice versa) only once. Participants who switched back and forth, or who switched in the direction of the less attractive option (for instance, from the safe to the risky option if consistent behavior would imply the opposite direction), are recorded as multiple or inconsistent switchers, respectively.

Table 1 summarizes the results of the OLS regressions by listing the statistically (in) significant effects of the variables for the described demographic and socio-economic characteristics. If an independent variable correlates significantly with one of our

measures of risk preferences, the table then displays the sign of the applicable regression coefficient: "+" indicates that the respective independent variable is associated with higher risk aversion, whereas "–" shows that the independent variable is correlated with lower risk aversion. Asterisks stand for the significance level of the regression coefficient, with one, two and three asterisks indicating significance levels of 10%, 5% and 1%, respectively. If a cell in the table is empty, this indicates that the regression coefficient of the corresponding independent variable is statistically insignificant. The full results of the regression models can be found in Table A2 in the Appendix.

*Table 1. Risk preferences and individual backgrounds of participants – Qualitative effects*

| Model<br>Dependent Variable | (1)<br>Stated risk preferences | (2)<br>Revealed risk preferences |
|---|---|---|
| Married incl. registered partnership | +*** | |
| Widowed | | |
| Divorced | –* | |
| Children | –** | –** |
| Self-employed | –*** | |
| Employed as well as self-employed | –*** | |
| Unemployed | –* | |
| Pension | | |
| Other Income | –* | |
| Female | +*** | +*** |
| Age | +*** | +*** |
| Age squared | –*** | –** |
| Western migration | | |
| Non-western migration | | |
| Unknown education level | | |
| Low education level | | |
| High education level | | |
| Wealth medium tertile | +** | |
| Wealth high tertile | +** | |
| Income medium tertile | –** | –** |
| Income high tertile | –*** | –*** |
| Observations | 4,276 | 4,269 |
| Controls for understanding | Yes | Yes |
| $R^2$ | 0.110 | 0.100 |
| Adjusted $R^2$ | 0.105 | 0.094 |

Note: The table lists the signs and significance levels of regression models, with our measures for stated risk preferences (Model 1) and revealed risk preferences (Model 2) as dependent variables. Higher values of the risk preferences measures are associated with higher risk aversion. *, ** and *** denominate significance at the 10%, 5% and 1% level, respectively; robust standard errors. Empty cells represent insignificant correlations. The number of observations differs from the full sample (N=4,282) because of missing observations at the end of 2019 in the administrative data (Model 1 and Model 2) and missing data in a control question for our revealed risk preference measures (Model 2).

Regarding family background, we observe significant effects mainly for the stated risk preference measure (Model 1). Being married is associated with higher stated risk aversion, which is consistent with the findings of Dohmen et al. (2011). Participants who are divorced tend to be more risk tolerant; this effect is significant at the 10% level. The variable for having children is significant and negative, indicating that individuals who have children are less risk-averse than those without children. This effect is also found for the revealed risk attitude in Model 2. Regarding occupational status, we find, in line with previous studies (Dohmen et al. 2011, Falk et al. 2018), that self-employed individuals call themselves less risk-averse, an effect that is also found for participants who are classified as self-employed as well as employed. Interestingly, however, we do not find a corresponding result for revealed preferences.[9] Finally, being unemployed is associated with a tendency towards lower risk aversion.

Importantly, a person's age and sex are significantly correlated with both stated and revealed risk preferences, and in the direction suggested by previous literature (e.g., Donkers et al. 2001, Von Gaudecker et al. 2011, Dohmen et al. 2011, Falk et al. 2018). Female and older study participants are more risk-averse and, in the latter case, the significant effect of squared age suggests a non-linear relationship between age and risk preferences. Also in line with previous findings, we find that participants with medium or high income are significantly less risk-averse than participants with low income (Donkers et al. 2001, Dohmen et al. 2011) for both stated and revealed risk preference measures. Conversely, we observe that higher wealth is associated with higher stated risk aversion (Model 1), but not with risk preferences revealed in the MPLs (Model 2). Overall, risk preferences in our sample correlate significantly with many demographic and socio-economic characteristics, in the way previous studies suggest.[10]

9 In addition, we find that participants who receive their main income from other sources are significantly less risk-averse, but this effect is only found in Model 1 for stated risk preferences.

10 The effect sizes reported as regression coefficients in Table A2 are economically significant. The standard deviation for our stated preference measure is 1.7 (see Figure A1). This implies, for example, that being female (with a coefficient of 0.504) decreases the willingness to take risk by about one third of a standard deviation. This is comparable to Dohmen et al. (2011), who found an effect size for being female ranging between one-fifth and two-fifths of a standard deviation, depending on the domain considered. To illustrate the economic significance of the effect that we find, note that in Dohmen et al. (2011) a one-third standard deviation decrease in the general willingness to take risk was associated with a 3% decrease in the probability of holding stocks (relative to an unconditional probability).

### 3.2 Change in risk preferences and personal life events

Our main interest lies in the effects of recent personal life events on stated and revealed risk preferences. To identify such effects, we start with the baseline models described above, controlling for demographic and socio-economic backgrounds of participants, and we include a dummy variable that captures changes in family or employment status in each model. Thus, we measure both the effect of family and employment status as such as well as the effect of personal life events. In case of a change in the family status of an individual, we investigate whether the time since the change occurred has an impact on risk preferences. For example, a person who has experienced the life event "marriage" in 2019 is identified as both married and recently married, while someone who has been married for several years is identified as married, but not as recently married. This allows us to compare a recently married person with someone who has been married earlier, by exploiting the coefficient of the indicator variable of having experienced the life event "marriage". Moreover, we can compare a recently married person with a single person (the reference category) by adding up the estimated effects of the indicator variables for being married and for the life event (recent) marriage, and testing whether this joint effect is significantly different from zero. Similarly, we can compare a newly divorced person with a long-time divorced person or a single person, and a new parent with both longer-term parents and non-parents.

