

# Consumer Preferences for a Digital Euro: Insights from a Discrete Choice Experiment in Austria

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This paper examines consumers' intended adoption of a digital euro in Austria using a discrete choice experiment. We estimate a mixed logit model to quantify the role of key attributes such as privacy, offline functionality, security against financial loss, monetary incentives, and payment form factors. Our findings indicate that security and financial incentives are the strongest drivers of adoption, while privacy plays a secondary role. We identify significant heterogeneity in adoption likelihood across socio-demographic groups and payment preferences. Simulations suggest that under realistic design assumptions, approximately 37% of individuals are found to have an intention to adopt a digital euro, with variation by current payment behavior. Our results highlight the importance of existing payment habits and trust in the central bank.

**Keywords:** Central Bank Digital Currency (CBDC), Consumer Adoption, Discrete Choice Experiment, Payment Preferences.

**JEL Classification:** E42, D12, G21, C35.

## 1. Introduction

How will consumers react to the introduction of a digital euro? Which features will drive or hinder its adoption? These are the central questions our paper seeks to answer

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through an empirical investigation using a discrete choice experiment.

The European Central Bank aims to introduce a *digital euro*, a secure, widely accepted digital payment method that complements cash. While the technical implementation is within the ECB's domain, widespread consumer adoption is essential for success. This requires a robust understanding of consumer preferences and the design features most critical to adoption. Our research directly informs policy makers by empirically assessing consumer preferences. While consultative processes, focus groups, and surveys have provided some insights, there remains a significant gap in robust, representative evidence on consumer demand for a digital euro. Our paper directly contributes to our understanding of consumer payment habits and preferences, which is crucial for the ECB's goal of ensuring the digital euro meets user needs.

Our findings can also inform the European Commission's legislative efforts to establish a legal framework for the digital euro, ensuring it complements existing payment methods and meets consumer needs.<sup>1</sup> Robust empirical evidence on consumer preferences is also crucial for the design of a legal framework conducive to the supply of additional digital payment options, especially in scenarios where physical cash is less practical, aligning with the Commission's vision of offering greater choice to consumers and businesses.

**Main Findings** Our choice experiment yields several insights with direct policy relevance:

1. **Monetary Incentives Drive Adoption:** Consumers respond significantly to monetary incentives. The probability of choosing a digital euro increases by 8 *percentage points (pp)* if it offers *€10 in monthly cost savings* (e.g., via reduced fees or merchant discounts).
2. **Security Concerns Are Paramount:** *Concerns about theft or loss* have the strongest influence on adoption. Reducing potential losses from a full loss (like a stolen wallet) to a capped loss of €250 increases the likelihood of choosing a digital euro by 13 pp. This underscores consumers' *strong preference for security* in digital payment options.
3. **Privacy Preferences Are Context-Dependent:** Without remuneration, consumers, on average, are *indifferent between two privacy models*:
  - a) a model where banks have access to personal and transaction data, and

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<sup>1</sup>See [https://finance.ec.europa.eu/publications/digital-euro-package\\_en?utm\\_source=](https://finance.ec.europa.eu/publications/digital-euro-package_en?utm_source=)

b) a model offering full privacy.

Monetary incentives increase adoption under both models. The increase is *one third lower under limited privacy*, suggesting that consumers are willing to sacrifice some privacy in exchange for monetary incentives.

4. **Offline Functionality Has Limited Impact:** Offering an offline functionality (as opposed to a purely online option) offers modest benefits, *increasing* adoption likelihood by only 3 pp.

**Additional Findings on Heterogeneity Across Consumer Groups** Following our pre-registration<sup>2</sup>, we explore heterogeneity across consumer groups, yielding additional insights:

- **Privacy Preferences Are Not Uniform:** While monetary incentives outweigh privacy concerns on average, *privacy-sensitive consumers* (one-third of the sample) derive *greater utility from enhanced privacy* than from cost savings. In contrast, the remaining two-thirds of respondents prioritize cost savings over privacy. This finding nuances the dominance of privacy in public debates.
- **Sociodemographic Differences in Adoption:** Adoption likelihood varies based on *age, education, income, tech-savviness*, and *risk aversion*. Notably:
  - *Cash-preferring consumers* are less likely to adopt a digital euro.
  - *Trust in the central bank* is associated with a higher likelihood of adoption.
- **Satisfaction with Existing Payment Methods Influences Preferences:** Consumers' adoption intentions depend strongly on their satisfaction with existing payment methods. Those who experience *payment acceptance barriers* are more inclined to adopt a digital euro.

Our experimental design was tailored to enhance comprehensibility. Respondents had the choice to refuse participation in the experiment. We find that about one fourth of the target population of the survey does not participate in the experiment or always chooses the opt out option in all choice tasks. Non-participants are *older, less educated, more cash-oriented, less tech-savvy*, more concerned about *data privacy*, have *lower trust in the central bank*, and are *less informed about the digital euro*. We demonstrate that, under plausible assumptions, the observed *attribute-specific effects* (e.g., privacy,

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<sup>2</sup>The study was pre-registered at AsPredicted.org.

security, offline functionality) are robust to selection effects and can be generalized to the broader population. In contrast, *individual-specific effects* (e.g., differences by age, education, or cash preference) should be interpreted as conditional on participation.

**Why discrete choice experiments improve upon existing methods** To assess consumer choices, we employ a discrete choice experiment (DCE), a well-established method in empirical economics and market research. This approach, first developed by McFadden (1974), has been widely used in various fields, including transportation, health, energy, housing, and marketing (e.g. Louviere et al. 2010, Späti et al. 2022, Jonker et al. 2020), and has recently been applied to the study of CBDC (Syngjoo Choi et al. 2023b, Fairweather et al. 2024). Our contribution lies in applying this method to understand consumer preferences for the digital euro, inquiring about consumer preferences for realistic design features.

In our experiment, survey participants were presented with 10 different choice scenarios, each requiring them to choose between two versions of a digital euro or to choose neither and stay with the status quo. The choices were characterized by five key attributes: the physical form of the payment instrument, the level of personal data protection, the risk in case of loss or theft, online/offline functionality, and cost savings relative to existing payment methods. Importantly, these attributes broadly align with the design decisions currently being discussed by the ECB and the legislative proposals by the European Commission.<sup>3</sup>

We are the first to conduct a DCE to find empirical evidence about consumer preferences for a digital euro. The other approaches that have been used so far are a legal consultation process, focus groups and surveys. In comparison DCEs have some unique advantages which make them a useful addition to existing approaches.

A DCE uniquely simulates real-world decision-making by presenting consumers with controlled trade-offs between attributes (e.g., privacy, fees, accessibility) and infers their underlying preferences from their choices rather than direct questioning. We see our efforts as complementary to the work on consumer preferences that has been done before. While legal consultations ensure regulatory alignment, a DCE provides empirical validation of consumer acceptance. While focus groups uncover consumer narratives, a DCE quantifies and generalizes these narratives into structured insights. While surveys collect broad attitudinal data, a DCE measures behavioral choices under realistic conditions. Thus, rather than replacing other approaches, a DCE complements them by

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<sup>3</sup>See European Central Bank (2024) and European Commission (2023).

adding a structured, quantitative lens to consumer decision-making, ensuring that policy decisions are informed by empirical evidence rather than solely opinions and qualitative insights

**Related Research** Our paper contributes to two strands of the literature. First, we add to research on consumers’ adoption of new payment instruments, with a particular focus on central bank digital currency (CBDC). Our key contribution is the use of a discrete choice experiment, a methodology well-suited for analyzing the hypothetical adoption of a yet-to-be-introduced payment instrument. This approach allows us to identify critical determinants of CBDC adoption and assess their relative importance.

Second, we contribute to the literature on transaction data privacy and its role in consumer payment choices. We provide empirical evidence that consumers respond to CBDC models with different degrees of privacy and that these responses vary in the presence of monetary incentives.

**Choice Experiments on CBDC Adoption** Our study is most closely related to Syngjoo Choi et al. (2023b) and Fairweather et al. (2024), which present choice experiments conducted in South Korea and Australia, respectively. These papers inform our design and analysis but differ in key aspects.

In Syngjoo Choi et al. (2023b) respondents select between two generic payment instrument attribute bundles, from which demand for CBDC is inferred indirectly. In contrast, in our choice design respondents explicitly evaluate two digital euro variants against the status quo. This design clarifies the interpretation of choices by ensuring that a rejection of both digital euro variants implies a preference for existing payment instruments. Moreover, we reduce the number of attributes from nine to five, improving comprehensibility while aligning with ongoing policy discussions. Finally, we estimate mixed logit models to account for preference heterogeneity, allowing for more realistic substitution patterns - a feature absent in Syngjoo Choi et al. (2023b).

Fairweather et al. (2024) analyze consumer valuation of security and privacy in CBDC accounts relative to commercial bank accounts. Their experiment focuses on three attributes: account costs, security (central bank vs. commercial bank), and privacy. In contrast, we present respondents with two digital euro variants and a status quo option, allowing for explicit non-adoption. Furthermore, Fairweather et al. (2024) do not model preference heterogeneity, whereas our approach explicitly accounts for it.

**Empirical Studies on Payment Instrument Adoption** Our study also builds on the broader empirical literature on consumer adoption of payment instruments, which has traditionally relied on survey data (Shy 2023, Bagnall et al. 2016). More recent research leverages administrative data (Bachas et al. 2021, Brown et al. 2022). These studies consistently highlight the role of sociodemographics in payment adoption, informing our heterogeneity analysis. However, neither survey nor administrative data is well-suited for analyzing the potential adoption of a payment instrument that has not yet been introduced. Our stated choice experiment offers a way to bridge this gap.

Regarding survey-based evidence on CBDC adoption, Bijlsma et al. (2021) examine the factors influencing demand for an account-based CBDC in the Netherlands, finding that respondents’ knowledge of CBDC, trust in financial institutions, and monetary incentives are key determinants. Recent survey evidence from Austria and Slovakia supports these findings: Cupak et al. (2024) highlights the role of central bank trust, while Abramova et al. (2023) and Cupak et al. (2024) find lower demand among cash-preferring consumers. Survey-based studies provide useful complementary insights but remain limited by reliance on stated attitudes rather than choice behavior. Structural economic models provide further insights into CBDC demand (e.g. Li 2023, Huynh et al. 2024, Engert et al. 2024).

**Transaction Data Privacy in Payment Choices** Our second contribution is to research on the role of transaction data privacy in payment instrument demand (Acquisti et al. 2016, Kahn et al. 2000, Garratt and van Oordt 2021). Public consultation by the ECB in 2020 (European Central Bank 2021) suggested that privacy was considered the most important feature of a digital euro by both citizens and professionals. However, such consultations are non-representative and primarily capture the views of engaged stakeholders. Understanding the potential demand for a digital euro requires an empirical assessment of how consumers value privacy under *realistic, technologically feasible* privacy models.

Prior studies have examined the role of privacy in payment adoption. Abramova et al. (2023) show that some consumers prioritize security over privacy. Syngjoo Choi et al. (2023a) use a survey experiment in South Korea, varying the level of privacy across three experimental groups. Their findings indicate that privacy preferences depend on transaction type (privacy-sensitive vs. non-sensitive) and payment channel, highlighting the context-dependent nature of privacy concerns.

Our approach advances this literature by estimating the effect of two privacy models

on digital euro adoption. Unlike prior research relying on stated attitudes, we measure stated preferences through concrete choices. While our experiment does not explicitly model contextual privacy considerations, it provides an average valuation of transaction data privacy across consumers. Our results offer insights into how privacy is valued and which consumers are more likely to trade privacy for monetary compensation (Acquisti et al. 2013), contributing to a more nuanced understanding of privacy preferences in the context of digital payments.

## 2. The Policy Challenge: Quantifying Key Design Trade-Offs

To answer how consumers will respond to the introduction of a digital euro (DE), we design a discrete choice experiment (DCE) embedded in a survey. The overall aim of a choice experiment is to estimate the economic value of different characteristics or features of a good. This estimate is based on stated preferences in concrete choice situations and can therefore be applied even to goods that do not yet have an active market (Louviere et al. 2010).

In our choice experiment, survey respondents are presented with 10 choice tasks, each requiring them to choose between two hypothetical versions of a digital euro or to opt out (i.e., to stay with the status quo). Each choice option is defined by five key attributes (see Table 1): Security, privacy, monetary incentives, on-/offline functionality, form factor.

The questionnaire, available as a supplement, contains the exact wording of each attribute and its justification.<sup>4</sup>

### 2.1. DCE Attributes and Policy Debate

The selected attributes closely reflect the policy discussions at the European Central Bank (ECB) and the European Commission regarding the design of a digital euro.

Ensuring the safety of holdings in a digital euro is a core concern for policymakers. The ECB’s digital euro progress report emphasizes that users should not face excessive risks from theft or loss, particularly if offline functionality is introduced.<sup>5</sup> By including

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<sup>4</sup>Since cost savings are important for the interpretation of our results, we present the respective formulation here: “Use of the digital EURO is free of charge. However, there could be savings, e.g., because there are no more card fees or because retailers grant you a discount. Assume that the monthly savings amount to ...”.

<sup>5</sup>See European Central Bank (2024).

Table 1: Attributes and Levels in the Choice Experiment

| Attribute   | Levels  | Rationale  |
|---|---|--|
| <b>Security</b>   | <ul style="list-style-type: none"> <li>• No refund - as with the loss of a wallet</li> <li>• Partial refund - maximum loss of €250</li> <li>• Full refund - no risk of loss</li> </ul>                      | Addresses risk aversion and consumer concerns over financial loss. |
| <b>Privacy</b>  | <ul style="list-style-type: none"> <li>• personal data and payments <i>can only be tracked by your bank</i></li> <li>• Personal data and payments information <i>cannot be tracked by anyone</i></li> </ul> | Reflects public concerns over financial surveillance.              |
| <b>Cost Savings</b><br>(relative to existing payment instruments) | <ul style="list-style-type: none"> <li>• €10/month savings</li> <li>• €5/month savings</li> <li>• No savings</li> </ul>   | Tests willingness to adopt in exchange for financial benefits.     |
| <b>On-/Offline</b>  | <ul style="list-style-type: none"> <li>• Only with <i>an existing</i> internet connection</li> <li>• Even <i>without</i> an internet connection</li> </ul>  | Evaluates demand for resilience in accessibility.                  |
| <b>Form Factor</b>  | <ul style="list-style-type: none"> <li>• Physical card</li> <li>• Smartphone app</li> </ul>   | Examines usability preferences.                                    |



varying levels of loss protection, our experiment aligns with the ECB’s considerations regarding consumer trust and financial stability.

The ECB’s public consultation on the digital euro found that privacy is the most frequently cited concern among citizens and merchants (European Central Bank 2021). The European Commission’s Digital Euro Package also acknowledges privacy concerns and proposes safeguards for data protection.<sup>6</sup> By testing consumer preferences for different privacy models, our experiment provides empirical evidence on whether consumers would trade off privacy against monetary incentives and how strong such preferences are.

Policymakers face the question of whether the digital euro should be purely neutral in cost or whether incentives (e.g., fee reductions or merchant discounts) could play a role in adoption. Our experiment quantifies how much financial incentives influence consumers’ willingness to adopt a digital euro.

Offline usability has been a key topic in ECB working papers on digital euro design. The ability to use a digital euro without an internet connection is framed as a way to improve resilience and inclusion, particularly for areas with unstable connectivity. However, it comes with technical and security trade-offs. Our experiment assesses how much weight consumers place on this feature when making adoption decisions.

The ECB and the European Commission have not yet finalized how a digital euro would be accessed, with discussions on whether it should function like a standalone card, a smartphone app, or both. Our experiment provides insights into whether consumers prefer one access method over another.

## **2.2. DCE Attributes and Academic Debate**

While the attributes chosen for our experiment closely align with the policy discussion of the ECB and the European commission, they are also supported by existing academic research. Economic theory and behavioral research suggest that each of these attributes plays a significant role in consumer payment choices.

There is a large academic literature confirming that security matters for risk-averse consumers. Consumers tend to be risk-averse when choosing financial instruments (Kahnemann 2011). Ensuring protection against loss or theft can reduce perceived risks and increase adoption.

With respect to privacy, prior research shows that while consumers value privacy,

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<sup>6</sup>See [https://finance.ec.europa.eu/publications/digital-euro-package\\_en](https://finance.ec.europa.eu/publications/digital-euro-package_en).

they often trade it for tangible benefits (Acquisti et al. 2013). Our experiment directly tests the degree to which consumers are willing to make such a trade-off and how this willingness varies across individuals.

Economic models suggest that consumers weigh benefits and costs when choosing among payment options (Shy 2023), thus confirming the conjecture that monetary incentives affect adoption probability. If a digital euro offers cost savings, adoption is likely to be higher, but the magnitude of the effect is an empirical question.

