The impact of PSD2 on the functioning of the retail payment market[*]

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Abstract
For central banks it is key to understand the possible impact of the revised Payment Services Directive (PSD2) on the functioning of retail payment markets. Our detailed study among a representative group of Dutch consumers sheds light on consumers' attitudes towards sharing their payments data with traditional and new payment service providers which offer new account information services or payment initiation services. Support for payments data usage is highest if the data user is one's own bank. Only a minority would give consent to the usage of payments data to make a financial overview with personalised offers. An explicit financial reward can tempt more people to use this service and to demand the service from a BigTech instead of one's own bank. Support for the usage of payments data by other banks and BigTechs to decide on loans also positively depends on financial incentives. Furthermore, the propensity of agreeing with payments data usage to use new services also positively depends on consumers' trust in the providers of these services.

1. Introduction

For central banks and other public authorities it is key to understand the consequences of a changing payment ecosystem. Within the European Union the revised Payment Services Directive (PSD2) entered into force on January 2016 and countries needed to transpose it in national law ultimately 13 January 2018. PSD2 updates and improves the 2007 initial PSD. The regulatory technical standards apply as of 14 September 2019. One of the goals of PSD2 is to enhance innovation, competition and efficiency in the European retail payments market. Due to PSD2 new payment service providers (PSPs) enter the retail payments market. They offer new kinds of payment services. With consumers' consent PSPs can get acces to consumers' payment accounts and their payment data. All providers of new payments services must have a license issued by a supervisory authority in the European Union. PSD2 regulates the supervison of third parties – payment initiation service providers and account information service providers –, who place themselves between a consumer and his/her bank such they can offer payment services.

We study to what extent banks – the traditional PSPs – will face increased competition from other banks and new non-bank PSPs. We examine to what degree consumers are interested in the adoption of two new payment services, i.e. account information services (AIS) and payment initation services (PIS). To illustrate, an example of an AIS is a financial overview of all your income and expenses with personalised budgeting advice. And an example of a PIS is a new quick payment method for person-to-person payments offered by a company that can issue a payment order to your bank on your behalf. Furthermore, we analyse, which payment service providers consumers prefer: their own bank, another bank or newcomers like technology companies.

We focus on the Netherlands, a country in which the impact of PSD2 on the retail payments market is potentially large. Dutch consumers pay most of their point-of-sale (POS) transactions electronically and shop a lot online, so their payment data are very informative and valuable. Therefore, we expect the entry of various new PSPs that offer new services. The first licences have already been granted. Second, it is a country with a highly concentrated banking sector. So the entry of newcomers has the potential to increase competition and thereby improve the services offered to consumers.

We research to what extent trust in banks and non-bank PSPs matters for AIS and PIS usage and the choice of PSP. We expect trust to be a crucial factor behind the possible success of AIS and PIS, and the degree to which the newcomers in the European retail payments market will be able to compete with incumbent parties. Only if consumers have trust in a PSP – be it their own bank, another bank, or a BigTech – they will give it permission to use the information on their payment account and to initiate payments on behalf of them.

In addition, we expect that people's consent with payments data usage also depends on financial incentives. We examine to what extent financial incentives provided by PSPs may influence

consumers' preferences. PSPs may try to persuade consumers to grant them to use their payment account by providing them financial incentives. So another interesting research question is: for how much money are consumers willing to give up their financial privacy? To be more specific, the paper addresses the following research questions:

1) *Are consumers willing to give consent to banks and licensed PSPs to use their payment account and payment data?*
2) *Are consumers willing to adopt the new PSD2 payments related services, and to what extent does the adoption intention depend on the type of PSP?*
3) *Does consumers' willingness to give banks and licensed PSPs access to their payment data depend on financial incentives?*
4) *Does consumers' willingness to give banks and licensed PSPs access to their payment data depend on trust in the PSP?*

In August 2019 we held a survey among 2,747 members of the CentERpanel, a representative panel of Dutch consumers in order to answer these research questions.[1] We assess their adoption intention of AIS and PIS offered by incumbents and non-bank newcomers in the retail payments market. We polled the respondents about their trust in banks and in these new PSPs and about their willingness to give them access to their payment account and payment data in exchange of a variety of AIS and PIS. We use vignette techniques[2] to elicit consumers' preferences and discrete regression analysis to anwer our research questions. In the vignettes we vary betweenthe PSPs that offer the service and the financial incentives. By introducing and varying financial conditions, we test whether the likelihood of using an AIS and of using other PSPs than one's own bank depends on financial incentives.