Unemployment is somewhat different. Contrary to family status, unemployment status changes more frequently over time: someone who is unemployed in 2019 will highly likely have been employed in the previous years, and many persons who were unemployed in earlier years find employment in 2019. Given these fluctuations in employment status and the generally low number of unemployed individuals in our sample, the analysis of the combined effect of being unemployed in 2019 and becoming unemployed some years earlier is not meaningful. We therefore focus only on the effect of being unemployed at some point prior to our risk preferences measurement relative to all other participants in our sample.

In our regression analysis, we estimate separate models for each investigated personal life event, with a different maximum time span since the change in status occurred. In particular, we include an indicator variable either for one year, three years or five years since the life event occurred. With this approach, we investigate the accumulated effect of the life event over the respective period and assess the persistence of the effect of life events on risk preferences.

Table 2 lists the frequency of the different life events---marriage, divorce, first parenthood, and unemployment---in our sample. The table shows that in each

*Table 2. Frequency of personal life events*

| | Within last year | | Within last 3 years | | Within last 5 years | |
|---|---|---|---|---|---|---|
| | obs. | % total sample | obs. | % total sample | obs. | % total sample |
| Married | 82 | 1.9 | 210 | 4.9 | 347 | 8.1 |
| Divorced | 21 | 0.5 | 76 | 1.8 | 119 | 2.8 |
| First child | 64 | 1.5 | 168 | 3.9 | 284 | 6.6 |
| Unemployed | 17 | 0.4 | 35 | 0.8 | 111 | 2.6 |

Note: The table lists the number of study participants who experienced a specific life event either within the last year, the last three years, or the last five years before our study was conducted. The total number of participants in our study is N = 4,282.

time period, the different life events are experienced by a relatively small number of individuals. For instance, 82 individuals in our sample (or 1.9% of the observations) married in 2019, the year before our study was conducted. If we extend the time span since the event of marriage to three years (2017 – 2019) or five years (2015 – 2019), the number of cases increases to 4.9% and 8.1%, respectively. Unemployment is the life event that is observed with the lowest frequency in our data set, with 0.4%, 0.8% and 2.6% of participants experiencing this event within one year, three years and five years, respectively, before our study was conducted.[11]

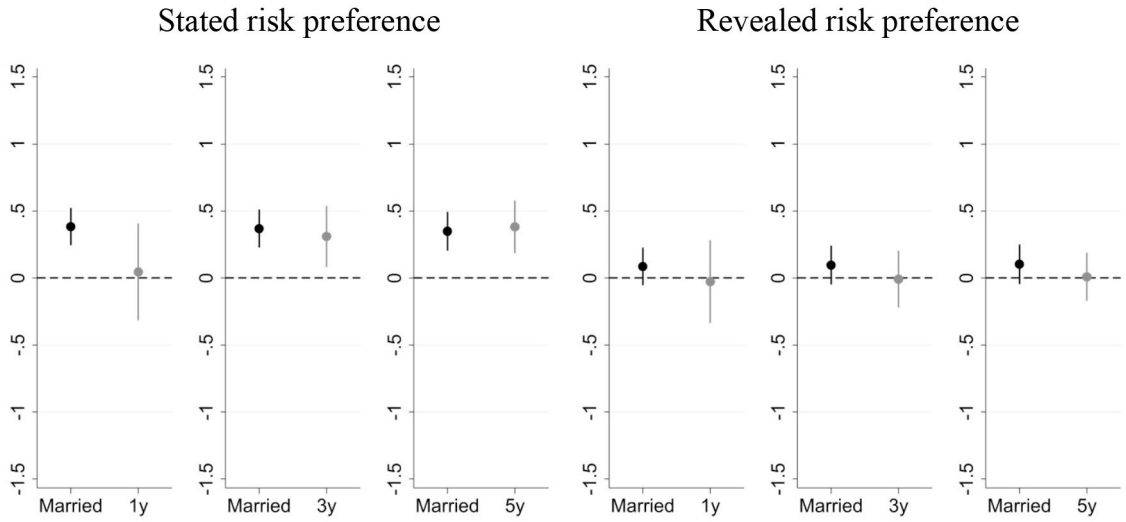
Below, we report the estimated effects of life events with the help of graphical representations. The underlying OLS regressions, which report the coefficients and significance levels of the joint effect of the status and associated recent experience of the life event, can be found in Tables A3 to A5 in the Appendix. Figures 2 to 4 below display the results for the different life events. They are all set up in the same way and based on the same empirical approach.

*Marriage*. Figure 2 displays estimated effects of marriage on stated risk preferences (three left panels) and revealed risk preferences (three right panels). Every panel displays the estimated effect of the status of being married (black dot in each graph) and the joint effect of both being married and having recently married (gray dot in each panel), relative to individuals who are singles (displayed in the graph as the horizontal line at 0).[12] For both stated and revealed risk preferences, the three

11 The relatively low numbers can be attributed to the participant sample of our large-scale study, as it focused on individuals who were classified as being either employed or self-employed.

12 The combined effect is determined by adding up the coefficient estimates of the dummy variables for being married and for having recently married.

*Figure 2. Risk preferences and marriage*




Note: The figure shows the estimated effect on risk aversion of the status variable for being married (black dot in each panel) and the joint effect of being married and recently having married within one, three, and five years, respectively, prior to the risk preferences measurement (gray dot in each panel). The reference group (represented by the horizontal line at 0) consists of singles. Vertical lines indicate 95% confidence intervals. The three left and right panels show estimates for stated and revealed risk preferences, respectively.