Research on payment habits shows that accessibility is a key determinant of adoption (Bagnall et al. 2016). If a digital euro can be used offline, it may appeal to consumers who currently rely on cash for its universal acceptance.

The way a payment instrument is presented (card vs. app) affects convenience, particularly for different demographic groups. Older consumers, for example, may favor a card-based solution, whereas younger users may prefer app-based payments (Cupak et al. 2024). The literature therefore confirms that form factor influences usability and consumer habits.

By systematically varying these different attributes in our experiment, we provide direct empirical evidence on the trade-offs consumers make when considering digital euro adoption. These findings are critical for policymakers aiming to design a digital euro that meets user needs while ensuring broad adoption.

### **3. Measuring Preferences for a Hypothetical Payment Instrument**

Measuring consumer preferences for a hypothetical payment instrument such as the digital euro (DE) presents methodological challenges. Unlike existing payment methods, a digital euro is not yet available, requiring an approach that captures preferences in a structured and decision-relevant way.

#### **3.1. DCE Implementation**

To address this, we implemented a discrete choice experiment (DCE) embedded in a survey with 1,421 randomly selected Austrian residents aged 16 and older. The survey was conducted in Spring 2024 using both computer-assisted personal interviews (CAPI, 89%) and computer-assisted web interviews (CAWI, 11%).

The questionnaire included: Warm-up questions on payment habits and preferences.

An initial awareness check, where respondents were asked whether they had previously heard about the digital euro. Then a professionally produced 2-minute video explained key aspects of the digital euro, including how payments could be conducted and its relationship to existing payment methods. We also included a pre-experimental interest assessment. Respondents were asked to indicate their general interest in the introduction of a digital euro.

The sequence of questions and actions taken in the experiment can best be symbolized in a flowchart, which we show in Figure 1. First, it is explained that the introduction of the digital euro has not been decided yet and that we are interested in the preferences of interviewees. Interviewers present a showcard and explain the five attributes and the attribute levels.

Next, respondents are randomly assigned to one of three blocks with each containing 10 choice sets. Each choice set is presented on a showcard and interviewees choose either “Digital euro variant 1”, “Digital euro variant 2” or neither of them (status quo). This defines the dependent variable in the estimations.

After completion of all choice sets, we ask evaluation and cognitive debriefing questions. In the case of computer-assisted web interviews, the explanation and the choice experiment have been implemented on-screen without an interviewer intervention.

### 3.2. Experimental Design and Attribute Selection

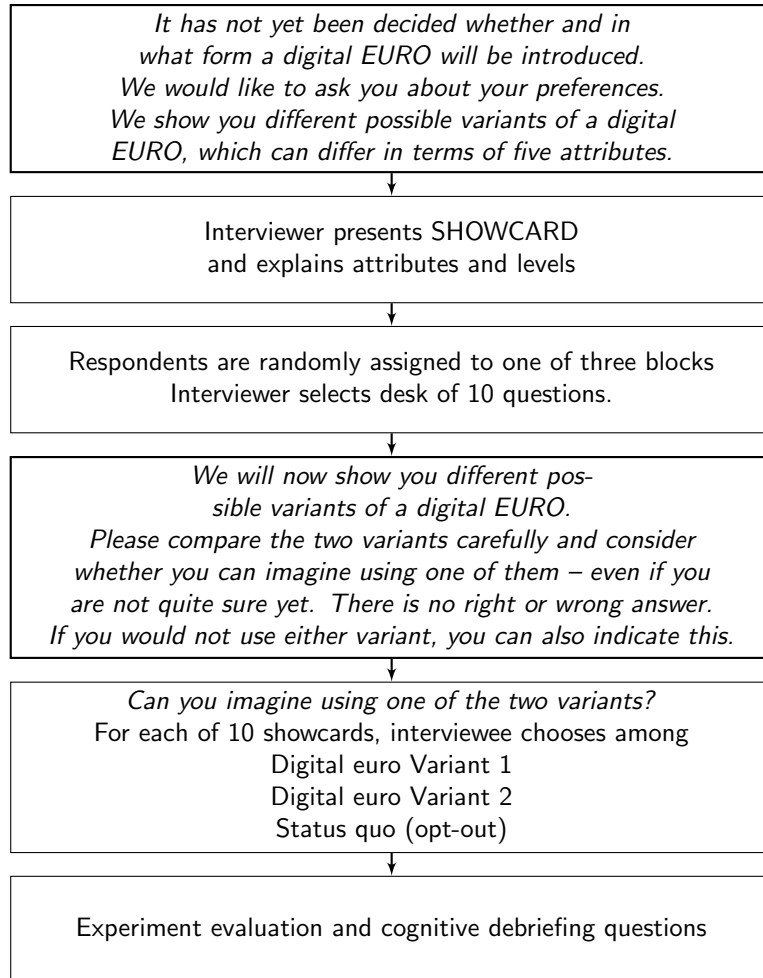
The specific choice sets were generated using the `dcm.design` function from the R-package `choicesDes` (Horne 2022) which employs a modified Federov algorithm to generate balanced and blocked choice sets from a full-factorial candidate set (for a general discussion, see Bliemer and Rose 2024). Respondents are randomly assigned to one of three blocks, each containing 10 choice tasks.

### 3.3. Observed Choice Behavior

Figure 2 illustrates respondents’ choice behavior categories based on their experiment responses. We define individuals who choose to opt out in all 10 choice tasks as “*Never taker*”. If individuals opt out in 6 to 9 choice tasks, we classify them as “*Rarely taker*”. “*Sometimes taker*” opt-out in only 1 to 5 tasks –in the majority of tasks a digital euro variant is chosen– and “*Always taker*” choose the digital euro in all 10 choice tasks.

These shares are visualized in Figure 2. Always taker and Sometimes taker have a combined share of 62.8% of the population. This share seems rather high. First, we

Figure 1: Flowchart of experiment



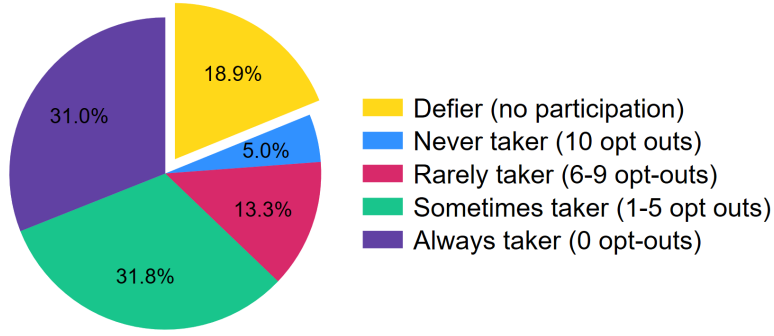


Figure 2: Choice behavior. The figure shows choice behavior at the respondent level (in percentage points). Results are weighted and refer to population shares.

think that the video was very important because it showed how a digital euro can be used for payments, how it relates to existing digital payment instruments and it discusses potential concerns, like privacy. Second, as shown in Figure 1 the central question was framed as follows “*Please compare [the variants] carefully and consider whether you can imagine using one of them – even if you are not entirely sure yet*”. Thus, interviewees could indicate their interest in a potential use. Therefore, we interpret the outcome from our experiment as an intention to adopt and respective results should be treated as an upper bound.

The behavior of “Defier” and “Never taker” could be driven by a genuine lack of demand for (or interest in) a digital euro—which we aim to measure. Alternatively, the answering behavior could reflect a general disinterest in the survey. While we cannot provide hard evidence about the relative importance of these two motives, the evidence presented below is consistent with defying and never taking being closely related to a lack of interest in a digital euro. Hence, we will argue that about 24% of the population has no apparent demand for a digital euro.

We highlight the following key observations from Table 2:

- **Demographics:** *Defiers* differ markedly from *Non-Defiers*. They are more likely to be female, older, and have lower formal education levels.
- **Financial Characteristics:** *Defiers* exhibit higher financial risk aversion and fewer hold financial assets. While they report a slightly worse self-assessed financial situation than other groups, the difference is not as pronounced as for the

Table 2: Choice Behavior by Subgroups

|   | <b>Always<br/>taker</b><br>(N=399) | <b>Sometimes<br/>taker</b><br>(N=429) | <b>Rarely<br/>taker</b><br>(N=208) | <b>Never<br/>taker</b><br>(N=94) | <b>Defier</b><br>(N=291) |
|---|------------------------------------|---------------------------------------|------------------------------------|----------------------------------|--------------------------|
| Male                                      | 0.53                               | 0.48                                  | 0.50                               | 0.61                             | 0.39                     |
| Age                                       | 40.27                              | 46.80                                 | 54.35                              | 62.74                            | 59.39                    |
| <b>Education Level</b>                    |                                    |                                       |                                    |                                  |                          |
| Low                                       | 0.04                               | 0.14                                  | 0.14                               | 0.14                             | 0.21                     |
| Medium                                    | 0.54                               | 0.56                                  | 0.52                               | 0.59                             | 0.63                     |
| High                                      | 0.42                               | 0.30                                  | 0.34                               | 0.27                             | 0.16                     |
| <b>Financial Indicators</b>               |                                    |                                       |                                    |                                  |                          |
| Good financial situation                  | 0.83                               | 0.75                                  | 0.82                               | 0.75                             | 0.71                     |
| Has financial assets                      | 0.36                               | 0.30                                  | 0.35                               | 0.25                             | 0.17                     |
| No financial risk                         | 0.20                               | 0.46                                  | 0.54                               | 0.62                             | 0.75                     |
| Medium financ. risk                       | 0.33                               | 0.40                                  | 0.37                               | 0.26                             | 0.20                     |
| High financ. risk                         | 0.46                               | 0.13                                  | 0.09                               | 0.12                             | 0.05                     |
| <b>Payment Preferences</b>                |                                    |                                       |                                    |                                  |                          |
| Cash preference (€50)                     | 0.17                               | 0.32                                  | 0.46                               | 0.73                             | 0.80                     |
| <b>Privacy Concerns</b>                   |                                    |                                       |                                    |                                  |                          |
| Privacy strong concerns                   | 0.20                               | 0.17                                  | 0.18                               | 0.59                             | 0.73                     |
| Privacy some concerns                     | 0.38                               | 0.36                                  | 0.38                               | 0.21                             | 0.18                     |
| Privacy no concerns                       | 0.42                               | 0.47                                  | 0.44                               | 0.19                             | 0.09                     |
| <b>Trust Indicators</b>                   |                                    |                                       |                                    |                                  |                          |
| Trust in central bank                     | 0.91                               | 0.87                                  | 0.82                               | 0.74                             | 0.63                     |
| Trust in domestic banks                   | 0.86                               | 0.81                                  | 0.77                               | 0.78                             | 0.64                     |
| Trust in AK                               | 0.85                               | 0.85                                  | 0.86                               | 0.70                             | 0.80                     |
| <b>Digital Euro Awareness</b>             |                                    |                                       |                                    |                                  |                          |
| Heard of digital euro                     | 0.72                               | 0.67                                  | 0.60                               | 0.78                             | 0.56                     |
| Interested in digital euro                | 0.78                               | 0.55                                  | 0.39                               | 0.02                             | –                        |
| Finds that digital euro provides benefits | 0.72                               | 0.49                                  | 0.37                               | 0.00                             | –                        |

*Note:* The table summarizes socio-economic characteristics by choice behavior at the individual level. Data are weighted. For example, "Always takers" consist of 53% males and have an average age of 40.27 years. 4% of Always taker have a low educational level. Variable definitions and summary statistics are in Appendix A.3.

characteristics mentioned above.

- **Payment Behavior:** *Defiers* strongly prefer cash and are much less likely to use innovative digital payment methods.
- **Privacy Concerns:** 73% of *Defiers* report strong privacy concerns regarding the digital euro, compared to only 20% of *Always Takers*.
- **Trust in Institutions:** *Defiers* display lower trust in the central bank than *Always*, *Sometimes*, or *Rarely Takers*. They also have lower trust in domestic banks. This distrust extends beyond monetary institutions, as *Defiers* also show slightly lower trust in the Chamber of Labor.
- **Awareness of the Digital Euro:** *Defiers* are significantly less informed about the digital euro compared to all other groups.
- **Self-Stated Interest in the Digital Euro:** Respondents' prior interest in the digital euro, measured before the experiment, is strongly correlated with their choice behavior.
- **Perceived Benefits of the Digital Euro:** Beliefs about whether the digital euro would be personally beneficial strongly correlate with respondents' choices.

The results in Table 2 suggest that *Defiers* and *Never Takers* differ significantly from other groups, cautioning against using the experiment's results in isolation to predict aggregate take-up rates.

## 4. What Drives Consumer Adoption?

### 4.1. Estimation Approach

To quantify the relative importance of different digital euro attributes, we estimate a mixed logit model (Train 2009). The key advantage of this approach is that it allows preference parameters to vary across respondents rather than assuming everyone has identical preferences.

Each respondent faces a choice among three options:

1. DE1: A first variant of the digital euro
2. DE2: A second variant of the digital euro

3. SQ (Status Quo): The option of not adopting the digital euro

For respondent  $i$ , the utility associated with choosing alternative  $j$  is given by:

$$U_{ij} = \beta'_i x_{ij} + \epsilon_{ij} \quad (1)$$

where:

- $x_{ij}$  represents the attributes of the digital euro (e.g., security, privacy, financial incentives, offline functionality, and form factor).
- $\beta'_i$  are individual-specific preference parameters, capturing how strongly each respondent values these attributes.
- $\epsilon_{ij}$  is an error term following an extreme value distribution, capturing unobserved factors that influence choices.

The utility of the status quo (SQ) alternative is slightly different because it has no associated attributes like the digital euro variants. Instead, it is given by:

$$U_{i,SQ} = \alpha_i ASC_{SQ} + \epsilon_{i,SQ} \quad (2)$$

where:

- $ASC_{SQ}$  is a dummy variable for the status quo alternative and
- $\alpha_i$  represents consumer  $i$ 's valuation (or utility) of the status quo relative to the baseline digital euro specification.

In our model, only differences in utility between alternatives matter, and the overall scale of utility is arbitrary. This means that we can estimate how much more (or less) attractive a digital euro is compared to the status quo, but not absolute utility levels. All effects are measured relative to the status quo.

For example, a positive coefficient for a privacy feature means that respondents prefer a digital euro with that feature compared to the status quo, while a negative coefficient means that the feature makes the digital euro less attractive than simply sticking with existing payment options.

To account for differences in preferences across individuals, we assume that the parameters:

$$\beta_i = (\alpha_i, \beta'_i)$$



*randomly vary* across respondents with a probability distribution  $f(\beta_i)$ . In practical terms, this means that:

- Some respondents may place –for example– high importance on privacy, while others may care more about cost savings.
- Based on the distribution  $f(\beta_i)$  we estimate both the average effect of each attribute and how much preferences vary across individuals.
- We assume  $f(\beta_i)$  follows either a normal or lognormal distribution and that random coefficients are uncorrelated (i.e., no covariance between preferences for different attributes).

Individuals know their own preferences and make choices accordingly, choosing alternative  $j$  over  $k$  if:

$$U_{ij} > U_{ik}, \quad \forall k \neq j.$$

However, as researchers, we only observe the choices respondents make, not their underlying utility functions. Our goal is to estimate the *mean and variance* of the preference distribution  $f(\beta_i)$  based on the observed choices.

As regards the distribution  $f(\beta_i)$ , we assume a normal distribution for “ASC Status quo”, “Card” and “Privacy”. We assume a lognormal distribution for “Also offline”, “Loss none”, “Loss limited” and “Monthly savings”.<sup>7</sup>

We estimate the model using Stata’s `mixlogit` package (Hole 2007) and cross-check the results using the R package `Apollo` (Hess et al. 2024) (in each case using 1,000 integration points). All data and code are available in the replication package.

As the point estimates are not directly interpretable in terms of adoption probabilities, we compute marginal effects – i.e., the estimated change in the probability of choosing the status quo given a specific change in an explanatory variable. These marginal effects are simulated and averaged over all choice tasks (or individuals), based on 1,500 random draws.<sup>8</sup> This approach provides a more intuitive interpretation of how changes in digital euro attributes affect adoption likelihood.

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<sup>7</sup>We assume a lognormal distribution for all variables for which we expect that all individuals have a positive coefficient. Regarding privacy, one could presume that all individuals strictly prefer more privacy over less privacy. This must not necessarily be the case as some respondents might perceive that full anonymity could also have detrimental effects (e.g. regarding tax evasion).

<sup>8</sup>Note that we have not computed confidence intervals for these marginal effects.