We contribute to several strands of literature. First, we contribute to research on the impact of PSD2 on the functioning of the retail payment market, which will start to evolve now that PSD2 has been implemented. We examine in detail to what extent consumers are willing to give consent to the usage of their payments data and their adoption intention of new payment related services that are introduced as part of PSD2. Thereby, we provide insight to what extent PSD2 may influence competition by examining the willingness of consumers to make use of other banks than their own bank and of newcomers. In that respect, we pay special attention to BigTechs, the role of trust and

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[1] The CentERpanel is an Internet-based survey among a representative sample of the Dutch-speaking population in the Netherlands. The CentERpanel exists since 1993 and has been widely used by both policymakers and researchers to study a broad range of topics. See https://www.centerdata.nl/en/publications.

[2] Vignette analysis is a survey method, in which respondents are randomly treated with hypothetical situations consisting of several core characteristics (types of services offered, type of PSPs and financial incdentives). As these characteristics are controlled within and between respondents, vignette analysis offers possibilities for the analysis of causal effects. Furthermore, it can be argued that vignettes allow for a more valid measurement of consumers' preferences or adoption intentions as compared to direct questioning, as they rely on more realistic scenarios, where respondents have to trade off different features of the vignettes simultaneously. Furthermore, the complexity of the evaluation process makes it harder to answer in socially desirable ways.

financial incentives. So, we also contribute to studies that examine to what extent BigTechs will impact the future of banks (e.g. Stulz 2019) Second, we contribute to the literature on the importance of trust in banks and technology companies, by showing the extent to which trust matters for the willingness to give consent to payments data usage and for the adoption intention of AIS and PIS. Third, we add to the privacy literature (see Acquisti et al. (2015) for an overview). More specifically, we contribute to research on consumers' atttitudes towards payments data usage (Athey et al. 2017; Van der Cruijsen 2019), which is an understudied topic. By examining the role of financial incentives, we also link to the studies on the relationship between financial rewards and privacy attitudes, which show that it is difficult to put a price on privacy (e.g. Acquisti et al. 2013). Fourth, our study adds to research on the link between financial incentives and the use of payment methods (e.g. Bolt et al, 2010; Borzekowski et al. 2008).

This paper is structured as follows. Section 2 describes the related literature, our contribution, research questions and hypotheses. Section 3 describes the set-up of the survey and discusses the vignets, while Section 4 presents the data. Section 5 describes our empirical approach and Section 6 discusses the results of the empirical analyses. We end with a discussion and conclusion in Section 7.

2. Related literature and our hypotheses

2.1 Literature review and our contribution

We contribute to various strands of literature. First, we add to the litearature on the changing payments landscape and the future of banks. As PSD2 has just been implemented, there are no studies yet on its impact. However, several studies discuss the potential impact of regulation, technological developments, FinTechs and BigTechs on the future of banks. For example, Stulz (2019) highlights that BigTechs have unique advantages that are difficult to replicate by banks and argues that banks are losing their comparative advantage as they have less access to unique information on parties that want to get a loan.