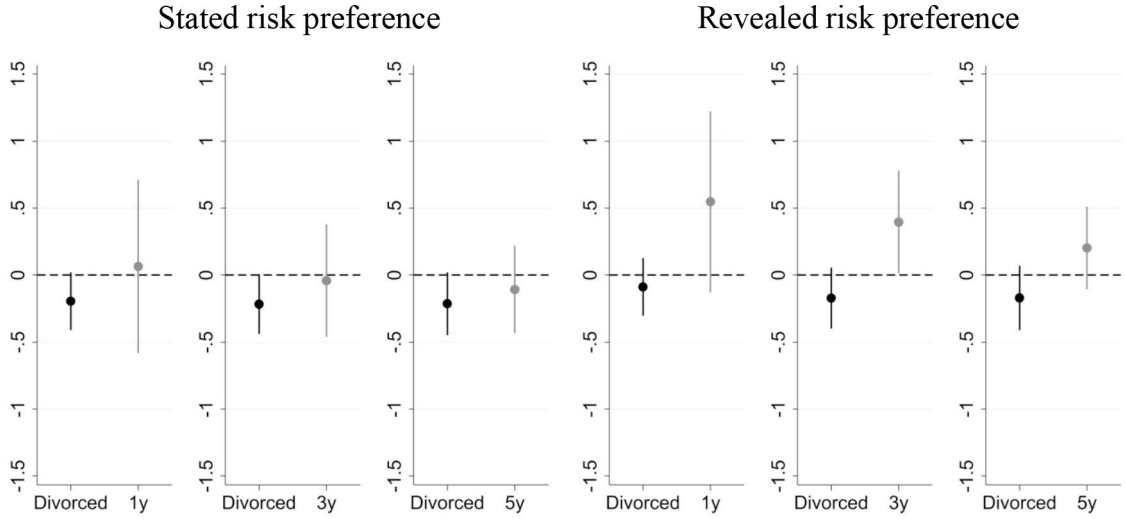
different panels, from left to right, show the effects of being married and having married within one, three, and five years, respectively, before our study (i.e., the risk preferences measurement). Specifically, in Figure 2, the estimated effect for "1y" is the combined effect of being married in 2019 and having married in 2019, while "3y" and "5y" are the combined effects of being married in 2020 and having married in the three years before our study (2017, 2018 or 2019) and the five years before our study (2015, 2016, 2017, 2018 or 2019), respectively.

The figure shows that, for stated risk aversion (three left panels), married people report a higher risk aversion than singles in all models ($p<0.001$). In addition, we find a short-term shift in the stated risk preference of having married recently. Specifically, having married in the year before our study took place lowers the degree of stated risk aversion to the level of stated risk aversion of singles. The combined effect of being married and having married in 2019 is not significantly different from zero ($p=0.806$) and thus not different from stated risk preferences of singles. However, this shift in stated risk preferences is only transitory and not observed if we extend the period of our analysis to three and five years, respectively. For revealed risk preferences (three right panels), we do not observe any differences between married and single

individuals, and the life event "marriage" is not associated with any shifts in this measure either.

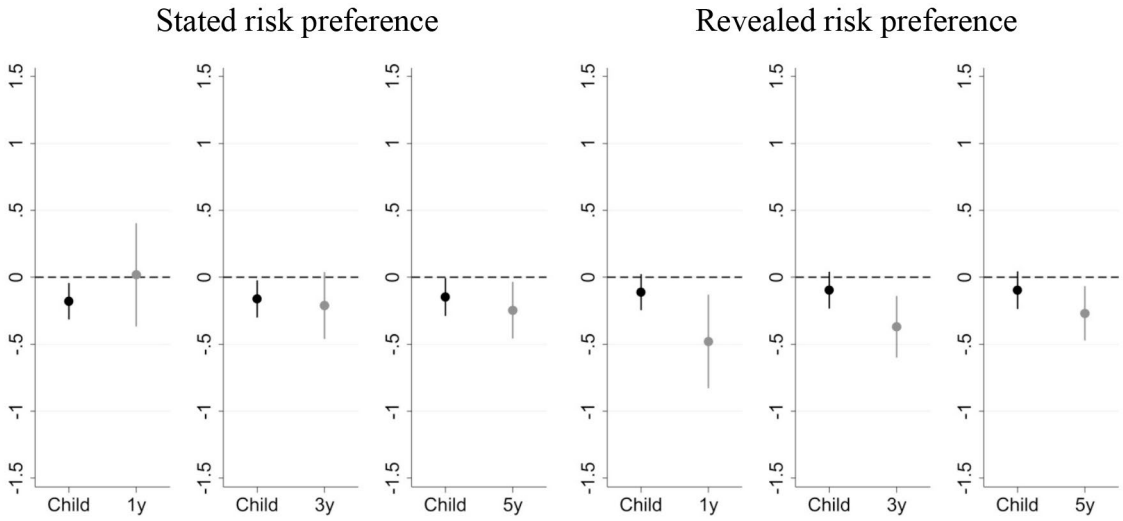
*Divorce*. Figure 3 shows the estimated effects of divorce on elicited risk preferences. The observed patterns are similar for both stated and revealed risk preferences. Being divorced recently is associated with increased risk aversion relative to those individuals who are divorced already for a longer time (and who have similar risk preferences as singles). For stated preferences, however, the effects of either being divorced or having experienced divorce recently are not statistically different from zero. For revealed risk preferences, the respective regression coefficients capturing individuals who became divorced in the past one, three, and five years, respectively, before the risk preferences measurement, compared to those who have been divorced for a longer time, are statistically significant at p=0.070, p=0.006, and p=0.032. The decreasing coefficient estimates over time and the insignificant effect of the status of being divorced suggest that, over time, risk aversion of more recently divorced people converges to those of other divorced people (and single persons). A potential reason for this is that recently divorced individuals may become more risk-averse due to the higher perceived (economic) uncertainty associated with the divorce, which is eventually mitigated as time passes since the divorce.

*Figure 3. Risk preferences and divorce*




Note: The figure shows the estimated effect on risk aversion of the status variable for being divorced (black dot in each panel) and the joint effect of both being divorced and recently having experienced a divorce within one, three, and five years, respectively, prior to the risk preferences measurement (gray dot in each panel). The reference group (represented by the horizontal line at 0) consists of singles. Vertical lines indicate 95% confidence intervals. The three left (and right) panels show estimates for stated (and revealed) risk preferences.