To ensure robustness, standard errors are clustered to account for the fact that each individual makes multiple choices. We exclude respondents who always opted out (i.e., those who never chose a digital euro alternative), as pre-registered. This avoids bias in estimating attribute importance. In a robustness check, we relax this restriction and include Never takers and Defiers. Our key results remain qualitatively unchanged.

## 4.2. Key Findings: Which Attributes Do Consumers Value Most

Table 3 shows results from a baseline model with random coefficients. For the sake of comparison, we also show estimates of a model with fixed coefficients.<sup>9</sup> The model contains the choice specific variables (the attributes) as well as one alternative specific constant which measures the status quo option (“ASC Status quo”). Almost all point estimates of the choice-specific variables are statistically significant, confirming that the observed relationships are unlikely to be due to chance.

Let us summarize the key findings from the *baseline model* reported in Table 3.

### Key Findings

1. **Security is the strongest driver of adoption:** Reducing potential losses from full loss to a *capped loss of €250* increases digital euro adoption likelihood by 13 percentage points (pp), while *full loss protection* increases adoption by 24pp.
2. **Monetary incentives significantly increase adoption:** Cost savings of €5 per month reduce the likelihood of opting for the status quo by 4pp, while €10 per month lead to a 8pp decrease.
3. **Privacy concerns are surprisingly neutral, on average:** Contrary to public discourse suggesting strong privacy concerns, respondents *do not systematically prefer full privacy* over limited privacy.
4. **Offline functionality has limited impact:** Enabling offline transactions *reduces the probability of choosing the status quo* by only 3pp.
5. **Form factor matters:** Respondents prefer a *payment card* over a *smartphone app* (by 4pp), on average, most likely reflecting existing payment habits.

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<sup>9</sup>In a fixed coefficients model it is assumed that the preference parameters are identical across individuals. In a random coefficient model the preference parameters may vary across individuals allowing different substitution patterns.

Table 3: Baseline model: Fixed vs. Random coefficients

|                 | Fixed               | Random               |                     |
|-----------------|---------------------|----------------------|---------------------|
|                 | (1)                 | (2)                  | (3)                 |
| <u>Mean</u>     |                     |                      |                     |
| ASC Status quo  | 1.318***<br>(0.077) | 1.978***<br>(0.211)  |                     |
| Card            | 0.420***<br>(0.050) | 0.850***<br>(0.113)  |                     |
| Privacy         | 0.016<br>(0.035)    | 0.114*<br>(0.065)    |                     |
| Also offline    | 0.131***<br>(0.036) | -2.177***<br>(0.330) | 0.718***<br>(0.067) |
| Loss none       | 1.852***<br>(0.059) | 1.167***<br>(0.046)  | 4.018***<br>(0.175) |
| Loss limited    | 0.984***<br>(0.048) | 0.534***<br>(0.056)  | 1.804***<br>(0.088) |
| Monthly savings | 0.058***<br>(0.005) | -2.642***<br>(0.114) | 0.161***<br>(0.010) |
| <u>SD</u>       |                     |                      |                     |
| ASC Status Quo  |                     | 4.110***<br>(0.191)  |                     |
| Privacy         |                     | 0.964***<br>(0.121)  |                     |
| Card            |                     | 2.496***<br>(0.137)  |                     |
| Also offline    |                     | 1.921***<br>(0.167)  | 4.482***<br>(1.542) |
| Loss none       |                     | 0.669***<br>(0.034)  | 3.018***<br>(0.248) |
| Loss limited    |                     | 0.335***<br>(0.048)  | 0.621***<br>(0.091) |
| Monthly savings |                     | 1.277***<br>(0.070)  | 0.326***<br>(0.040) |
| LogL            | -9870.61            | -7807.99             |                     |
| N               | 10360               | 10360                |                     |
| Persons         | 1036                | 1036                 |                     |

Note: The table shows results from mixed-logit models. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. "ASC Status quo" denotes the alternative-specific constant of the status quo ("opt-out") option. In column 1, coefficients of all explanatory variables are fixed. In column 2, coefficients of all explanatory variables are random and the point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, column 2 shows the mean and standard deviation of the logarithm of the coefficients. Column 3 shows the re-transformed mean and standard deviation of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

**Preference Heterogeneity and Model Superiority** The results in Table 3 also reveal substantial preference heterogeneity, meaning that individuals' choices vary significantly based on their preferences. This can be seen by the higher likelihood value as well as by the significant point estimates of the parameters' standard deviations.<sup>10</sup>

Despite these differences, the sign and magnitude of the coefficients remain consistent between the fixed and random coefficients models, reinforcing the robustness of the results.

**Interpreting the Alternative-Specific Constant (ASC)** The estimated mean of the alternative-specific constant (ASC) for the status quo is positive, meaning that - all else equal - individuals tend to prefer the status quo over the digital euro.<sup>11</sup>

Importantly, the standard deviation of the ASC coefficient is large, indicating strong heterogeneity in preferences. In the random coefficients model (column 2), the estimates suggest that 68% of individuals prefer the status quo, while 32% would opt for a digital euro.<sup>12</sup> Figure 3 visualizes the empirical distribution of the ASC coefficients across individuals. The distribution is bimodal, with two peaks - one in the negative and one in the positive domain - suggesting that respondents are polarized in their preferences rather than being centered around a neutral stance. The share of individuals who are truly indifferent (ASC near zero) is relatively low.

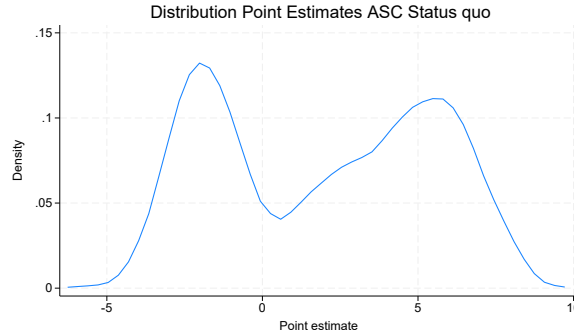


Figure 3: The figure shows the distribution of estimated individual-specific coefficients of ASC Status quo (column 2 of Table reftab:baseline).

<sup>10</sup>Negative estimated standard deviations can be interpreted as positive coefficients due to their squared nature.

<sup>11</sup>The ASC coefficient measures the average preference for the status quo relative to a digital euro with the following baseline attributes: limited privacy, no offline functionality, full loss, zero monthly savings, and available as an app. This coefficient captures factors such as status quo bias, unobserved personal characteristics, or dissatisfaction with the survey.

<sup>12</sup>These numbers do not reflect predicted adoption of a digital euro. As with the constant in an OLS regression, the ASC changes with how the explanatory variables are coded.

Overall, our baseline results are informative about the quantitative effects of explanatory variables and about preference heterogeneity. This informs our further analysis which is organized along two dimensions: First, we will add individual-specific variables to understand the drivers of status quo preferences. Moreover, we will see whether the addition of individual-specific variables alter the baseline results. Second, we will conduct subsample regressions to further scrutinize the heterogeneous response regarding some of the explanatory variables.

### 4.3. Individual-Specific Variables

A well-documented finding in the payments literature is that the likelihood of adopting a new payment technology depends on socio-economic characteristics such as age, income, or education (Shy 2023, Bagnall et al. 2016). Even more crucial are consumer-specific preferences regarding payment instrument attributes, such as convenience and security. In this subsection, we examine whether these factors also influence potential adoption of a digital euro.

#### 4.3.1. The Role of Socio-Demographic Variables and Trust

Table 4 presents a series of specifications incorporating individual-specific factors. These variables are interacted with the ASC (alternative-specific constant) for the status quo, meaning that a positive coefficient indicates a higher likelihood of choosing the status quo (i.e., of not adopting the digital euro).

We include the following baseline socio-demographic variables: Age, education, gender, rural vs. urban residence. Since a substantial share of respondents did not provide income data, we use education as a proxy for income. As outlined in our pre-registration, we expect higher status quo preference among: Older individuals, lower-educated individuals, consumers with a strong preference for cash, respondents with low tech-affinity, individuals with low trust in the central bank and individuals with privacy concerns about digital payments.

**Key Findings from Table 4** The inclusion of individual-specific variables does not qualitatively affect the estimates for choice-specific variables, allowing us to focus our discussion on the role of individual characteristics. The marginal effects are based on Column 2 of Table 4.

1. **Age increases status quo bias.** The probability of choosing the status quo

Table 4: Individual-Specific Variables and Status Quo Preference (selected results)

|                                  | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <u>Mean</u>                      |                      |                      |                      |                      |                      |                      |                      |
| ASC Status quo                   | 1.354***<br>(0.356)  | 0.683**<br>(0.338)   | 1.614***<br>(0.563)  | 1.847***<br>(0.522)  | 2.242***<br>(0.473)  | 2.385***<br>(0.785)  | 3.383***<br>(0.606)  |
| ASC SQ * Age                     | 0.095***<br>(0.010)  | 0.093***<br>(0.012)  | 0.089***<br>(0.012)  | 0.087***<br>(0.009)  | 0.087***<br>(0.009)  | 0.092***<br>(0.011)  | 0.065***<br>(0.009)  |
| ASC SQ * Edu low                 | 2.199***<br>(0.433)  | 2.497***<br>(0.435)  | 2.685***<br>(0.555)  | 1.655***<br>(0.474)  | 1.934***<br>(0.459)  | 1.562***<br>(0.528)  | 1.880***<br>(0.626)  |
| ASC SQ * Edu med                 | 0.898***<br>(0.335)  | 0.768**<br>(0.327)   | 0.404<br>(0.308)     | 0.522*<br>(0.293)    | 0.476<br>(0.332)     | 0.130<br>(0.479)     | 0.329<br>(0.297)     |
| ASC SQ * Male                    | -0.468<br>(0.294)    |                      |                      |                      |                      |                      |                      |
| ASC SQ * Rural                   | 0.768***<br>(0.286)  | 0.858**<br>(0.373)   | 0.909***<br>(0.289)  | 0.961***<br>(0.286)  | 0.797**<br>(0.328)   | 0.922***<br>(0.346)  | 0.344<br>(0.296)     |
| ASC SQ * Cash preference         |                      | 1.203***<br>(0.339)  | 1.209***<br>(0.309)  | 1.057***<br>(0.344)  | 1.411***<br>(0.317)  | 1.449***<br>(0.479)  | 1.035**<br>(0.431)   |
| ASC SQ * Trust CB                |                      |                      | -0.970***<br>(0.370) |                      | -1.226**<br>(0.530)  | -0.983<br>(0.614)    | -1.549***<br>(0.412) |
| ASC SQ * Trust AK                |                      |                      | 0.144<br>(0.525)     | -0.172<br>(0.537)    | 0.453<br>(0.293)     | 0.504<br>(0.581)     | 1.051**<br>(0.443)   |
| ASC SQ * Trust banks             |                      |                      |                      | -0.959***<br>(0.308) | -0.723<br>(0.485)    | -0.881**<br>(0.430)  | -0.560<br>(0.363)    |
| ASC SQ * Privacy strong concerns |                      |                      |                      |                      |                      | -0.807<br>(0.555)    | -0.477<br>(0.498)    |
| ASC SQ * Privacy some concerns   |                      |                      |                      |                      |                      | -0.120<br>(0.439)    | -0.365<br>(0.334)    |
| ASC SQ * Risk high               |                      |                      |                      |                      |                      |                      | -3.929***<br>(0.380) |
| Privacy                          | 0.128*<br>(0.067)    | 0.144**<br>(0.068)   | 0.107<br>(0.067)     | 0.116*<br>(0.066)    | 0.110<br>(0.068)     | 0.130*<br>(0.068)    | 0.133**<br>(0.068)   |
| Card                             | 0.905***<br>(0.112)  | 0.914***<br>(0.110)  | 0.849***<br>(0.112)  | 0.924***<br>(0.117)  | 0.880***<br>(0.114)  | 0.873***<br>(0.116)  | 0.851***<br>(0.113)  |
| Also offline                     | -2.630***<br>(0.379) | -2.184***<br>(0.324) | -2.150***<br>(0.297) | -2.352***<br>(0.383) | -2.181***<br>(0.304) | -2.468***<br>(0.442) | -2.437***<br>(0.393) |
| Loss none                        | 1.177***<br>(0.045)  | 1.186***<br>(0.047)  | 1.194***<br>(0.046)  | 1.190***<br>(0.046)  | 1.203***<br>(0.045)  | 1.191***<br>(0.047)  | 1.190***<br>(0.046)  |
| Loss limited                     | 0.537***<br>(0.056)  | 0.530***<br>(0.055)  | 0.555***<br>(0.060)  | 0.554***<br>(0.059)  | 0.566***<br>(0.055)  | 0.553***<br>(0.058)  | 0.549***<br>(0.057)  |
| Monthly savings                  | -2.644***<br>(0.139) | -2.650***<br>(0.251) | -2.636***<br>(0.128) | -2.672***<br>(0.115) | -2.730***<br>(0.128) | -2.605***<br>(0.119) | -2.580***<br>(0.116) |
| LogL                             | -7721.13             | -7698.51             | -7362.93             | -7526.00             | -7345.40             | -7272.73             | -7200.84             |
| N                                | 10360                | 10360                | 9950                 | 10140                | 9940                 | 9850                 | 9850                 |
| Persons                          | 1036                 | 1036                 | 995                  | 1014                 | 994                  | 985                  | 985                  |

Note: The table shows selected results from mixed logit models. The full table is shown in the Supplement. The point estimates denote the mean of the chosen distribution. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

increases by 4-5 percentage points (pp) for every additional 10 years of age. A 20-year-old is 15pp less likely to choose the status quo than a 50-year-old.

2. **Education reduces status quo bias.** Lower-educated respondents are 17pp more likely to prefer the status quo than those with higher education.

**Cash Preference** In Column 2 of Table 4, we introduce a dummy variable for cash preference – indicating whether respondents prefer cash for a hypothetical €50 super-market payment, assuming cards are accepted and they carry enough cash. We find that respondents preferring cash are 8pp more likely to stick with the status quo.

**Trust in the Central Bank vs. Trust in Banks** Columns 3 – 7 of Table 4 assess whether trust in monetary institutions influences digital euro adoption. Specifically, we analyze: Trust in the central bank (Trust CB), trust in commercial banks (Trust banks), the entities enabling digital payments and trust in the Chamber of Labor (Trust AK), a public institution unrelated to financial services, included as a control for general trusting behavior.

We find that trust in the central bank fosters CBDC adoption. A person who trusts the central bank is 8pp more likely to choose a digital euro (column 5). When both Trust CB and Trust Banks are included (column 5), only Trust CB remains significant, suggesting that trust in the issuer of money matters more than trust in banks as payment facilitators.

**Privacy Concerns and Digital Euro Adoption** Column 6 introduces two dummy variables for privacy concerns about the digital euro. We find that individuals with strong privacy concerns are 5pp more likely to choose the status quo than persons with no privacy concerns. However, this effect is not different from zero statistically.<sup>13</sup>

**Bimodality of Status Quo Bias** Figure 4 presents density plots of ASC coefficients for socio-demographic variables. Age and education are important factors contributing to preference heterogeneity and the bimodal shape of status quo preferences. In contrast, cash preference shifts the distribution but does not seem to explain the bimodality.

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<sup>13</sup>Note that the interpretation of the variable “ASC SQ \* Privacy strong concerns” differs from “Privacy”. The former is individual-specific and the latter is choice-specific. The former measures a tendency of a person to choose the status quo, independent from the digital euro variants shown to him. The latter measures whether a digital euro variant with a specific privacy model affects the likelihood of the status quo, independent from any individual-specific effects.