*Figure 4. Risk preferences and first parenthood*




Note: The figure shows the estimated effect on risk aversion of the status variable for having children (black dot in each panel) and the joint effect of having children and recently becoming a parent, that is, having experienced the birth of the first child within one, three, and five years, respectively, prior to the risk measurement (gray dot in each panel). The reference group (represented by the horizontal line at 0) consists of individuals with no children. Vertical lines indicate 95% confidence intervals. The left (and right) panels show estimates for stated (and revealed) risk preferences.

*Parenthood*. Figure 4 depicts the association between elicited risk preferences and first parenthood. For stated risk preferences, the figure shows that individuals who became parents for the first time within the last three and five years, respectively, are significantly less risk-averse than individuals without children at p=0.098 and p=0.022, respectively, for the combined effects. Yet, this effect for stated risk preferences vanishes for having experienced first parenthood within one year prior to the study. For revealed risk preferences, individuals who became parents recently are significantly less risk-averse than individuals without children (p=0.007, p=0.002, p=0.009 for the one-, three-, and five-year specification, respectively). These results are interesting because they contradict previous results on self-assessed risk preferences that showed at least a temporary increase in risk aversion around the time when individuals self-reported having become parent for the first time.

*Unemployment*. Finally, we investigate the relation between being unemployed and risk preferences. As explained above, the fluctuations in employment status over the years do not allow meaningful comparison of individuals who recently became unemployed and those who have been unemployed over a longer period. Instead, we compare individuals who experienced unemployment in the last one, three,

and five years, respectively, to all other individuals in our sample. For stated risk preferences, we find that experiencing unemployment within the last year or the last three years tends to lower the aversion to risk (marginally) significantly compared to those who did not become unemployed in the same period (p=0.060 and p=0.018). In all other models, the coefficient estimate of the variable for becoming unemployed is insignificant. Thus, we observe no strong and systematic associations between the status of being unemployed and stated or revealed risk preferences. The results of the corresponding regression models are reported in Table A6 in the Appendix.

## 4. Discussion and conclusion

In our study, we investigate the potential relation between recent personal life events and stated and revealed risk preferences, by linking survey and experimental risk elicitation data to official administrative data. We find that the relation between our risk preference measures and demographic and socio-economic characteristics of individuals is largely in line with results reported in previous studies. Importantly, we also find evidence that some personal life events are related to shifts (temporary or longer) in risk preferences.

Interestingly, except for first parenthood, the results for stated and revealed preferences do not coincide. Specifically, we find that individuals who are recently divorced tend to display higher revealed risk aversion compared to those who were divorced a longer time ago. In addition, first parenthood is associated with lower revealed risk aversion compared to individuals without children, a finding that is contrary to previously reported results based on survey measures, which instead found temporary increases in risk aversion. For marriage and unemployment, we only observe weak effects related to stated risk preferences and no effects for revealed risk preferences. For instance, entering marriage decreases stated risk aversion only in the short term.

In our study, we have to rely on cross-sectional data and consequently can only account for individual heterogeneity to a limited extent. A more effective way to control for heterogeneity would be to follow individuals over a longer period while repeatedly eliciting risk preferences. However, to the best of our knowledge, to date no study has elicited data on revealed risk preferences repeatedly over an extended period of time for a large and heterogeneous population sample. Our results, that personal life events are associated with changes in revealed risk preferences, indicate that it would be important to repeatedly elicit both hypothetical and incentivized preference measures over a longer period, while at the same time tracking changes in the personal circumstances of individuals.

More generally, the relatively low number of observations of individuals in our data set who experience specific life events means that we cannot precisely estimate the size of effects and may prevent us to detect statistical significance of existing effects. We might thus underestimate the impact of life events. Nevertheless, the diverging results for revealed and stated risk preferences suggest that perceived and actual risk preferences potentially respond differently to life events. Consequently, the inference regarding whether and how life events shift risk preferences may differ

between observing the actual behavior of individuals and asking them to subjectively assess their preferences.

This potential discrepancy indicates that the difference between stated and revealed risk preferences needs to be explored more carefully. Stated risk preferences are likely to relate to the self-perceived risk attitudes of individuals, whereas revealed risk preferences can be expected to relate more to actual behavior under risk (e.g, Ajzen and Fishbein 1980). In the academic literature there is no consensus yet on the measures that best capture the underlying risk preferences of decision makers (see, e.g., Charness at al. 2020, Bokern et al. 2021a, and the references cited therein). The correlations between different risk preference measures are generally not very large.[13] Moreover, since most of the existing evidence that relates risk preference measures to field behavior is based on subjective self-assessments, vital evidence is missing on the relation between risk preference measures and actual field behavior (see Bokern et al. 2021a for an overview).

Whether stated or revealed risk preferences are more relevant for pension providers depends on their goals and their perceived relation to their clients. Clients may expect a pension provider to act primarily when they themselves perceive a change in risk attitudes. Action based on stated preferences may therefore lead to greater client satisfaction, assuming that the client is aware of this policy. However, a pension provider who wants to act in the best interest of clients, in a benevolent and paternalistic manner, would do better to act on the basis of the client's revealed preferences. These may be a better indication of true preferences as they reflect what a client would do when faced with making a risky decision. However, as long as there is not more solid evidence on which measures capture underlying risk preferences best, it seems advisable to elicit these preferences using a variety of measures. This we recommend also in the context of the multiplicity of available measures for risk preferences (Bokern et al. 2021a).

As to the practical implications of our study, we note that, given that marriage and unemployment may affect stated risk attitudes, while becoming a parent is associated with a change in revealed risk attitudes, these life events might be important for pension providers to consider. Providers of individual products may want to (re-)elicit risk attitudes when these events occur, and collective pension funds may want to reassess risk attitudes for a cohort where marriage and/or becoming a parent are most likely (e.g., for the age cohort 20-35 years).

13 In our study, we observe a significantly positive Pearson's correlation between the stated and the revealed preference measure of 0.286 ($p < 0.001$).

An important further practical consideration when eliciting risk attitudes shortly after a life event is that a shift in risk attitudes may be either temporary or long-lasting. As to marriage, for example, we find in our sample that married people are generally more risk-averse based on stated risk attitudes, whereas getting married lowers stated risk aversion in the short term. Hence, the point in time when risk attitudes are elicited can lead to different conclusions. Moreover, long-lasting changes of preferences are presumably more relevant for pension providers than short-term shifts. Knowing when to elicit risk attitudes relative to a life event is therefore equally important as the effect of the life event itself.

So far, the evidence on the impact of personal life events on people's attitudes towards risk is fragmented, and the results are mixed. It is important to note that life events relevant for risk preferences are not necessarily limited to those that we study in this paper. There are many life events for which we had no or insufficient data, but which could have equal or even bigger impact on risk preferences: for example, the death of a child or spouse, a serious illness, or a major career change. As we find in our sample that the effects of life events on risk attitudes vary substantially depending on the specific event, we cannot simply generalize our findings to other life events that might also change risk preferences. Assessment of the relevance of a broad range of personal life events on risk attitudes requires further systematic research.

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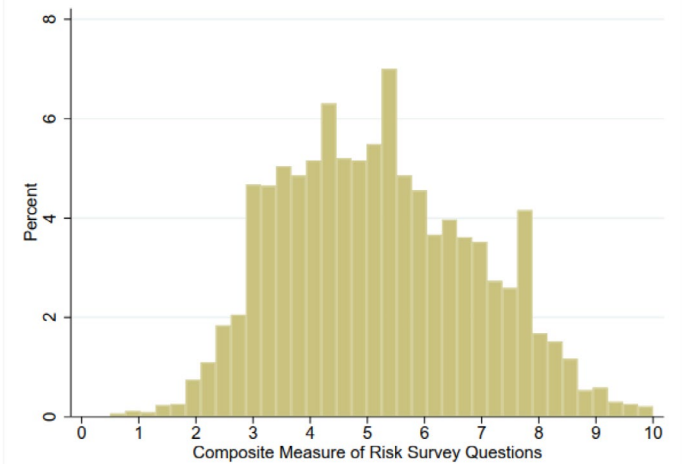
# Appendix

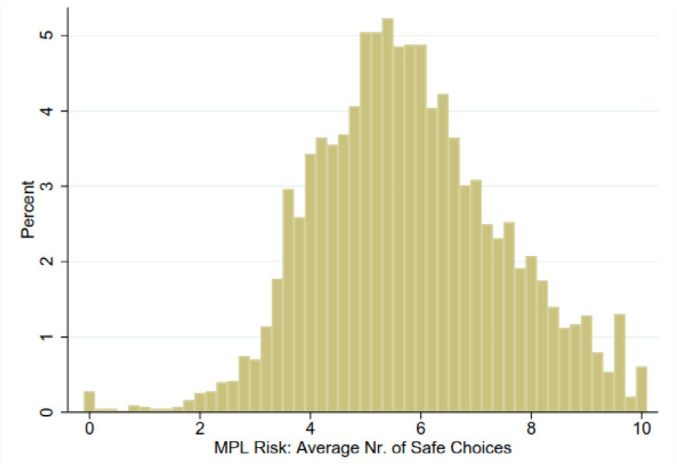
## A1. Additional results

*Figure A1. Distribution of stated risk preferences (in % of participants)*




Note: The composite measure for stated risk preferences combines the responses to all four risk preference survey questions (general willingness to take risks, risk preferences in the financial, health, and occupational domains) from both waves into a combined scale calculated as the average of the responses to all eight questions. The scoring of the combined measure is reversed so that higher values reflect higher risk aversion. The mean is 5.2, with a standard deviation of 1.7.

*Figure A2. Distribution of revealed risk preferences (in % of participants)*




Note: The proxy for revealed risk preferences refers to the average number of safe choices per MPL (out of ten choices per MPL that a study participant had to make). Depending on the specific design of the MPL, a safe choice refers either to the choice of a monetary amount that is paid with certainty over a risky lottery, or to the choice of a lottery with a lower variance of payoffs over a lottery with a higher variance. A higher number of safe choices implies a higher risk aversion on the part of the participant. The mean is 5.8 with a standard deviation of 1.7.

*Table A1. Descriptive statistics – Unweighted and population-weighted averages/shares*

| | **Unweighted** Average/Share in % | **Weighted** Average/Share in % |
|---|---|---|
| **Sex** | | |
| Male | 57 | 54 |
| Female | 43 | 46 |
| **Marital status 2019** | | |
| Not married | 33 | 37 |
| Married incl. registered partnership | 58 | 52 |
| Widowed | 1 | 1 |
| Divorced | 9 | 10 |
| **Occupational status 2019** | | |
| Employee | 52 | 74 |
| Self-employed | 35 | 14 |
| Employed as well as self-employed | 9 | 7 |
| Unemployed | 0 | 1 |
| Pension | 2 | 2 |
| Other | 2 | 2 |
| **Children 2019** | | |
| No children | 32 | 34 |
| Children | 68 | 66 |
| **Migration background** | | |
| Native | 87 | 80 |
| Western background | 9 | 11 |
| Non-Western background | 4 | 9 |
| **Educational level** | | |
| Low | 4 | 5 |
| Middle | 23 | 26 |
| High | 46 | 45 |
| Unknown | 27 | 24 |
| **Wealth tertiles*** | | |
| 1 (Low tertile) | 33 | 44 |
| 2 (Middle tertile) | 33 | 32 |
| 3 (High tertile) | 33 | 23 |
| **Income tertiles*** | | |
| 1 (Low tertile) | 33 | 40 |
| 2 (Middle tertile) | 33 | 35 |
| 3 (High tertile) | 33 | 26 |
| **Age (SE)** | 47 (0.2) | 45 (0.2) |
| N | 4,282 | 7,173,795** |

Note: The table lists the demographic and socio-economic characteristics of the participants in our sample. Unweighted averages/shares refer to unweighted data; weighted averages/shares refer to population-weighted data; income tertiles are based on the sample; * data on income and wealth include six missing observations and are thus based on 4,276 individuals; ** number of weighted observations.