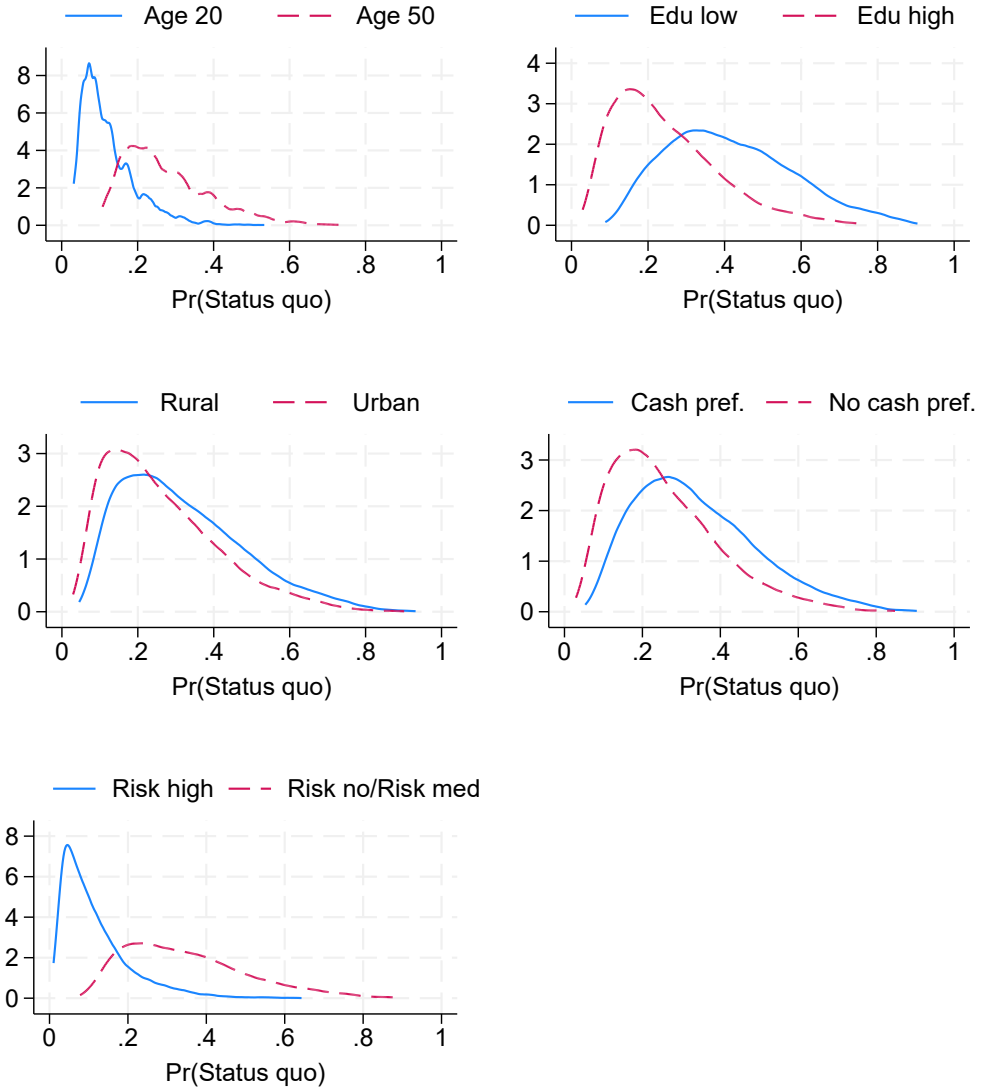


Figure 4: The figure shows the distribution of estimated individual-specific coefficients of ASC Status quo interacted with socio-demographic information. The first four graphs are derived from the results in column 2 of Table 4, the last graph (risk aversion) is derived from column 6.



In an exploratory analysis (not shown), we tested additional variables to understand bimodality. Risk aversion emerged as a significant factor. Column 7 of Table 4 adds a dummy for high financial risk tolerance (willingness to take substantial financial risks for potential high returns). Risk-loving individuals are 23pp more likely to choose the digital euro. The corresponding density plot (last panel of Figure 4) shows that risk attitudes strongly separate adopters from non-adopters.

Since our model selection is not grounded in a theoretical framework, we treat the strong role of risk attitudes as an empirical fact. In the following, we use a refined and parsimonious model which keeps only significant variables, including risk attitudes.

#### **4.3.2. Perceived Non-Acceptance of Payment Instruments**

One potential driver of the demand for CBDC is that it might not always be possible to make payments according to one’s preferences. For example, this may apply to a card-savvy consumer if she can only pay by cash, and vice versa. It might also apply to specific payment situations, like larger value payments or person-to-person payments.

The survey elicited information about the perceived non-acceptance of payment instruments for various types of transactions. Specifically, we asked how often respondents can pay according to their preferences and define dummy variables which are 0 if respondents can “always” pay how they like and 1 if they answer “most of the time”, “rarely” or “never”. In addition, we define a composite measure summarizing all domestic spending categories (“Non-acceptance”). This indicator is 1 if a person cannot always pay how she prefers, which applies to 61% of respondents (weighted). In Table S.2, we test whether perceived non-acceptance affects choice probabilities.

The column 1 results show that perceived non-acceptance increases intentions to adopt CBDC. Specifically, if a person cannot always pay using the preferred method, she is 11 pp less likely to choose the status quo. This amounts to a very sizeable impact, given the status quo share of 29%.

In columns 2 to 7, we decompose perceived non-acceptance into individual payment situations. Perceived non-acceptance for daily and internet transactions has no significant effect. We find significant effects for small-value transactions (below 5 euro, marginal effect 6 pp), for large-value transactions (2,000 euro, 9 pp), catering expenditures (8 pp), person-to-person payments (5 pp). and payments on the internet (5 pp).

Overall, these findings seem plausible. Under the current payment options, it can be strenuous to pay for furniture in the value of 2,000 euro. Credit cards, a natural

candidate, are only owned by about half of the adult population. With many debit cards, the limit has to be raised in the online banking application before making such a payment. The most common way would be a bank transfer.

For expenditures in restaurants, bars etc. it is still widespread, in particular outside of cities, that only cash is accepted or preferred. Finally, P2P payments most often have to be conducted in cash.

However, despite their plausibility, we caution about overinterpreting the results for individual spending categories. We note that the significance can vary with the addition or omission of individual-specific variables, which can be attributed to correlation among behavioral variables. In turn, our finding regarding the overall measure of perceived non-acceptance is robustly significant.

## **5. Differences Across Consumer Groups**

So far we have included individual-specific variables to understand the drivers of status quo preferences. In a next step, we will conduct regressions for subsamples to scrutinize the heterogeneous response regarding some of the explanatory variables.

### **5.1. A Closer Look at the Role of Privacy**

The previous findings suggest that a stronger or weaker privacy model has only a minor impact on choice probabilities (as indicated by the variable Privacy). At the same time, we found that persons with strong concerns about data protection are more likely to choose the status quo. In this section, we delve deeper into these results by analyzing whether the effect of privacy depends on monthly cost savings and whether its role differs across subsamples with different levels of privacy concerns.

We introduce an interaction effect between Privacy and Monthly savings (see column 1 of Table S.3). The left panel of Figure 5 visualizes the simulated marginal effects.

Three key insights emerge:

1. Adoption likelihood increases with monthly cost savings, regardless of whether a weaker form or stronger form of privacy is offered to respondents.
2. In the absence of monetary incentives, consumers are indifferent between the two privacy models.

Table 5: Individual-Specific Variables and Perceived Non-Acceptance (selected results)

|                          | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <u>Mean</u>              |                      |                      |                      |                      |                      |                      |                      |
| ASC SQ * Age             | 0.053***<br>(0.010)  | 0.060***<br>(0.011)  | 0.064***<br>(0.011)  | 0.051***<br>(0.009)  | 0.054***<br>(0.009)  | 0.061***<br>(0.010)  | 0.064***<br>(0.011)  |
| ASC SQ * Edu low         | 1.263***<br>(0.432)  | 1.765***<br>(0.595)  | 1.374***<br>(0.462)  | 1.405***<br>(0.451)  | 1.454***<br>(0.594)  | 1.485***<br>(0.407)  | 1.604***<br>(0.471)  |
| ASC SQ * Edu med         | -0.109<br>(0.329)    | 0.057<br>(0.344)     | 0.280<br>(0.304)     | 0.142<br>(0.328)     | -0.238<br>(0.294)    | 0.007<br>(0.285)     | 0.043<br>(0.284)     |
| ASC SQ * Rural           | 0.562<br>(0.346)     | 0.449<br>(0.369)     | 0.343<br>(0.292)     | 0.547*<br>(0.280)    | 0.288<br>(0.296)     | 0.527**<br>(0.254)   | 0.571**<br>(0.263)   |
| ASC SQ * Cash preference | 0.611*<br>(0.328)    | 0.681*<br>(0.354)    | 0.760**<br>(0.320)   | 0.765**<br>(0.342)   | 0.752**<br>(0.302)   | 0.942***<br>(0.308)  | 0.896**<br>(0.387)   |
| ASC SQ * Trust CB        | -0.798*<br>(0.472)   | -1.244***<br>(0.474) | -1.052**<br>(0.460)  | -0.654*<br>(0.348)   | -1.283***<br>(0.444) | -0.697<br>(0.461)    | -0.915*<br>(0.524)   |
| ASC SQ * Trust banks     | -0.933*<br>(0.498)   | -0.431<br>(0.352)    | -0.509<br>(0.559)    | -1.076**<br>(0.444)  | -0.581*<br>(0.311)   | -1.035**<br>(0.474)  | -0.747<br>(0.506)    |
| ASC SQ * Trust AK        | 0.417<br>(0.405)     | 0.851*<br>(0.469)    | 0.954*<br>(0.535)    | 0.357<br>(0.391)     | 0.659<br>(0.404)     | 0.351<br>(0.283)     | 0.295<br>(0.289)     |
| ASC SQ * Risk high       | -4.004***<br>(0.357) | -4.051***<br>(0.437) | -4.298***<br>(0.410) | -4.080***<br>(0.406) | -3.952***<br>(0.385) | -3.832***<br>(0.290) | -4.022***<br>(0.318) |
| ASC Status quo           | 4.727***<br>(0.556)  | 3.425***<br>(0.520)  | 2.784***<br>(0.845)  | 4.098***<br>(0.523)  | 4.287***<br>(0.714)  | 3.678***<br>(0.496)  | 3.701***<br>(0.573)  |
| Privacy                  | 0.121*<br>(0.068)    | 0.130*<br>(0.070)    | 0.121*<br>(0.068)    | 0.124*<br>(0.069)    | 0.127*<br>(0.069)    | 0.126*<br>(0.068)    | 0.131*<br>(0.068)    |
| Card                     | 0.835***<br>(0.119)  | 0.915***<br>(0.112)  | 0.888***<br>(0.112)  | 0.842***<br>(0.113)  | 0.850***<br>(0.109)  | 0.826***<br>(0.118)  | 0.806***<br>(0.113)  |
| Also offline             | -2.229***<br>(0.414) | -1.870***<br>(0.260) | -2.234***<br>(0.341) | -2.228***<br>(0.356) | -2.190***<br>(0.386) | -2.234***<br>(0.370) | -2.260***<br>(0.385) |
| Loss none                | 1.197***<br>(0.046)  | 1.206***<br>(0.045)  | 1.204***<br>(0.045)  | 1.228***<br>(0.048)  | 1.213***<br>(0.046)  | 1.202***<br>(0.046)  | 1.202***<br>(0.046)  |
| Loss limited             | 0.554***<br>(0.057)  | 0.551***<br>(0.056)  | 0.562***<br>(0.056)  | 0.563***<br>(0.057)  | 0.565***<br>(0.056)  | 0.557***<br>(0.056)  | 0.557***<br>(0.055)  |
| Monthly savings          | -2.671***<br>(0.131) | -2.704***<br>(0.126) | -2.697***<br>(0.132) | -2.605***<br>(0.119) | -2.688***<br>(0.133) | -2.752***<br>(0.140) | -2.742***<br>(0.133) |
| ASC SQ * Non-acceptance  | -1.632***<br>(0.342) |                      |                      |                      |                      |                      |                      |
| ASC SQ * Small-value     |                      | -0.937**<br>(0.427)  |                      |                      |                      |                      |                      |
| ASC SQ * Daily           |                      |                      | 0.678*<br>(0.377)    |                      |                      |                      |                      |
| ASC SQ * High-value      |                      |                      |                      | -1.453***<br>(0.307) |                      |                      |                      |
| ASC SQ * Catering        |                      |                      |                      |                      | -1.275***<br>(0.293) |                      |                      |
| ASC SQ * P2P             |                      |                      |                      |                      |                      | -0.754**<br>(0.358)  |                      |
| ASC SQ * Internet        |                      |                      |                      |                      |                      |                      | -0.485<br>(0.298)    |
| LogL                     | -7250.93             | -7259.35             | -7261.94             | -7227.90             | -7256.67             | -7258.25             | -7259.22             |
| N                        | 9940                 | 9930                 | 9930                 | 9900                 | 9930                 | 9930                 | 9930                 |
| Persons                  | 994                  | 993                  | 993                  | 990                  | 993                  | 993                  | 993                  |

Note: The table shows selected results from mixed logit models. The full table is shown in the Supplement. The point estimates denote the mean of the chosen distribution. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

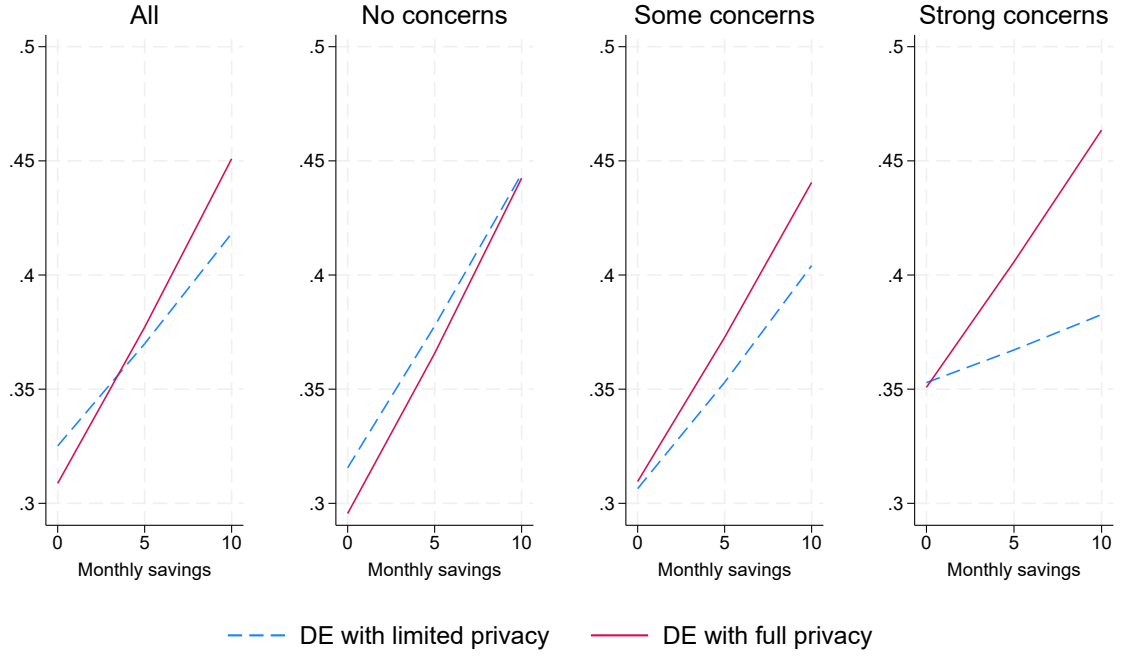


Figure 5: The figure shows the predicted probabilities of choosing digital euro variant 2, depending on the assumed privacy model and monthly savings. The left panel shows results for the full sample. The other panels show results for splitting the sample into respondents who state no privacy concerns, some concerns or strong concerns regarding a digital euro. The simulations are based on point estimates of Table S.3.

3. Only with large monthly savings, a full privacy digital euro has a slightly higher adoption rate - for instance, at €10 per month, adoption is 3.2 percentage points (pp) higher for the stronger privacy model.

This analysis highlights that monetary incentives are valued significantly more than differences in privacy levels. For example, with a fully privacy-preserving model, adoption increases by 14 pp when monthly savings rise from €0 to €10. Under a limited privacy model, the increase is still 9 pp, or roughly two thirds of the full-privacy effect.

**Heterogeneity Across Privacy Concern Levels** A survey question after the choice experiment asked respondents about their overall privacy concerns regarding the digital euro. Applying survey weights, the results show that 30% of respondents have strong concerns, 33% have some concerns and 37% have little or no concerns.

Given that 63% of the population express at least some level of concern, privacy is an important issue. However, does it influence actual choice behavior?

Columns 2 – 4 of Table S.3 report separate estimations for each subsample. The corresponding simulated choice probabilities are shown in Figure 5.

We see that approval increases with monetary savings in all three subsamples when full privacy is offered, suggesting respondents understood the experiment. Under limited privacy, behavior differs significantly across groups. Those with strong privacy concerns are not sensitive to monetary rewards. Those with some concerns or no concerns do not differentiate between full and limited privacy.

While caution is warranted due to the smaller sample sizes, the results suggest:

1. If a digital euro offers no monetary benefit, the privacy model does not affect choice probabilities.
2. For those with no or only some privacy concerns (70% of respondents), monetary incentives drive adoption, with privacy playing no or only a small role.
3. For highly privacy-concerned individuals, adoption does not respond to monetary incentives under limited privacy – for them, privacy outweighs financial benefits.

## 5.2. The Role of Payment Behavior

We next examine whether the intention to adopt a digital euro depends on current payment patterns. To do this, we classify respondents into three groups based on their

self-reported payment behavior: Cash payers (predominantly use cash), Intermediate payers (use both cash and digital means) and Non-cash payers (rarely use cash).