*Table A2. Risk attitudes and individual backgrounds of participants*

| Model | (1) | | (2) | |
|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | Revealed risk preference | Robust std. error |
| Married incl. registered partnership | 0.358*** | (0.069) | 0.078 | (0.069) |
| Widowed | −0.026 | (0.243) | 0.003 | (0.325) |
| Divorced | −0.179* | (0.107) | −0.049 | (0.108) |
| Children | −0.167** | (0.069) | −0.132** | (0.067) |
| Self-employed | −0.775*** | (0.057) | −0.075 | (0.058) |
| Employed as well as self-employed | −0.536*** | (0.088) | 0.031 | (0.085) |
| Unemployed | −0.562* | (0.298) | −0.060 | (0.414) |
| Pension | −0.085 | (0.183) | −0.001 | (0.182) |
| Other | −0.398* | (0.219) | 0.146 | (0.205) |
| Female | 0.504*** | (0.052) | 0.349*** | (0.052) |
| Age wave 1 | 0.062*** | (0.017) | 0.048*** | (0.017) |
| Age wave 1 squared | −0.000*** | (0.000) | −0.000** | (0.000) |
| Western background | 0.126 | (0.090) | 0.057 | (0.092) |
| Non-western background | −0.037 | (0.131) | −0.029 | (0.117) |
| Unknown educational level | 0.093 | (0.075) | −0.010 | (0.076) |
| Low educational level | 0.115 | (0.144) | 0.135 | (0.135) |
| High educational level | −0.033 | (0.067) | −0.040 | (0.066) |
| Wealth middle tertile | 0.133** | (0.064) | 0.067 | (0.064) |
| Wealth high tertile | 0.174** | (0.072) | 0.015 | (0.071) |
| Income middle tertile | −0.137** | (0.064) | −0.132** | (0.064) |
| Income high tertile | −0.344*** | (0.067) | −0.335*** | (0.067) |
| Nr. of correct answers in CRT | 0.080*** | (0.025) | −0.082*** | (0.025) |
| Nr. of correct answers Financial Literacy | −0.129*** | (0.024) | −0.062** | (0.025) |
| MPL Instructions Grade | | | 0.044** | (0.022) |
| MPL Confidence Grade | | | 0.039** | (0.019) |
| MPL Dominated Choice | | | 1.649*** | (0.115) |
| MPL Multiple Switching | | | −0.538*** | (0.072) |
| MPL Within List Inconsistent Switching | | | −0.676*** | (0.120) |
| Constant | 3.763*** | (0.374) | 4.154*** | (0.431) |
| Observations | 4,276 | | 4,269 | |
| $R^2$ | 0.110 | | 0.100 | |
| Adjusted $R^2$ | 0.105 | | 0.094 | |

Note: The table reports the results of OLS models with our measures for stated (Model 1) and revealed risk preferences (Model 2) as the dependent variables. Higher values for the risk preference measures are associated with higher risk aversion. *, **, *** denominate significance at the 10%, 5%, and 1% level, respectively. Robust standard errors of regression coefficients in parentheses.

*Table A3. Risk preferences and marriage*

**a) Recently married (within 1 year)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| marry_1year | -0.338* | (0.184) | 0.066 | -0.113 | (0.159) | 0.478 |
| Married incl. registered partnership | 0.383*** | (0.071) | 0.000 | 0.086 | (0.071) | 0.226 |
| Significance joint effect | p = 0.806 | | | p= 0.865 | | |

**b) Recently married (within 3 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| marry_3years | -0.058 | (0.114) | 0.613 | -0.105 | (0.108) | 0.331 |
| Married incl. registered partnership | 0.369*** | (0.073) | 0.000 | 0.097 | (0.073) | 0.189 |
| Significance joint effect | p = 0.008 | | | p= 0.937 | | |

**c) Recently married (within 5 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| marry_5years | 0.033 | (0.098) | 0.738 | -0.094 | (0.091) | 0.299 |
| Married incl. registered partnership | 0.349*** | (0.074) | 0.000 | 0.103 | (0.076) | 0.171 |
| Significance joint effect | p < 0.001 | | | p= 0.920 | | |

Note: The table reports the results of OLS regressions, with our measures for stated risk preferences (Model 1) and revealed risk preferences (Model 2) as the dependent variables. Higher values for the risk preference measures indicate higher risk aversion. *,**,*** denominate significance at the 10%, 5%, and 1% level, respectively. Robust standard errors of regression coefficients in parentheses. All regression models include the same set of independent variables as the models reported in Tables 1 and A1. In addition, a binary variable "marry_xyear(s)" is included to capture if the life event occurred recently; within one year (panel a), within three years (panel b), or within five years (panel c) before our study was conducted. The estimated effect of this variable is to be interpreted as the difference in risk preference between individuals who experienced the life event recently – having married within one, three, and five years, respectively – compared to individuals who experienced the life event at an earlier point in time. The joint effect captures being married and having married within one, three, and five years, respectively, before our study was conducted; it is calculated as the sum of both regression coefficients. A significant joint effect indicates a significant difference in the risk preference measure compared to the reference group of single individuals.