**Differences in Status Quo Bias Across Payment Groups** Figure 6 plots the simulated distributions of ASC Status quo coefficients for cash payers and non-cash payers. Two key patterns emerge: Cash payers exhibit a stronger tendency to remain with the status quo. Non-cash payers display bimodal behavior - some have a similar status quo bias as cash payers, while others have a significantly lower status quo bias.

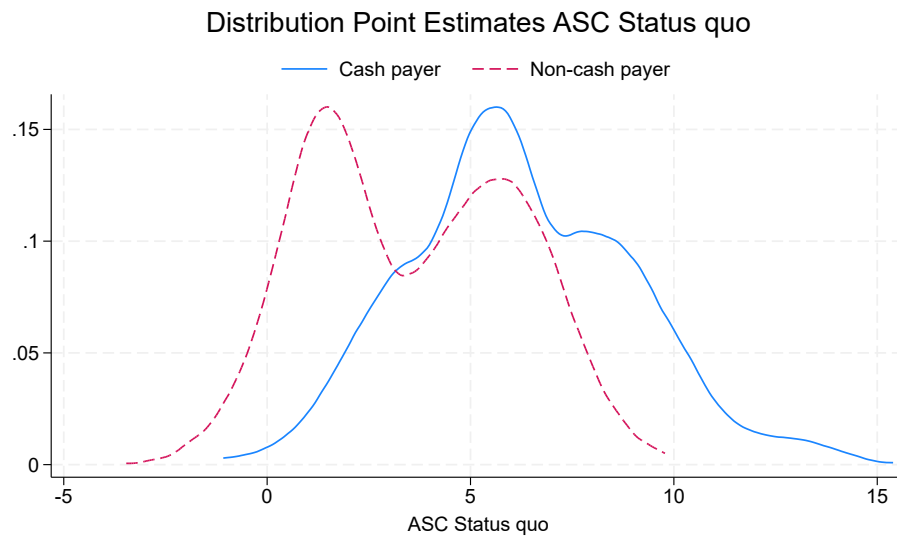


Figure 6: The figure shows the distribution of estimated individual-specific coefficients of ASC Status quo for cash payer and for non-cash payer.

The corresponding estimation results (Online Appendix, Table S.4) reveal further heterogeneities. Some of these heterogeneities are related to attribute-specific effects by payment group. The preference for a payment card (over a smartphone app) is only significant for cash payers and intermediate payers. Among non-cash payers, the coefficient is insignificant, suggesting that preferences for cards vs. apps are evenly split in this group. Privacy, risk of losses, and theft concerns have similar effects across all three groups.

## 6. Robustness

### 6.1. Accounting for Survey Satisfaction

Our experiment required respondents to complete ten choice tasks, with a median completion time of 2 minutes and 20 seconds. Since comparing multiple digital euro variants may have been cognitively demanding, some respondents might have found the task challenging, introducing potential biases.

To assess this, we included a post-experiment survey question on survey satisfaction. Respondents were asked how difficult they found the choices, with responses recorded on a four - point scale: "very", "rather", "rather not" and "not at all". Notably, 53% of respondents indicated that ranking choices was "very" or "rather" difficult. In a second question, 64% felt that there were too many choices.

To test whether survey dissatisfaction affects our findings, we include these variables in our baseline models (Table S.5). Both variables are statistically significant, meaning that survey dissatisfaction influences the likelihood of choosing a digital euro. However, reassuringly, including these controls does not change the qualitative implications of our main findings.

### 6.2. Restricting the Estimation Sample

Another potential concern is that some respondents provided inconsistent or inattentive answers. We provide robustness tests by implementing restrictions on the sample. In column 2 in Table S.6 we exclude respondents who always chose a digital euro but reported disliking it ("problematic" responses). In column 3 we exclude surveys conducted by interviewers with a high share ( $> 90\%$ ) of problematic responses. Finally, in column 4 we omit respondents who completed the experiment in less than one minute, as they likely did not carefully consider their choices.

Results remain qualitatively unchanged across specifications. Notably, the precision of some estimates increases, such as for privacy, while the marginal effect remains stable.

### 6.3. Adding Never taker and Defier

Throughout the main analysis, we exclude respondents who consistently opted out in all choice tasks (Never taker) and those who refused to participate in the experiment (Defier). Given the strong selection into participation, we examine whether our results change when including these groups.

Column 2 of Table S.7 includes Never taker. Columns 3 – 5 additionally include Defier. Since Defier were not randomly assigned digital euro attributes during the interview, we ex post simulate three random assignments and assume that Defier always choose the status quo. We consider this assumption reasonable but also stress that it is essential for the following results.<sup>14</sup>

As expected, adding Never taker and Defier increases the estimated ASC status quo, reflecting their higher status quo preference. Importantly, the estimated coefficients for the digital euro attributes remain stable. Reassuringly, this is also the case for Never taker (column 2), where no assumptions about choice behavior have to be made.

Across all robustness tests, our key findings remain intact: Survey dissatisfaction affects choices but does not alter core results. Excluding inattentive respondents increases estimate precision but does not change findings. Including Never taker and Defier raises the status quo bias but leaves digital euro attribute effects qualitatively unaffected. These checks provide strong evidence that our conclusions are robust to potential concerns related to survey fatigue, response inconsistencies, and sample selection effects.

## 7. What Can We Say About Expected Adoption?

Understanding potential adoption is a key concern for policymakers. Our estimates - including Never taker and Defier - allow us to simulate expected adoption rates in the broader population. Using the results from column 5 of Table S.7, we derive individual-specific choice probabilities for different implementation scenarios.

**Adoption Under Different Digital Euro Designs** Since adoption rates depend on the specific attributes of the digital euro (DE), we simulate take-up under two contrasting scenarios:

1. A realistic implementation: Reflecting what is most likely in an initial CBDC rollout, we assume: No monetary incentives, unlimited financial loss in case of

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<sup>14</sup>The assumption upholds that non-participation is driven by utility considerations in relation to a digital euro and not by other considerations, like survey fatigue, dissatisfaction with the interviewer, etc. We consider this assumption reasonable for two reasons: First, we observe that among the 449 respondents who initially stated that they are not at all interested in a digital euro, 158 were probed and could be convinced to nevertheless participate in the experiment. Among these “probed defiers” only 3% believe that a digital euro generates overall benefits for them and 71% are Never taker or Rarely taker. Second, a close association between beliefs about whether a digital euro provides personal benefits and choice behavior can also be observed for Never taker. Among Never taker, 0% state that a digital euro is beneficial (see Table 2).



theft or loss, limited privacy, offline functionality enabled, available as a payment card.

2. An idealized, highly attractive implementation: Optimized based on our estimates, we assume: €10 monthly savings incentive, full financial loss protection (zero liability), full privacy, offline functionality enabled, available as a payment card.

Both simulations use the baseline mixed-logit specification (Table 3, column 2), excluding socio-demographic variables to focus purely on choice-specific effects.

**Expected Adoption** Under a realistic implementation, the average probability of choosing the digital euro is 37%. Under an idealized implementation, predicted adoption rises to 62%.

This means that 37% of individuals in our sample would derive greater utility from a realistically designed digital euro compared to the status quo. For reference, the take-up rate using weighted regressions is 39%, suggesting that population representativeness does not significantly alter the results.

**Adoption by Payment Behavior** Expected take-up rates also vary by current payment behavior. When re-estimating the model separately for different groups, we find:

- Cash payers: 31% adoption under the realistic scenario.
- Intermediate payers: 37% adoption
- Non-cash payers: 40% adoption

These results suggest that adoption is not confined to digital payment users but extends across different payment preference groups.

**Qualifications** We note that these estimates represent an upper bound. First, the choice probabilities must be interpreted in the context of the experiment and the framing of the questions. Specifically, respondents were encouraged to consider a digital euro, even if they were not quite sure (see Figure 1). Second, our experiment does not mention or consider adoption costs. Pecuniary or non-pecuniary adoption costs will have a detrimental effect on adoption. Also the results refer to intended adoption and not intended use.

## 8. Policy Implications: What Should Policy Makers Take Away?

Our findings provide valuable insights for policymakers designing and implementing a digital euro. The introduction of a central bank digital currency (CBDC) is a complex endeavor that requires careful consideration of consumer preferences and behavioral responses. Based on our empirical evidence, we outline several key implications for policy:

**1. Expected Adoption is Not Negligible** Our simulations indicate that, under a realistic design, around 37% of consumers intend to adopt a digital euro. This suggests that while a digital euro would not immediately become the dominant payment method, it could play a significant role in the payments landscape. Policymakers should interpret this as a strong indication of consumer interest, warranting further investment in user-friendly and attractive design choices.

**2. Security and Financial Incentives Drive Adoption** The most influential factors for adoption are the mitigation of financial risks (e.g., protection against loss and fraud) and financial incentives (e.g., cost savings or cashback mechanisms). Policymakers should consider how to balance security features with usability, ensuring that the digital euro offers meaningful advantages over existing payment options.

**3. Privacy Concerns Exist but Do Not Significantly Deter Adoption** Although privacy debates are central in public discourse, our findings suggest that privacy considerations alone do not strongly drive adoption decisions. Consumers appear willing to accept limited privacy if other features, such as security and financial incentives, are compelling. Nevertheless, transparency and clear communication regarding data protection will be crucial for public trust.

**4. Offline Functionality Has Limited Influence on Adoption** Enabling offline payments was found to have a relatively minor effect on adoption. While some consumer segments may value this feature, it is not a decisive factor. Policymakers should therefore weigh the costs and technical challenges of implementing offline capabilities against the relatively modest benefits.

**5. Adoption Varies by Payment Behavior** Intended adoption is non-negligible both among card and cash payers and the differences between the two groups is not as large as one might have suspected.

**6. Trust in the Issuer Matters** Trust in the central bank is a significant determinant of adoption. This highlights the importance of communication and engagement strategies to reinforce confidence in the digital euro as a safe, reliable, and accessible payment option.

Taken together, these insights suggest that the success of a digital euro will depend on careful design choices that align with consumer preferences. While technical feasibility is a necessary condition, user acceptance will ultimately determine its effectiveness as a widely adopted payment instrument.

## 9. Conclusion

The findings from our DCE provide evidence-based insights into the key factors influencing adoption decisions and the broader implications for CBDC design and policy.

We find that expected adoption under realistic implementation scenarios is substantial. While security and financial incentives emerge as the most influential adoption drivers, privacy concerns, offline functionality, and payment behavior also play important roles. Our results underscore the necessity for policymakers to strike a balance between usability, security, and privacy when designing the digital euro.

Beyond adoption considerations, our study highlights the importance of trust in central bank-issued money. Building and maintaining trust will be essential for ensuring the long-term success of a digital euro. This involves not only effective design but also clear public communication, transparency, and responsiveness to consumer concerns.

While these estimates provide a snapshot of potential adoption in Austria, they do not necessarily extend to other countries or across time: preferences and behaviors may shift with time, technological advancements, and policy incentives, and information on the digital euro will improve. Austria's payment habits, trust in institutions, and digital infrastructure may influence our results. One policy take-away that is nevertheless supported by our evidence is that even in a cash-intensive country like Austria, adoption rates are found to be non-negligible.

Looking ahead, further research should be considering other countries from the euro area and explore other areas such as dynamic adoption patterns over time, including

potential shifts in consumer behavior as digital payment ecosystems evolve. Future work should also assess how complementary regulatory and financial policies can enhance the attractiveness of the digital euro.

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# Appendices



## A. Appendix: Data and Descriptive Statistics

### A.1. Survey description

The data are derived from a survey commissioned by the Oesterreichische Nationalbank and conducted by IFES, a market research institute. The survey has been undertaken semi-annually and mainly focuses on economic sentiments and expectations regarding inflation, the state of the economy and the financial situation of survey respondents.

The choice experiment is embedded in the regular survey with a sample size of randomly selected 1,421 respondents with a residency in Austria. 89% of interviews were carried out via computer-assisted personal interviews at the address of respondents. About 11% of respondents were sampled for self-conducted web interviews. All interviews were carried out between the 3rd of March and the 31st of May 2024.

The data set contains post-stratification survey weights which were computed taking into account design weights and non-response weights. The survey weights render the sample representative with respect to region, gender, age, education and internet use, and some combinations of these variables. The target population consists of persons with a permanent residency in Austria with an age of 16 years or older.

A definition of variables is provided in appendix A.2 and descriptive statistics are summarized in Table A.1.

### A.2. Variable Definition

#### A.2.1. Individual-level control variables

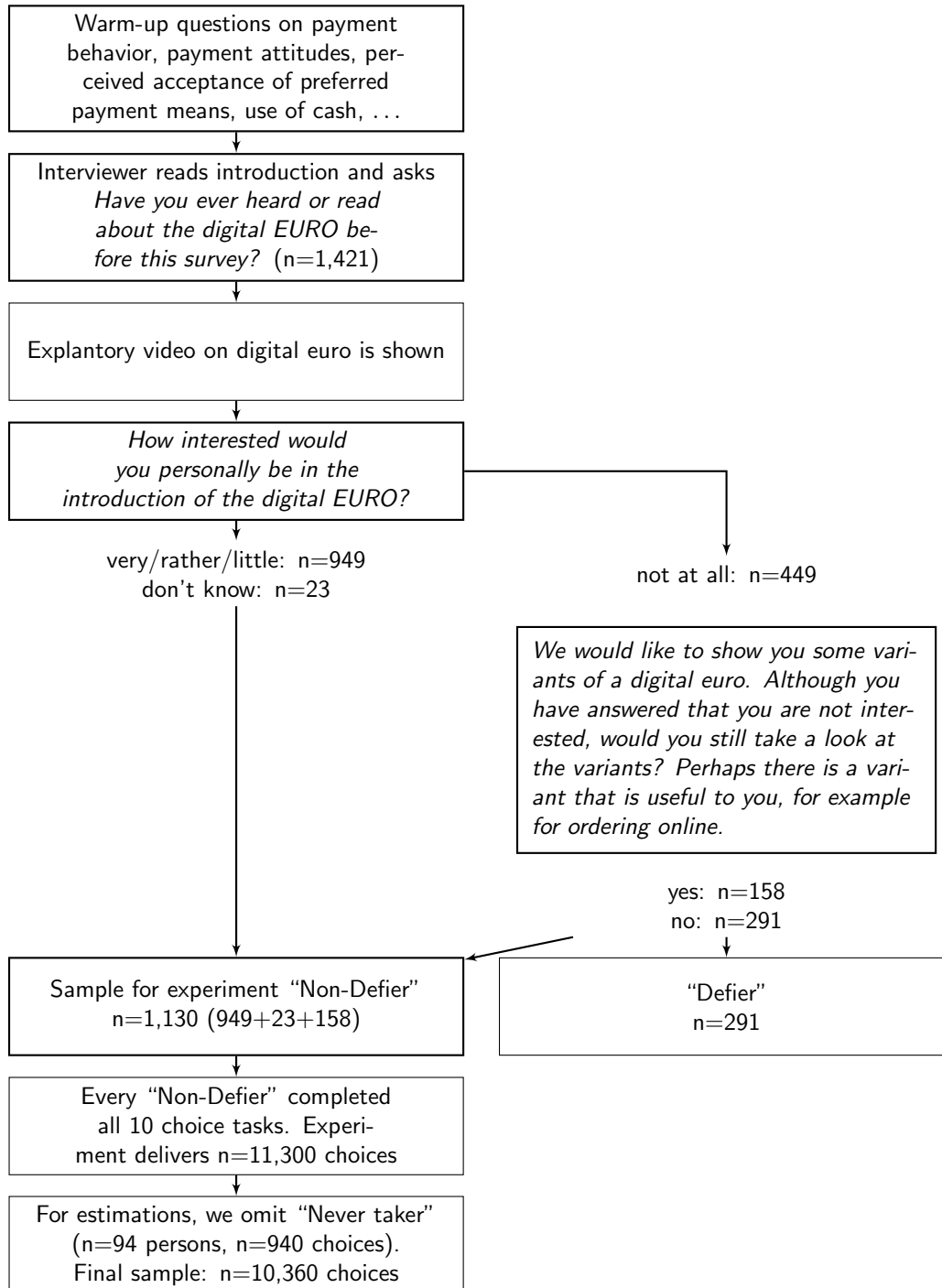
We only describe variables that are not self-explaining.

*Education:* “Edu high”=1 if high school or university, “Edu med”=1 if apprenticeship or middle school, “Edu low”=1 if only mandatory schooling (base category).

*Financial situation good:* Based on: “All in all, how would you judge the current financial situation of your household?” Dummy variable=1 if respondents answered “fin. sit. very good” or “fin. sit. good”, =0 if “fin. sit. rather bad”, “fin. sit. bad”.

*Financial assets:* Dummy variable = 1 if respondent holds equity, investment funds, bonds, or other assets, 0 otherwise.

Figure A.1: Flowchart of questionnaire and construction of estimation sample



*No financial risk:* Based on: “If there are financial decisions in your household: which of the following statements best describes your attitude toward risk’: a) if I can expect a substantial profit, I am willing to take substantial financial risks; b) if I can expect an above-average profit, I am willing to take above-average risks; c) if I can expect average profits, I am willing to take average financial risks; d) I do not want to take any risk.” No financial risk = 1 if respondents choose answer d), 0 otherwise.

*Cash preference:* Based on “Suppose you make a purchase of 50 EURO in a supermarket today - you have enough cash in your pocket and the supermarket accepts both card payments and contactless payments by card or cell phone. How would you prefer to pay for this purchase?” Dummy variables coded as 1 if “cash”, 0 otherwise.

*Cash-affine:* Derived from self-stated payment behavior. “If you think about all your purchases, payments for services and leisure activities in a month – by value, do you spend more in cash or more cashless, i.e. with cards or cell phone?”. Cash payer=1 if “cash only” and “more cash than cashless”, Intermediate payer=1 if “roughly the same amount in cash and cashless”, Non-cash payer=1 if “more cashless than cash” or “mainly cashless”.

*Trust in institutions:* Based on “How much do you trust the following institution . . .”. a) the Oesterreichische Nationalbank (Central Bank of Austria)? b) domestic banks, c) the Chamber of Labor (AK). Dummy variables coded as 1 if “very high” and “high”, 0 if “rather low” or “very low”.

*Heard of d-euro:* Based on: “Have you ever heard or read about the digital EURO before this survey? a) yes; b) no.” Heard of d-euro= 1 if respondents choose answer a), 0 otherwise. Don’t know answers are omitted.

*Interested in d-euro:* Based on: “How interested would you personally be in the introduction of the digital EURO? a) very; b) rather; c) little; d) not at all.” Interested in d-euro= 1 if respondents choose answer a) or b), 0 otherwise. Don’t know answers are omitted.

*D-euro provides benefits:* Based on: “Do you think the digital EURO will provide you with overall benefits? a) yes, for sure; b) rather sure; c) rather not; d) no, certainly not.” D-euro provides benefits= 1 if respondents choose answer a) or b), 0 otherwise. Don’t know answers are omitted.

*Privacy concerns:* Based on: “Overall: Do you have any concerns about the protection of your personal data in connection with the digital EURO? a) yes, strong concerns; b) rather concerns; c) rather no concerns; d) no, no concerns at all, e) I don’t care, f) I don’t know.” Privacy strong concerns = 1 if respondents choose answer a), 0 if respondents choose answers b) to e). Privacy some concerns = 1 if respondents choose answer b), 0 otherwise. Privacy no concerns = 1 if respondents choose answers c), d), or e), 0 otherwise. Don’t know answers are omitted.

*Perceived non-acceptance of preferred payment instrument:* Based on “In the following payment situations, how often can you use your preferred payment method?”. Answers comprise “always”, “mostly”, “rareley”, “never”, “does not apply to me” and “don’t know”. Perceived non-acceptance = 1 if respondent answers “mostly”, “rareley”, “never” and = 0 if respondent answers “always”.

We define this variable for the following payment situations:

- “Small-value purchases (5 euro)”: based on “for small payments of 5 euro (e.g. bakery)”.
- “Daily grocery shopping”: based on “for daily grocery shopping”.
- “High value-shopping (2000 euro)”: based on “for a larger purchase, e.g. purchase of a piece of furniture worth 2,000 euro”.
- “Restaurants, bar, fast-food”: based on “for restaurants, bars, fast-food, . . .”.
- “For payments to persons”: based on “for payments directly to persons (e.g. gifts of money, tips, private sales)”.
- “Internet payments”: based on “for payments on the internet”.
- “Payments abroad”: based on “when traveling abroad in EURO countries”.

In addition we define a dummy variable “Non-acceptance” which is 1 if a respondent states non-acceptance in at least one of the domestic spending categories.

## **Experiment evaluation and cognitive debriefing questions**

“How did you feel when answering the questions? Were the choices very, rather, rather not or not at all ...? a) easy to understand; b) difficult to compare; c) difficult to rank; d) too many choices; e) It is generally unclear to me how a digital EURO is supposed to work; f) I am fundamentally against a digital EURO.”

Dummy variables = 1 if “very” or “rather”, = 0 if “rather not” or “not at all”.

### **A.3. Descriptive Statistics**

Table A.1: Descriptive statistics

|   | mean  | sd    | min   | max   | N    |
|---|-------|-------|-------|-------|------|
| Panel A. Choice behavior (individual level)                         |       |       |       |       |      |
| Always taker  | 0.28  | 0.45  | 0.00  | 1.00  | 1421 |
| Sometimes taker   | 0.30  | 0.46  | 0.00  | 1.00  | 1421 |
| Rarely taker  | 0.15  | 0.35  | 0.00  | 1.00  | 1421 |
| Never taker   | 0.07  | 0.25  | 0.00  | 1.00  | 1421 |
| Defier  | 0.20  | 0.40  | 0.00  | 1.00  | 1421 |
| Panel B. Socio-demographics, payment behavior, tech-affinity, trust |       |       |       |       |      |
| Male  | 0.46  | 0.50  | 0.00  | 1.00  | 1421 |
| Age   | 54.14 | 17.16 | 16.00 | 94.00 | 1421 |
| Edu low   | 0.11  | 0.31  | 0.00  | 1.00  | 1421 |
| Edu med   | 0.53  | 0.50  | 0.00  | 1.00  | 1421 |
| Edu high  | 0.36  | 0.48  | 0.00  | 1.00  | 1421 |
| Financial situation good  | 0.78  | 0.41  | 0.00  | 1.00  | 1406 |
| Financial assets  | 0.31  | 0.46  | 0.00  | 1.00  | 1411 |
| No financ. risk   | 0.48  | 0.50  | 0.00  | 1.00  | 1421 |
| Cash preference 50 euro   | 0.44  | 0.50  | 0.00  | 1.00  | 1421 |
| Cash payer  | 0.48  | 0.50  | 0.00  | 1.00  | 1421 |
| Intermediate payer  | 0.21  | 0.41  | 0.00  | 1.00  | 1421 |
| Non-cash payer  | 0.31  | 0.46  | 0.00  | 1.00  | 1421 |
| Privacy strong concerns   | 0.33  | 0.47  | 0.00  | 1.00  | 1395 |
| Privacy concerns  | 0.67  | 0.47  | 0.00  | 1.00  | 1395 |
| Trust in central bank   | 0.83  | 0.37  | 0.00  | 1.00  | 1384 |
| Trust in domestic banks   | 0.79  | 0.40  | 0.00  | 1.00  | 1414 |
| Trust AK  | 0.84  | 0.37  | 0.00  | 1.00  | 1388 |
| Heard of d-euro   | 0.70  | 0.46  | 0.00  | 1.00  | 1403 |
| Interested in d-euro  | 0.42  | 0.49  | 0.00  | 1.00  | 1398 |
| D-euro provides benefits  | 0.49  | 0.50  | 0.00  | 1.00  | 1075 |
| Panel C. Perceived non-acceptance                                   |       |       |       |       |      |
| Non-acceptance  | 0.58  | 0.49  | 0.00  | 1.00  | 1421 |
| Small-value purchases (5 euro)                                      | 0.25  | 0.43  | 0.00  | 1.00  | 1420 |
| Daily grocery shopping  | 0.17  | 0.38  | 0.00  | 1.00  | 1420 |
| High-value shopping (2000 euro)                                     | 0.34  | 0.47  | 0.00  | 1.00  | 1417 |
| Restaurants, bar, fast-food   | 0.35  | 0.48  | 0.00  | 1.00  | 1420 |
| For payments to persons   | 0.20  | 0.40  | 0.00  | 1.00  | 1419 |
| Internet payments   | 0.37  | 0.48  | 0.00  | 1.00  | 1418 |
| Payments abroad   | 0.42  | 0.49  | 0.00  | 1.00  | 1410 |

Table A.1: Descriptive statistics (con't)

|                                   | N    | mean | sd   | min  | max  |
|-----------------------------------|------|------|------|------|------|
| Panel D. Evaluation of experiment |      |      |      |      |      |
| Easy to understand                | 0.84 | 0.36 | 0.00 | 1.00 | 1126 |
| Cumbersome to compare             | 0.58 | 0.49 | 0.00 | 1.00 | 1128 |
| Difficult to rank                 | 0.53 | 0.50 | 0.00 | 1.00 | 1125 |
| Too many tasks                    | 0.64 | 0.48 | 0.00 | 1.00 | 1126 |
| D-euro unclear                    | 0.36 | 0.48 | 0.00 | 1.00 | 1124 |
| I am against a D-euro             | 0.48 | 0.50 | 0.00 | 1.00 | 1087 |

# Supplement: Additional Material

## (not for publication)

### S.1. Example of a showcard

Figure S.1 shows an example of a showcard used in the personal interviews (CAPI).



|                              | Variant 1   | Variant 2   | Neither of these variants |
|------------------------------|---|---|---------------------------|
| Form                         |  |  |                           |
|                              | Card  | Card  |                           |
| Protection of personal data  | Data can only be tracked by your bank   | Data cannot be tracked by anyone  |                           |
| Risk of loss or theft        | Partial refund - maximum loss of 250 EURO   | Full refund - you have no risk of loss  |                           |
| Internet connection required | Yes   | Yes   |                           |
| Elimination of other fees    | 10 EURO monthly savings   | no savings  |                           |

Figure S.1: Example of a showcard for personal interviews

### S.2. Transcript of the video shown to interviewees

The video was produced by a professional video editor with a TV-trained speaker. Its duration is 2 minutes and 25 seconds. Everything is spoken by one male speaker, except from the interviews with the two women.



**Video transcript (own translation).** It is THE future project of the European Central Bank – the digital euro. Have you heard of it?

*Interview with an older woman on a street scene:* “Yes, I’ve heard of it, but I haven’t looked into it because the concept wasn’t clear to me.”

*Interview with a younger woman (student) on a street scene:* “I’ve heard of it - yes, but I don’t quite understand it (laughs)”.

Well then, a brief explanation: The digital euro is intended to be an evolution of cash. Wherever cash cannot be used, such as for online purchases or other cashless payment systems, the digital euro will offer an additional option in the future. Payments with the digital euro should be quick, easy, and convenient in all eurozone countries, either with a dedicated payment card or via an app on a smartphone. In addition to the usual use in stores, restaurants, vending machines, or on the internet, the digital euro can also be sent directly to other people, for example, for money gifts or private purchases. Essentially, it’s like cash, but in digital form.

But aren’t there already enough ways to pay digitally? True, but all current providers are foreign, profit-oriented payment service providers. Every transaction has its price: for merchants in the form of fees, for consumers through the disclosure of their data. In contrast, the digital euro is intended to be based on an independent, public European payment system - issued and guaranteed by the European Central Bank - and free of charge, with the highest possible, legally regulated privacy protection.

*Interview with the older woman:* “Ah, then I need to read up on it again. Then I might be in favor of it (laughs).”

Whether you want to use the digital euro as an additional option in the future is up to you. The top principle remains freedom of choice, meaning you can still decide in the future whether you prefer to pay with cash or digitally.

Table S.1: Individual-Specific Variables and Status Quo Preference (full results)

|                                  | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <u>Mean</u>                      |                      |                      |                      |                      |                      |                      |                      |
| ASC Status quo                   | 1.354***<br>(0.356)  | 0.683**<br>(0.338)   | 1.614***<br>(0.563)  | 1.847***<br>(0.522)  | 2.242***<br>(0.473)  | 2.385***<br>(0.785)  | 3.383***<br>(0.606)  |
| ASC SQ * Age                     | 0.095***<br>(0.010)  | 0.093***<br>(0.012)  | 0.089***<br>(0.012)  | 0.087***<br>(0.009)  | 0.087***<br>(0.009)  | 0.092***<br>(0.011)  | 0.065***<br>(0.009)  |
| ASC SQ * Edu low                 | 2.199***<br>(0.433)  | 2.497***<br>(0.435)  | 2.685***<br>(0.555)  | 1.655***<br>(0.474)  | 1.934***<br>(0.459)  | 1.562***<br>(0.528)  | 1.880***<br>(0.626)  |
| ASC SQ * Edu med                 | 0.898***<br>(0.335)  | 0.768**<br>(0.327)   | 0.404<br>(0.308)     | 0.522*<br>(0.293)    | 0.476<br>(0.332)     | 0.130<br>(0.479)     | 0.329<br>(0.297)     |
| ASC SQ * Male                    | -0.468<br>(0.294)    |                      |                      |                      |                      |                      |                      |
| ASC SQ * Rural                   | 0.768***<br>(0.286)  | 0.858**<br>(0.373)   | 0.909***<br>(0.289)  | 0.961***<br>(0.286)  | 0.797**<br>(0.328)   | 0.922***<br>(0.346)  | 0.344<br>(0.296)     |
| ASC SQ * Cash preference         |                      | 1.203***<br>(0.339)  | 1.209***<br>(0.309)  | 1.057***<br>(0.344)  | 1.411***<br>(0.317)  | 1.449***<br>(0.479)  | 1.035**<br>(0.431)   |
| ASC SQ * Trust CB                |                      |                      | -0.970***<br>(0.370) |                      | -1.226**<br>(0.530)  | -0.983<br>(0.614)    | -1.549***<br>(0.412) |
| ASC SQ * Trust AK                |                      |                      | 0.144<br>(0.525)     | -0.172<br>(0.537)    | 0.453<br>(0.293)     | 0.504<br>(0.581)     | 1.051**<br>(0.443)   |
| ASC SQ * Trust banks             |                      |                      |                      | -0.959***<br>(0.308) | -0.723<br>(0.485)    | -0.881**<br>(0.430)  | -0.560<br>(0.363)    |
| ASC SQ * Privacy strong concerns |                      |                      |                      |                      |                      | -0.807<br>(0.555)    | -0.477<br>(0.498)    |
| ASC SQ * Privacy some concerns   |                      |                      |                      |                      |                      | -0.120<br>(0.439)    | -0.365<br>(0.334)    |
| ASC SQ * Risk high               |                      |                      |                      |                      |                      |                      | -3.929***<br>(0.380) |
| Privacy                          | 0.128*<br>(0.067)    | 0.144**<br>(0.068)   | 0.107<br>(0.067)     | 0.116*<br>(0.066)    | 0.110<br>(0.068)     | 0.130*<br>(0.068)    | 0.133**<br>(0.068)   |
| Card                             | 0.905***<br>(0.112)  | 0.914***<br>(0.110)  | 0.849***<br>(0.112)  | 0.924***<br>(0.117)  | 0.880***<br>(0.114)  | 0.873***<br>(0.116)  | 0.851***<br>(0.113)  |
| Also offline                     | -2.630***<br>(0.379) | -2.184***<br>(0.324) | -2.150***<br>(0.297) | -2.352***<br>(0.383) | -2.181***<br>(0.304) | -2.468***<br>(0.442) | -2.437***<br>(0.393) |
| Loss none                        | 1.177***<br>(0.045)  | 1.186***<br>(0.047)  | 1.194***<br>(0.046)  | 1.190***<br>(0.046)  | 1.203***<br>(0.045)  | 1.191***<br>(0.047)  | 1.190***<br>(0.046)  |
| Loss limited                     | 0.537***<br>(0.056)  | 0.530***<br>(0.055)  | 0.555***<br>(0.060)  | 0.554***<br>(0.059)  | 0.566***<br>(0.055)  | 0.553***<br>(0.058)  | 0.549***<br>(0.057)  |
| Monthly savings                  | -2.644***<br>(0.139) | -2.650***<br>(0.251) | -2.636***<br>(0.128) | -2.672***<br>(0.115) | -2.730***<br>(0.128) | -2.605***<br>(0.119) | -2.580***<br>(0.116) |
| <u>SD</u>                        |                      |                      |                      |                      |                      |                      |                      |
| ASC Status quo                   | -3.581***<br>(0.164) | -3.545***<br>(0.160) | -3.449***<br>(0.184) | -3.560***<br>(0.172) | -3.557***<br>(0.175) | -3.511***<br>(0.210) | -3.287***<br>(0.185) |
| Privacy                          | 0.935***<br>(0.127)  | 0.894***<br>(0.125)  | 0.892***<br>(0.135)  | 0.953***<br>(0.115)  | 0.941***<br>(0.114)  | -0.961***<br>(0.121) | -0.970***<br>(0.117) |
| Card                             | -2.604***<br>(0.132) | -2.638***<br>(0.133) | -2.544***<br>(0.136) | -2.580***<br>(0.129) | -2.599***<br>(0.142) | 2.552***<br>(0.133)  | 2.580***<br>(0.138)  |
| Also offline                     | -2.332***<br>(0.187) | -1.915***<br>(0.201) | -1.919***<br>(0.137) | -2.033***<br>(0.187) | -1.902***<br>(0.126) | -2.051***<br>(0.208) | -2.045***<br>(0.182) |
| Loss none                        | -0.688***<br>(0.054) | -0.642***<br>(0.058) | -0.672***<br>(0.047) | -0.661***<br>(0.038) | -0.653***<br>(0.042) | 0.664***<br>(0.040)  | 0.668***<br>(0.042)  |
| Loss limited                     | -0.332***<br>(0.055) | -0.353***<br>(0.055) | -0.310**<br>(0.126)  | -0.303***<br>(0.086) | -0.316***<br>(0.055) | -0.325***<br>(0.054) | -0.337***<br>(0.060) |
| Monthly savings                  | 1.311***<br>(0.139)  | 1.273***<br>(0.342)  | 1.261***<br>(0.084)  | 1.329***<br>(0.084)  | 1.370***<br>(0.084)  | 1.250***<br>(0.085)  | 1.160***<br>(0.082)  |
| LogL                             | -7721.13             | -7698.51             | -7362.93             | -7526.00             | -7345.40             | -7272.73             | -7200.84             |
| N                                | 10360                | 10360                | 9950                 | 10140                | 9940                 | 9850                 | 9850                 |
| Persons                          | 1036                 | 1036                 | 995                  | 1014                 | 994                  | 985                  | 985                  |