*Table A4. Risk preferences and divorce*

**a) Recently divorced (within 1 year)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk Preference | Robust std. error | p-value |
| divorce_1year | 0.259 | (0.336) | 0.441 | 0.635* | (0.351) | 0.070 |
| Divorced | -0.194* | (0.110) | 0.078 | -0.088 | (0.111) | 0.428 |
| Significance joint effect | p = 0.844 | | | p= 0.122 | | |

**b) Recently divorced (within 3 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| divorce_3years | 0.175 | (0.224) | 0.434 | 0.567*** | (0.206) | 0.006 |
| Divorced | -0.216* | (0.114) | 0.057 | -0.171 | (0.116) | 0.140 |
| Significance joint effect | p = 0.846 | | | p= 0.043 | | |

**c) Recently divorced (within 5 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| divorce_5years | 0.106 | (0.180) | 0.556 | 0.373** | (0.173) | 0.032 |
| Divorced | -0.213* | (0.120) | 0.076 | -0.170 | (0.123) | 0.168 |
| Significance joint effect | p = 0.518 | | | p= 0.197 | | |

Note: The table reports the results of OLS regressions with our measures for stated risk preferences (Model 1) and revealed risk preferences (Model 2) as the dependent variables. Higher values for the risk preference measures indicate higher risk aversion. *,**,*** denominate significance at the 10%, 5%, and 1% level, respectively. Robust standard errors of regression coefficients in parentheses. All regression models include the same set of independent variables as the models reported in Tables 1 and A1. In addition, a binary variable "divorce_xyear(s)" is included to capture if the life event occurred recently; within one year (panel a), within three years (panel b) or within five years (panel c) before our study was conducted. The estimated effect of this variable is to be interpreted as the difference in risk preference between individuals who experienced the life event recently – having been divorced within one, three, and five years, respectively – compared to individuals who experienced the life event at an earlier point in time. The joint effect captures being divorced and having been divorced within one, three, and five years, respectively, before our study was conducted; it is calculated as the sum of both regression coefficients. A significant joint effect indicates a significant difference in the risk preference measure compared to the reference group of single individuals.

*Table A5. Risk preferences and first parenthood*

**a) Recent first parenthood (within 1 year)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| firstchild_1year | 0.199 | (0.199) | 0.318 | −0.369** | (0.180) | 0.040 |
| Children | −0.179*** | (0.070) | 0.010 | −0.111 | (0.069) | 0.107 |
| Significance joint effect | p = 0.921 | | | p= 0.007 | | |

**b) Recent first parenthood (within 3 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| firstchild_3years | −0.050 | (0.127) | 0.693 | −0.274** | (0.117) | 0.019 |
| Children | −0.161** | (0.071) | 0.024 | −0.095 | (0.070) | 0.175 |
| Significance joint effect | p = 0.098 | | | p= 0.002 | | |

**c) Recent first parenthood (within 5 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| firstchild_5years | −0.100 | (0.106) | 0.347 | −0.174* | (0.103) | 0.093 |
| Children | −0.147** | (0.072) | 0.042 | −0.096 | (0.072) | 0.179 |
| Significance joint effect | p = 0.022 | | | p= 0.009 | | |

Note: The table reports the results of OLS regressions with our measures for stated risk preferences (Model 1) and revealed risk preferences (Model 2) as the dependent variables. Higher values for the risk preference measures indicate higher risk aversion. *,**,*** denominate significance at the 10%, 5%, and 1% level, respectively. Robust standard errors of regression coefficients in parentheses. All regression models include the same set of independent variables as the models reported in Tables 1 and A1. In addition, a binary variable "firstchild_xyear(s)" is included to capture if the life event occurred recently; within one year (panel a), within three years (panel b) or within five years (panel c) before our study was conducted. The estimated effect of this variable is to be interpreted as the difference in risk preference between individuals who experienced the life event recently – becoming parents for the first time within one, three, and five years, respectively - compared to individuals who experienced the life event at an earlier point in time. The joint effect captures having children and becoming parent for the first time within one, three, and five years, respectively, before our study was conducted; it is calculated as the sum of both regression coefficients. A significant joint effect indicates a significant difference in the risk preference measure compared to the reference group of individuals who are not parents.

*Table A6. Risk preferences and unemployment*

**a) Recent unemployment (within 1 year)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| unemployed_1year | -0.562* | (0.298) | 0.060 | -0.060 | (0.414) | 0.884 |

**b) Recent unemployment (within 3 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| unemployed_3years | -0.855** | (0.362) | 0.018 | 0.271 | (0.292) | 0.354 |

**c) Recent unemployment (within 5 years)**

| Model | (1) | | | (2) | | |
|---|---|---|---|---|---|---|
| Dependent variable | Stated risk preference | Robust std. error | p-value | Revealed risk preference | Robust std. error | p-value |
| unemployed_5years | -0.238 | (0.162) | 0.141 | 0.004 | (0.170) | 0.984 |

Note: The table reports the results of OLS regressions with our measures for stated risk preferences (Model 1) and revealed risk preferences (Model 2) as the dependent variables. Higher values for the risk preference measures indicate higher risk aversion. *,**,*** denominate significance at the 10%, 5%, and 1% level, respectively. Robust standard errors of regression coefficients in parentheses. All regression models include the same set of independent variables as the models reported in Tables 1 and A1. In addition, a binary variable "unemployed_xyear(s)" is included to capture if the life event occurred recently; within one year (panel a), within three years (panel b), or within five years (panel c) before our study was conducted. The estimated effect of this variable can be interpreted as the difference in risk preference between individuals who experienced the life event recently – becoming unemployed within one, three, and five years, respectively, before our study was conducted – compared to individuals who did not experience this life event in the respective time period.