Note: The table shows results from mixed-logit models with individual-specific variables. The point estimates denote the mean and standard deviation of the chosen distribution. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the point estimates denote the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for 59 clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.2: Individual-Specific Variables and Perceived Non-Acceptance (full results)

|                          | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <u>Mean</u>              |                      |                      |                      |                      |                      |                      |                      |
| ASC SQ * Age             | 0.053***<br>(0.010)  | 0.060***<br>(0.011)  | 0.064***<br>(0.011)  | 0.051***<br>(0.009)  | 0.054***<br>(0.009)  | 0.061***<br>(0.010)  | 0.064***<br>(0.011)  |
| ASC SQ * Edu low         | 1.263***<br>(0.432)  | 1.765***<br>(0.595)  | 1.374***<br>(0.462)  | 1.405***<br>(0.451)  | 1.454**<br>(0.594)   | 1.485***<br>(0.407)  | 1.604***<br>(0.471)  |
| ASC SQ * Edu med         | -0.109<br>(0.329)    | 0.057<br>(0.344)     | 0.280<br>(0.304)     | 0.142<br>(0.328)     | -0.238<br>(0.294)    | 0.007<br>(0.285)     | 0.043<br>(0.284)     |
| ASC SQ * Rural           | 0.562<br>(0.346)     | 0.449<br>(0.369)     | 0.343<br>(0.292)     | 0.547*<br>(0.280)    | 0.288<br>(0.296)     | 0.527**<br>(0.254)   | 0.571**<br>(0.263)   |
| ASC SQ * Cash preference | 0.611*<br>(0.328)    | 0.681*<br>(0.354)    | 0.760**<br>(0.320)   | 0.765**<br>(0.342)   | 0.752**<br>(0.302)   | 0.942***<br>(0.308)  | 0.896**<br>(0.387)   |
| ASC SQ * Trust CB        | -0.798*<br>(0.472)   | -1.244***<br>(0.474) | -1.052**<br>(0.460)  | -0.654*<br>(0.348)   | -1.283***<br>(0.444) | -0.697<br>(0.461)    | -0.915*<br>(0.524)   |
| ASC SQ * Trust banks     | -0.933*<br>(0.498)   | -0.431<br>(0.352)    | -0.509<br>(0.559)    | -1.076**<br>(0.444)  | -0.581*<br>(0.311)   | -1.035**<br>(0.474)  | -0.747<br>(0.506)    |
| ASC SQ * Trust AK        | 0.417<br>(0.405)     | 0.851*<br>(0.469)    | 0.954*<br>(0.535)    | 0.357<br>(0.391)     | 0.659<br>(0.404)     | 0.351<br>(0.283)     | 0.295<br>(0.289)     |
| ASC SQ * Risk high       | -4.004***<br>(0.357) | -4.051***<br>(0.437) | -4.298***<br>(0.410) | -4.080***<br>(0.406) | -3.952***<br>(0.385) | -3.832***<br>(0.290) | -4.022***<br>(0.318) |
| ASC Status quo           | 4.727***<br>(0.556)  | 3.425***<br>(0.520)  | 2.784***<br>(0.845)  | 4.098***<br>(0.523)  | 4.287***<br>(0.714)  | 3.678***<br>(0.496)  | 3.701***<br>(0.573)  |
| Privacy                  | 0.121*<br>(0.068)    | 0.130*<br>(0.070)    | 0.121*<br>(0.068)    | 0.124*<br>(0.069)    | 0.127*<br>(0.069)    | 0.126*<br>(0.068)    | 0.131*<br>(0.068)    |
| Card                     | 0.835***<br>(0.119)  | 0.915***<br>(0.112)  | 0.888***<br>(0.112)  | 0.842***<br>(0.113)  | 0.850***<br>(0.109)  | 0.826***<br>(0.118)  | 0.806***<br>(0.113)  |
| Also offline             | -2.229***<br>(0.414) | -1.870***<br>(0.260) | -2.234***<br>(0.341) | -2.228***<br>(0.356) | -2.190***<br>(0.386) | -2.234***<br>(0.370) | -2.260***<br>(0.385) |
| Loss none                | 1.197***<br>(0.046)  | 1.206***<br>(0.045)  | 1.204***<br>(0.045)  | 1.228***<br>(0.048)  | 1.213***<br>(0.046)  | 1.202***<br>(0.046)  | 1.202***<br>(0.046)  |
| Loss limited             | 0.554***<br>(0.057)  | 0.551***<br>(0.056)  | 0.562***<br>(0.056)  | 0.563***<br>(0.057)  | 0.565***<br>(0.056)  | 0.557***<br>(0.056)  | 0.557***<br>(0.055)  |
| Monthly savings          | -2.671***<br>(0.131) | -2.704***<br>(0.126) | -2.697***<br>(0.132) | -2.605***<br>(0.119) | -2.688***<br>(0.133) | -2.752***<br>(0.140) | -2.742***<br>(0.133) |
| ASC SQ * Non-acceptance  | -1.632***<br>(0.342) |                      |                      |                      |                      |                      |                      |
| ASC SQ * Small-value     |                      | -0.937**<br>(0.427)  |                      |                      |                      |                      |                      |
| ASC SQ * Daily           |                      |                      | 0.678*<br>(0.377)    |                      |                      |                      |                      |
| ASC SQ * High-value      |                      |                      |                      | -1.453***<br>(0.307) |                      |                      |                      |
| ASC SQ * Catering        |                      |                      |                      |                      | -1.275***<br>(0.293) |                      |                      |
| ASC SQ * P2P             |                      |                      |                      |                      |                      | -0.754**<br>(0.358)  |                      |
| ASC SQ * Internet        |                      |                      |                      |                      |                      |                      | -0.485<br>(0.298)    |
| <u>SD</u>                |                      |                      |                      |                      |                      |                      |                      |
| ASC Status quo           | -3.051***<br>(0.152) | -3.212***<br>(0.189) | -3.193***<br>(0.153) | -3.052***<br>(0.154) | -3.262***<br>(0.177) | -3.065***<br>(0.137) | -3.093***<br>(0.143) |
| Privacy                  | 0.959***<br>(0.128)  | 0.960***<br>(0.118)  | 0.970***<br>(0.114)  | 1.021***<br>(0.129)  | 0.993***<br>(0.109)  | 0.992***<br>(0.118)  | 0.975***<br>(0.119)  |
| Card                     | -2.577***<br>(0.143) | -2.558***<br>(0.132) | -2.567***<br>(0.130) | -2.532***<br>(0.137) | -2.589***<br>(0.130) | -2.621***<br>(0.144) | -2.595***<br>(0.140) |
| Also offline             | -1.998***<br>(0.162) | -1.703***<br>(0.093) | 2.005***<br>(0.167)  | -1.913***<br>(0.157) | -1.978***<br>(0.236) | -1.944***<br>(0.158) | -1.952***<br>(0.167) |
| Loss none                | -0.650***<br>(0.036) | -0.660***<br>(0.042) | -0.653***<br>(0.041) | -0.685***<br>(0.041) | -0.649***<br>(0.049) | -0.632***<br>(0.038) | -0.634***<br>(0.036) |
| Loss limited             | -0.350***<br>(0.053) | -0.361***<br>(0.053) | -0.323***<br>(0.057) | -0.358***<br>(0.061) | -0.336***<br>(0.061) | -0.358***<br>(0.045) | -0.352***<br>(0.043) |
| Monthly savings          | 1.293***<br>(0.106)  | 1.315***<br>(0.087)  | 1.325***<br>(0.094)  | 1.227***<br>(0.079)  | 1.339***<br>(0.101)  | 1.395***<br>(0.106)  | 1.383***<br>(0.096)  |
| LogL                     | -7250.93             | -7259.35             | -7261.94             | -7227.90             | -7256.67             | -7258.25             | -7259.22             |
| N                        | 9940                 | 9930                 | 9930                 | 9900                 | 9930                 | 9930                 | 9930                 |
| Persons                  | 994                  | 993                  | 993                  | 990                  | 993                  | 993                  | 993                  |

Note: The table shows results from mixed-logit models with individual-specific variables. The point estimates denote the mean and standard deviation of the chosen distribution. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. "ASC Status quo" denotes the alternative-specific constant of the status quo ("opt-out") option. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the point estimates denote the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.3: The role of privacy (full results)

|                            | All                  | Subsample<br>No privacy concerns | Subsample<br>Some concerns | Subsample<br>Strong concerns |
|----------------------------|----------------------|----------------------------------|----------------------------|------------------------------|
|                            | (1)                  | (2)                              | (3)                        | (4)                          |
| <u>Mean</u> ASC Status quo | 4.662***<br>(0.611)  | 4.660***<br>(1.174)              | 4.381***<br>(0.866)        | 4.776***<br>(1.060)          |
| ASC SQ * Age               | 0.062***<br>(0.009)  | 0.071***<br>(0.014)              | 0.052***<br>(0.016)        | 0.058***<br>(0.018)          |
| ASC SQ * Edu low           | 1.297***<br>(0.442)  | 2.175***<br>(0.795)              | 0.965<br>(0.682)           | 0.308<br>(1.136)             |
| ASC SQ * Edu med           | -0.028<br>(0.302)    | 0.744<br>(0.632)                 | -0.511<br>(0.558)          | -0.243<br>(0.509)            |
| ASC SQ * Rural             | 0.414<br>(0.264)     | 0.569<br>(0.728)                 | 0.917*<br>(0.480)          | 0.334<br>(0.522)             |
| ASC SQ * Cash preference   | 0.612**<br>(0.291)   | -0.880<br>(0.569)                | 1.367***<br>(0.515)        | 1.278**<br>(0.559)           |
| ASC SQ * Trust CB          | -1.259***<br>(0.442) | -0.707<br>(0.657)                | -1.209*<br>(0.677)         | -0.883<br>(0.895)            |
| ASC SQ * Trust banks       | -0.668<br>(0.486)    | 0.018<br>(0.569)                 | -1.392***<br>(0.537)       | -0.578<br>(0.645)            |
| ASC SQ * Trust AK          | 0.573<br>(0.359)     | -0.392<br>(0.943)                | 1.415***<br>(0.515)        | -0.797<br>(0.512)            |
| ASC SQ * Risk high         | -3.653***<br>(0.503) | -3.947***<br>(0.761)             | -3.167***<br>(0.704)       | -5.240***<br>(0.857)         |
| ASC SQ * Non-acceptance    | -1.716***<br>(0.318) | -1.762***<br>(0.613)             | -1.817***<br>(0.432)       | -0.710<br>(0.530)            |
| Card                       | 0.894***<br>(0.112)  | 0.398*<br>(0.213)                | 1.158***<br>(0.172)        | 0.990***<br>(0.229)          |
| Also offline               | -2.274***<br>(0.305) | -3.151***<br>(0.929)             | -2.028***<br>(0.572)       | -1.377***<br>(0.465)         |
| Loss none                  | 1.200***<br>(0.045)  | 1.296***<br>(0.075)              | 1.091***<br>(0.072)        | 1.219***<br>(0.114)          |
| Loss limited               | 0.557***<br>(0.057)  | 0.623***<br>(0.084)              | 0.508***<br>(0.088)        | 0.578***<br>(0.157)          |
| Monthly savings            | -3.420***<br>(0.388) | -2.294***<br>(0.159)             | -3.418***<br>(0.475)       | -6.918***<br>(1.838)         |
| Privacy                    | -0.200*<br>(0.107)   | -0.261*<br>(0.155)               | 0.035<br>(0.149)           | -0.018<br>(0.197)            |
| Privacy x Monthly savings  | 0.056***<br>(0.014)  | 0.023<br>(0.019)                 | 0.035*<br>(0.020)          | 0.090***<br>(0.020)          |
| <u>SD</u>                  |                      |                                  |                            |                              |
| ASC Status quo             | -3.137***<br>(0.174) | -3.367***<br>(0.341)             | -2.993***<br>(0.306)       | -2.593***<br>(0.407)         |
| Privacy                    | -1.017***<br>(0.116) | -0.882***<br>(0.189)             | -0.875***<br>(0.197)       | -1.245***<br>(0.237)         |
| Card                       | 2.647***<br>(0.140)  | 2.923***<br>(0.233)              | 2.403***<br>(0.212)        | 2.387***<br>(0.279)          |
| Also offline               | -2.093***<br>(0.148) | -2.368***<br>(0.390)             | -1.701***<br>(0.316)       | -1.626***<br>(0.194)         |
| Loss none                  | 0.640***<br>(0.047)  | 0.703***<br>(0.057)              | 0.539***<br>(0.075)        | 0.702***<br>(0.189)          |
| Loss limited               | -0.325***<br>(0.068) | -0.276***<br>(0.085)             | -0.201*<br>(0.108)         | -0.395<br>(0.301)            |
| Monthly savings            | 1.729***<br>(0.237)  | 0.910***<br>(0.076)              | 1.731***<br>(0.247)        | 3.133***<br>(0.818)          |
| LogL                       | -7246.13             | -2914.99                         | -2799.50                   | -1383.79                     |
| N                          | 9940                 | 4050                             | 3780                       | 2020                         |
| Persons                    | 994                  | 405                              | 378                        | 202                          |

Note: The table shows results from mixed-logit models. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. Column 1 shows the full sample results. Column 2 shows the subsample of respondents who state no privacy concerns. Column 3 shows the subsample of respondents with some privacy concerns. Column 4 shows the subsample of respondents with strong privacy concerns. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. The point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the table shows the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.4: Heterogeneity: Results by Payment Behavior

|                         | All                  | Subsample<br>Predominantly cash | Subsample<br>Intermediate | Subsample<br>Predominantly non-cash |
|-------------------------|----------------------|---------------------------------|---------------------------|-------------------------------------|
|                         | (1)                  | (2)                             | (3)                       | (4)                                 |
| <u>Mean</u>             |                      |                                 |                           |                                     |
| ASC Status quo          | 4.915***<br>(1.390)  | 6.311***<br>(1.123)             | 6.036***<br>(1.002)       | 3.755***<br>(0.976)                 |
| ASC SQ * Age            | 0.060***<br>(0.008)  | 0.072***<br>(0.014)             | 0.025<br>(0.016)          | 0.078***<br>(0.016)                 |
| ASC SQ * Edu low        | 1.977***<br>(0.480)  | 0.991<br>(0.826)                | 1.322<br>(1.038)          | 2.637***<br>(0.800)                 |
| ASC SQ * Edu med        | 0.126<br>(0.329)     | 0.464<br>(0.644)                | -0.052<br>(0.469)         | -0.071<br>(0.548)                   |
| ASC SQ * Rural          | 0.382<br>(0.242)     | 1.362***<br>(0.447)             | -0.247<br>(0.441)         | -0.279<br>(0.531)                   |
| ASC SQ * Trust CB       | -1.431***<br>(0.464) | -2.750***<br>(0.667)            | -1.111<br>(0.857)         | -0.373<br>(0.979)                   |
| ASC SQ * Trust banks    | -0.660<br>(0.500)    | -0.584<br>(0.541)               | -0.393<br>(0.676)         | -1.044<br>(0.749)                   |
| ASC SQ * Trust AK       | 0.904<br>(0.849)     | -0.108<br>(0.680)               | 0.624<br>(0.496)          | 0.876*<br>(0.523)                   |
| ASC SQ * Risk high      | -3.903***<br>(0.426) | -5.158***<br>(0.578)            | -4.070***<br>(0.855)      | -1.906**<br>(0.763)                 |
| ASC SQ * Non-acceptance | -1.828***<br>(0.290) | -1.691***<br>(0.489)            | -2.286***<br>(0.499)      | -1.122**<br>(0.547)                 |
| Privacy                 | 0.132*<br>(0.070)    | 0.094<br>(0.103)                | 0.112<br>(0.143)          | 0.198<br>(0.120)                    |
| Card                    | 0.884***<br>(0.113)  | 1.266***<br>(0.187)             | 1.152***<br>(0.207)       | 0.177<br>(0.213)                    |
| Also offline            | -2.217***<br>(0.310) | -1.328***<br>(0.292)            | -2.322***<br>(0.660)      | -4.558**<br>(1.926)                 |
| Loss none               | 1.209***<br>(0.045)  | 1.151***<br>(0.073)             | 1.261***<br>(0.084)       | 1.228***<br>(0.078)                 |
| Loss limited            | 0.570***<br>(0.056)  | 0.564***<br>(0.080)             | 0.742***<br>(0.092)       | 0.419***<br>(0.116)                 |
| Monthly savings         | -2.654***<br>(0.134) | -2.906***<br>(0.200)            | -2.667***<br>(0.243)      | -2.299***<br>(0.156)                |
| <u>SD</u>               |                      |                                 |                           |                                     |
| ASC Status quo          | -3.171***<br>(0.177) | -3.329***<br>(0.318)            | -2.542***<br>(0.270)      | -3.307***<br>(0.360)                |
| Privacy                 | 1.015***<br>(0.110)  | 0.807***<br>(0.176)             | 0.992***<br>(0.231)       | 1.109***<br>(0.193)                 |
| Card                    | -2.627***<br>(0.142) | -2.487***<br>(0.213)            | -2.410***<br>(0.279)      | -2.671***<br>(0.266)                |
| Also offline            | -2.059***<br>(0.168) | -1.484***<br>(0.149)            | -2.248***<br>(0.321)      | -2.773***<br>(0.817)                |
| Loss none               | -0.650***<br>(0.041) | -0.674***<br>(0.101)            | -0.646***<br>(0.071)      | -0.623***<br>(0.060)                |
| Loss limited            | -0.338***<br>(0.065) | -0.222**<br>(0.101)             | 0.259***<br>(0.078)       | -0.514***<br>(0.136)                |
| Monthly savings         | 1.290***<br>(0.118)  | 0.924***<br>(0.075)             | 1.566***<br>(0.143)       | 1.091***<br>(0.082)                 |
| LogL                    | -7251.54             | -2670.88                        | -1742.87                  | -2754.26                            |
| N                       | 9940                 | 3870                            | 2360                      | 3710                                |
| Persons                 | 994                  | 387                             | 236                       | 371                                 |

Note: The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. Column 1 shows the full sample results. Column 2 shows the subsample of respondents who currently pay only cash or more cash than cashless. Column 3 shows the subsample of respondents with intermediate payment behavior, i.e., who pay “roughly the same amount in cash and cashless”. Column 4 shows the subsample of respondents who currently pay more cashless than cash or mainly cashless. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. The point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the table shows the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.5: Robustness: Accounting for Survey Satisfaction

|                          | (1)                  | (2)                  | (3)                  | (4)                  |
|--------------------------|----------------------|----------------------|----------------------|----------------------|
| <u>Mean</u>              |                      |                      |                      |                      |
| ASC Status quo           | 1.978***<br>(0.211)  | 2.188***<br>(0.305)  | 4.727***<br>(0.556)  | 4.132***<br>(0.726)  |
| ASC SQ * Diff to rank    |                      | -1.565***<br>(0.429) |                      | -0.912***<br>(0.269) |
| ASC SQ * Too many        |                      | 1.143***<br>(0.393)  |                      | 1.089***<br>(0.292)  |
| ASC SQ * Age             |                      |                      | 0.053***<br>(0.010)  | 0.048***<br>(0.008)  |
| ASC SQ * Edu low         |                      |                      | 1.263***<br>(0.432)  | 1.963***<br>(0.568)  |
| ASC SQ * Edu med         |                      |                      | -0.109<br>(0.329)    | 0.013<br>(0.263)     |
| ASC SQ * Rural           |                      |                      | 0.562<br>(0.346)     | 0.599**<br>(0.266)   |
| ASC SQ * Cash preference |                      |                      | 0.611*<br>(0.328)    | 0.847***<br>(0.303)  |
| ASC SQ * Trust CB        |                      |                      | -0.798*<br>(0.472)   | -1.094***<br>(0.351) |
| ASC SQ * Trust banks     |                      |                      | -0.933*<br>(0.498)   | -0.514*<br>(0.272)   |
| ASC SQ * Trust AK        |                      |                      | 0.417<br>(0.405)     | 0.574<br>(0.401)     |
| ASC SQ * Risk high       |                      |                      | -4.004***<br>(0.357) | -4.009***<br>(0.428) |
| ASC SQ * Non-acceptance  |                      |                      | -1.632***<br>(0.342) | -1.538***<br>(0.371) |
| Privacy                  | 0.114*<br>(0.065)    | 0.140**<br>(0.066)   | 0.121*<br>(0.068)    | 0.112<br>(0.068)     |
| Card                     | 0.850***<br>(0.113)  | 0.876***<br>(0.111)  | 0.835***<br>(0.119)  | 0.860***<br>(0.115)  |
| Also offline             | -2.177***<br>(0.330) | -2.414***<br>(0.394) | -2.229***<br>(0.414) | -2.522***<br>(0.365) |
| Loss none                | 1.167***<br>(0.046)  | 1.172***<br>(0.046)  | 1.197***<br>(0.046)  | 1.207***<br>(0.046)  |
| Loss limited             | 0.534***<br>(0.056)  | 0.533***<br>(0.056)  | 0.554***<br>(0.057)  | 0.562***<br>(0.056)  |
| Monthly savings          | -2.642***<br>(0.114) | -2.644***<br>(0.113) | -2.671***<br>(0.131) | -2.676***<br>(0.145) |
| <u>SD</u>                |                      |                      |                      |                      |
| ASC Status quo           | 4.110***<br>(0.191)  | 3.936***<br>(0.174)  | -3.051***<br>(0.152) | -3.057***<br>(0.175) |
| Privacy                  | 0.964***<br>(0.121)  | 0.901***<br>(0.129)  | 0.959***<br>(0.128)  | 1.005***<br>(0.126)  |
| Card                     | 2.496***<br>(0.137)  | 2.571***<br>(0.141)  | -2.577***<br>(0.143) | -2.654***<br>(0.149) |
| Also offline             | 1.921***<br>(0.167)  | 2.043***<br>(0.197)  | -1.998***<br>(0.162) | -2.088***<br>(0.163) |
| Loss none                | 0.669***<br>(0.034)  | 0.680***<br>(0.053)  | -0.650***<br>(0.036) | -0.637***<br>(0.044) |
| Loss limited             | 0.335***<br>(0.048)  | 0.342***<br>(0.056)  | -0.350***<br>(0.053) | -0.370***<br>(0.053) |
| Monthly savings          | 1.277***<br>(0.070)  | 1.255***<br>(0.064)  | 1.293***<br>(0.106)  | 1.267***<br>(0.144)  |
|                          | (0.067)              | (0.062)              | (0.078)              | (0.096)              |
| LogL                     | -7807.99             | -7746.72             | -7250.93             | -7196.84             |
| N                        | 10360                | 10310                | 9940                 | 9890                 |
| Persons                  | 1036                 | 1031                 | 994                  | 989                  |
| LogL                     | -7985.09             | -7925.05             | -7423.33             | -7371.96             |
| N                        | 10360                | 10310                | 9940                 | 9890                 |
| Persons                  | 1036                 | 1031                 | 994                  | 989                  |

Note: The table shows the baseline model (column 1) and the amended baseline model (column 3). In columns 2 and 4, we add survey satisfaction variables. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. The point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the table shows the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.6: Baseline Model: Accounting for Inattentive and Potentially Problematic Cases

|                       | Baseline             | w/o inconsistent<br>answers | w/o problematic<br>interviewers | w/o short duration<br>of experiment |
|-----------------------|----------------------|-----------------------------|---------------------------------|-------------------------------------|
|                       | (1)                  | (2)                         | (3)                             | (4)                                 |
| <u>Mean</u>           |                      |                             |                                 |                                     |
| ASC Status quo        | 2.188***<br>(0.305)  | 2.466***<br>(0.302)         | 1.630***<br>(0.296)             | 2.370***<br>(0.335)                 |
| ASC SQ * Diff to rank | -1.565***<br>(0.429) | -0.090<br>(0.333)           | -0.327<br>(0.504)               | -0.757<br>(0.554)                   |
| ASC SQ * Too many     | 1.143***<br>(0.393)  | 1.198***<br>(0.372)         | 1.727***<br>(0.390)             | 1.217**<br>(0.596)                  |
| Privacy               | 0.140**<br>(0.066)   | 0.174**<br>(0.072)          | 0.170**<br>(0.071)              | 0.215***<br>(0.073)                 |
| Card                  | 0.876***<br>(0.111)  | 1.041***<br>(0.132)         | 0.971***<br>(0.121)             | 0.911***<br>(0.120)                 |
| Also offline          | -2.414***<br>(0.394) | -2.114***<br>(0.337)        | -2.353***<br>(0.386)            | -2.357***<br>(0.385)                |
| Loss none             | 1.172***<br>(0.046)  | 1.078***<br>(0.050)         | 1.104***<br>(0.048)             | 1.058***<br>(0.049)                 |
| Loss limited          | 0.533***<br>(0.056)  | 0.434***<br>(0.074)         | 0.450***<br>(0.064)             | 0.440***<br>(0.069)                 |
| Monthly savings       | -2.644***<br>(0.113) | -2.540***<br>(0.117)        | -2.515***<br>(0.151)            | -2.462***<br>(0.125)                |
| <u>SD</u>             |                      |                             |                                 |                                     |
| ASC Status quo        | 3.936***<br>(0.174)  | 3.292***<br>(0.171)         | 3.545***<br>(0.227)             | 3.588***<br>(0.248)                 |
| Privacy               | 0.901***<br>(0.129)  | 1.045***<br>(0.135)         | 1.068***<br>(0.123)             | 1.013***<br>(0.125)                 |
| Card                  | 2.571***<br>(0.141)  | 2.592***<br>(0.139)         | 2.558***<br>(0.143)             | 2.526***<br>(0.136)                 |
| Also offline          | 2.043***<br>(0.197)  | 1.960***<br>(0.221)         | 1.891***<br>(0.196)             | 2.054***<br>(0.187)                 |
| Loss none             | 0.680***<br>(0.053)  | 0.634***<br>(0.039)         | 0.663***<br>(0.059)             | 0.644***<br>(0.045)                 |
| Loss limited          | 0.342***<br>(0.056)  | 0.327***<br>(0.104)         | 0.384***<br>(0.059)             | 0.396***<br>(0.076)                 |
| Monthly savings       | 1.255***<br>(0.064)  | 1.215***<br>(0.068)         | 1.248***<br>(0.232)             | 1.195***<br>(0.141)                 |
| LogL                  | -7746.72             | -6653.21                    | -6940.14                        | -6732.64                            |
| N                     | 10310                | 8480                        | 9000                            | 8680                                |
| Persons               | 1031                 | 848                         | 900                             | 868                                 |

Note: The table shows robustness analysis of the mixed-logit baseline model (Table 3), accounting for inattentive respondents and problematic cases. Column 1 corresponds to the baseline sample, including survey satisfaction controls. Columns 2 – 4 show results when potentially problematic cases are omitted. In column 2, we omit cases who always chose the digital euro but state that they dislike a digital euro. In column 3, we omit all cases with an interviewer who had a share of more than 90% of interviews with cases described for column 2 (persons who always chose the digital euro and who state that they dislike the digital euro). In column 4, we omit all respondents with an experiment duration of less than 1 minute. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. The point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the point estimates denote the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.

Table S.7: Baseline Model with Never taker and Defier

|                 | Baseline             | with Never taker     | with Defier 1        | with Defier 2        | with Defier 3        |
|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                 | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
| <u>Mean</u>     |                      |                      |                      |                      |                      |
| ASC Status quo  | 1.978***<br>(0.211)  | 2.568***<br>(0.257)  | 4.626***<br>(0.246)  | 4.615***<br>(0.268)  | 4.673***<br>(0.271)  |
| Privacy         | 0.114*<br>(0.065)    | 0.137**<br>(0.066)   | 0.126*<br>(0.065)    | 0.146**<br>(0.066)   | 0.150**<br>(0.066)   |
| Card            | 0.850***<br>(0.113)  | 0.898***<br>(0.116)  | 0.783***<br>(0.115)  | 0.796***<br>(0.121)  | 0.782***<br>(0.119)  |
| Also offline    | -2.177***<br>(0.330) | -2.553***<br>(0.379) | -2.681***<br>(0.290) | -2.618***<br>(0.277) | -3.242***<br>(0.461) |
| Loss none       | 1.167***<br>(0.046)  | 1.162***<br>(0.047)  | 1.126***<br>(0.045)  | 1.135***<br>(0.046)  | 1.131***<br>(0.045)  |
| Loss limited    | 0.534***<br>(0.056)  | 0.548***<br>(0.059)  | 0.570***<br>(0.055)  | 0.572***<br>(0.055)  | 0.566***<br>(0.055)  |
| Monthly savings | -2.642***<br>(0.114) | -2.696***<br>(0.125) | -2.677***<br>(0.112) | -2.684***<br>(0.114) | -2.690***<br>(0.114) |
| <u>SD</u>       |                      |                      |                      |                      |                      |
| ASC Status quo  | 4.110***<br>(0.191)  | 5.001***<br>(0.227)  | 7.134***<br>(0.328)  | 7.065***<br>(0.373)  | 7.100***<br>(0.396)  |
| Privacy         | 0.964***<br>(0.121)  | 1.006***<br>(0.124)  | 0.982***<br>(0.132)  | 0.974***<br>(0.138)  | 0.965***<br>(0.133)  |
| Card            | 2.496***<br>(0.137)  | 2.702***<br>(0.142)  | 2.830***<br>(0.170)  | 2.832***<br>(0.170)  | 2.826***<br>(0.160)  |
| Also offline    | 1.921***<br>(0.167)  | 2.218***<br>(0.175)  | 2.282***<br>(0.115)  | 2.260***<br>(0.120)  | 2.638***<br>(0.225)  |
| Loss none       | 0.669***<br>(0.034)  | 0.710***<br>(0.035)  | 0.676***<br>(0.032)  | 0.674***<br>(0.034)  | 0.678***<br>(0.033)  |
| Loss limited    | 0.335***<br>(0.048)  | 0.325***<br>(0.069)  | 0.286***<br>(0.068)  | 0.297***<br>(0.067)  | 0.300***<br>(0.065)  |
| Monthly savings | 1.277***<br>(0.070)  | 1.313***<br>(0.079)  | -1.262***<br>(0.051) | 1.260***<br>(0.066)  | 1.263***<br>(0.066)  |
| LogL            | -7807.99             | -8003.28             | -8453.02             | -8463.51             | -8463.04             |
| N               | 10360                | 11300                | 14210                | 14210                | 14210                |
| Persons         | 1036                 | 1130                 | 1421                 | 1421                 | 1421                 |

Note: The table shows results from mixed-logit models with different sample sizes. Column 1 corresponds to the baseline sample (see Table 3, excluding Never taker and Defier). In column 2, the sample contains also Never taker. In columns 3 – 5, the sample contains Never taker and Defier. For this sample, the attributes for Defier had to be randomly generated. Columns 3 – 5 show results for three such random draws. The dependent variable is Choice, which is one if a variant is chosen and 0 otherwise. “ASC Status quo” denotes the alternative-specific constant of the status quo (“opt-out”) option. The point estimates denote the mean and standard deviation of the chosen distribution. We assume a normal distribution for: ASC Status quo, Card, Privacy. We assume a lognormal distribution for: Also offline, Loss none, Loss limited, Monthly savings. For the lognormally distributed variables, the point estimates denote the mean and standard deviation of the logarithm of the coefficients. Standard errors adjusted for clustering at the person level are reported in parentheses. Variable definitions and summary statistics are presented in the Appendix. \*\*\*, \*\*, \* denote significance at the 0.01, 0.05 and 0.10-level.