## A2. Multiple Price Lists

*MPL 1*

| Lottery | Option A | | | | EV(A) | Option B | | | | EV(B) |
|---|---|---|---|---|---|---|---|---|---|---|
| | *p* | € | *p* | € | | *p* | € | *p* | € | |
| #1 | 0.1 | **€80** | 0.9 | **€64** | €66 | 0.1 | **€154** | 0.9 | **€4** | €19 |
| #2 | 0.2 | **€80** | 0.8 | **€64** | €67 | 0.2 | **€154** | 0.8 | **€4** | €34 |
| #3 | 0.3 | **€80** | 0.7 | **€64** | €69 | 0.3 | **€154** | 0.7 | **€4** | €49 |
| #4 | 0.4 | **€80** | 0.6 | **€64** | €70 | 0.4 | **€154** | 0.6 | **€4** | €64 |
| #5 | 0.5 | **€80** | 0.5 | **€64** | €72 | 0.5 | **€154** | 0.5 | **€4** | €79 |
| #6 | 0.6 | **€80** | 0.4 | €64 | €74 | 0.6 | **€154** | 0.4 | **€4** | €94 |
| #7 | 0.7 | **€80** | 0.3 | **€64** | €75 | 0.7 | **€154** | 0.3 | **€4** | €109 |
| #8 | 0.8 | **€80** | 0.2 | **€64** | €77 | 0.8 | **€154** | 0.2 | **€4** | €124 |
| #9 | 0.9 | **€80** | 0.1 | **€64** | €78 | 0.9 | **€154** | 0.1 | **€4** | €139 |
| #10 | 1 | **€80** | 0 | **€64** | €80 | 1 | **€154** | 0 | **€4** | €154 |

Note: The columns labeled EV(A) and EV(B) list the expected value of the related lottery.

*MPL 2*

| Lottery | Option A | | | | EV(A) | Option B | | | | EV(B) |
|---|---|---|---|---|---|---|---|---|---|---|
| | *p* | € | *p* | € | | *p* | € | *p* | € | |
| #1 | 0.1 | **€99** | 0.9 | **€41** | € 47 | 0.1 | **€134** | 0.9 | **€19** | €31 |
| #2 | 0.2 | **€99** | 0.8 | **€41** | € 53 | 0.2 | **€134** | 0.8 | **€19** | €42 |
| #3 | 0.3 | **€99** | 0.7 | **€41** | € 58 | 0.3 | **€134** | 0.7 | **€19** | €54 |
| #4 | 0.4 | **€99** | 0.6 | **€41** | € 64 | 0.4 | **€134** | 0.6 | **€19** | €65 |
| #5 | 0.5 | **€99** | 0.5 | **€41** | € 70 | 0.5 | **€134** | 0.5 | **€19** | €77 |
| #6 | 0.6 | **€99** | 0.4 | **€41** | € 76 | 0.6 | **€134** | 0.4 | **€19** | €88 |
| #7 | 0.7 | **€99** | 0.3 | **€41** | € 82 | 0.7 | **€134** | 0.3 | **€19** | €100 |
| #8 | 0.8 | **€99** | 0.2 | **€41** | € 87 | 0.8 | **€134** | 0.2 | **€19** | €111 |
| #9 | 0.9 | **€99** | 0.1 | **€41** | € 93 | 0.9 | **€134** | 0.1 | **€19** | €123 |
| #10 | 1 | **€99** | 0 | **€41** | € 99 | 1 | **€134** | 0 | **€19** | €134 |

Note: The columns labeled EV(A) and EV(B) list the expected value of the related lottery.

*MPL 3*

| Lottery | Option A | | | | EV(A) | Option B | | | | EV(B) |
|---|---|---|---|---|---|---|---|---|---|---|
| | *p* | € | *p* | € | | *p* | € | *p* | € | |
| #1 | 1 | **€52** | | | €52 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #2 | 1 | **€57** | | | €57 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #3 | 1 | **€63** | | | €63 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #4 | 1 | **€68** | | | €68 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #5 | 1 | **€73** | | | €73 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #6 | 1 | **€78** | | | €78 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #7 | 1 | **€82** | | | €82 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #8 | 1 | **€88** | | | €88 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #9 | 1 | **€94** | | | €94 | 0.5 | **€30** | 0.5 | **€130** | €80 |
| #10 | 1 | **€101** | | | €101 | 0.5 | **€30** | 0.5 | **€130** | €80 |

Note: The columns labeled EV(A) and EV(B) list the expected value of the related lottery.

*MPL 4*

| Lottery | Option A | | | | EV(A) | Option B | | | | EV(B) |
|---|---|---|---|---|---|---|---|---|---|---|
| | *p* | € | *p* | € | | *p* | € | *p* | € | |
| #1 | 1 | **€39** | | | €39 | 0.33 | **€20** | 0.67 | **€110** | €80 |
| #2 | 1 | **€46** | | | €46 | 0.33 | **€20** | 0.67 | **€110** | €80 |
| #3 | 1 | **€56** | | | €56 | 0.33 | **€20** | 0.67 | **€110** | €80 |
| #4 | 1 | **€64** | | | €64 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #5 | 1 | **€70** | | | €70 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #6 | 1 | **€75** | | | €75 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #7 | 1 | **€79** | | | €79 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #8 | 1 | **€84** | | | €84 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #9 | 1 | **€88** | | | €88 | 0.33 | **€20** | 0,67 | **€110** | €80 |
| #10 | 1 | **€93** | | | €93 | 0.33 | **€20** | 0,67 | **€110** | €80 |

Note: The columns labeled EV(A) and EV(B) list the expected value of the related lottery.

*MPL 5*

| Lottery | Option A | | | | EV(A) | Option B | | | | EV(B) |
|---|---|---|---|---|---|---|---|---|---|---|
| | *p* | € | *p* | € | | *p* | € | *p* | € | |
| #1 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€103** | 0.5 | **€35** | €69 |
| #2 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€109** | 0.5 | **€35** | €72 |
| #3 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€115** | 0.5 | **€35** | €75 |
| #4 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€122** | 0.5 | **€35** | €79 |
| #5 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€128** | 0.5 | **€35** | €82 |
| #6 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€131** | 0.5 | **€35** | €83 |
| #7 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€138** | 0.5 | **€35** | €87 |
| #8 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€153** | 0.5 | **€35** | €94 |
| #9 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€170** | 0.5 | **€35** | €103 |
| #10 | 0.5 | **€90** | 0.5 | **€70** | €80 | 0.5 | **€186** | 0.5 | **€35** | €111 |

Note: The columns labeled EV(A) and EV(B) list the expected value of the related lottery.

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