Second, we connect to a literature that studies the willing to pay of consumers for their privacy, in particular concerning payments data. In general, studies on the relationship between financial incentives and privacy have shown that it is hard to put a price on privacy (Acquisti et al. 2015). For example, people value it more when they have it, than when they actually have to pay for privacy (Acquisti et al., 2013). Regarding consumer behaviour in sharing information in a payments context, a particularly interesting study is the paper by Athey et al. (2017), who use data from a digital currency field experiment. They find that small changes in incentives, costs and information have a significant influence on data sharing. Van der Cruijsen and Van der Horst (2019) report that consumers find privacy an important payment instrument attribute. There aret relatively few studies

that focus specifically on financial data. Closest to our work is a recent study by Van der Cruijsen (2019) that examines consumers' attitudes towards payments data usage by presenting them with different situations and asking them for each situation to what extent the use of payments data is acceptable. She finds that attitudes depend on the purpose of the data use. For example, most people support payments data usage to enhance safety. In contrast, support for commercial usage of payments data is very low, especially when the user is another company than the consumers' own bank. Also relevant is a study by Bansal et al. (2016), who show that the extent to which an individual wants to reveal financial information to a finance website is positively related to the degree of trust in that website.

Third, by researching the role of trust in banks for the willingness to agree with payments data usage and the intention to adopt new services, we also contribute to literature on the importance of trust in banks and technology companies.

Last, our paper relates to a literature studying how consumers react to financial incentives intended to steer them away from or towards specific payment methods. Stavins (2018), using diary data for US consumers, finds that consumers are rather insensitive to financial incentives. According to Stavins, this explains the limited uptake of pricing tools by merchants. Ching and Hayashi (2010) also find that removing payment card rewards have limited effects on consumer choice of payment methods. Other papers find that financial incentives have a more pronounced influence choice of payment method. Using retailer data on the Netherlands, Bolt et al. (2010) show that surcharging consumers for debit card usage steers them away from debit cards towards cash. Surcharging can explain half of the observed difference in debit card payment shares across retailers. Using transaction data on Australia, Simon et al. (2010) find that a loyality program and an interest-free period increase credit card usage and decreases the use of other payment instruments at the point-of-sale. The substitution effect depends on the price incentive. Magnac (2017) finds that the introduction of foreign fees triggers strong behavioural responses from customers in contrast with the literature on the effect of rewards and means of payment that we review below. Borzekowski et al. (2008) study how increases in bank-imposed transaction fees affect in debit card use at the point of sale. They find a 12% decline in overall use in reaction to a mean 1.8% fee charged on certain debit card transactions. Using payment diary data from Austria, Canada, France, Germany, the Netherlands, and the United States Arango-Arango et al. (2018) show that cash usage depends on the perceived relative costs of cards and cash.

2.2. Research questions and hypotheses

Our first research question is*: 'Are consumers willing to give consent to banks and licensed PSPs to use their payment account and payment data?*' (Q1). According to another study with Dutch consumer data, many people feel uncomfortable with the use of their payments data, especially when the data

is used commercially by another company than one's own bank (Van der Cruijsen 2019). In line with these findings, we expect that the share of people that agree with data usage is higher in case the service provider is one's own bank than when it is another bank or a non-bank. We foresee that people will be more willing to give consent to their own bank than to other banks or to new PSPs because their payments data are already used by their own bank and because of the strong bank-customer relationship (Van der Cruijsen and Diepstraten 2017). Moreover, in general Dutch account holders turn out to be satisfied with the payment services of their bank (MOB 2016). If their own bank starts to offer AIS and PIS services and consumers are interested in these services, it may be most convenient for them to turn to their own bank than to another company, also because they trust their own bank more than banks in general (Van Esterik-Plasmeijer and Van Raaij 2014). In addition, non-banks are less experienced with the careful handling of payments data. As a result, people may be more hesitant to share their data with these companies. Last, non-banks may also more easily combine the payments data with other types of information such that people give up more privacy. Therefore, we also expect that people will be less willing to give consent to non-banks to use their payments data than to banks. Thus, the first three hypotheses are:

H1a: The likelihood of giving consent to use payments data is higher for one's own bank than for other banks.

H1b: The likelihood of giving consent to use payments data is higher for one's own bank than for non-bank PSPs.

H1c: The likelihood of giving consent to use payments data is higher for banks than for non-bank PSPs.

Relatedly, it is also relevant whether consumers intend to adopt the PSD2 related services, and if yes, which type of PSP they would prefer. The second research question is '*Are consumers willing to adopt the new PSD2 payments related services, and to what extent does the adoption intention depend on the type of PSP?*' (Q2).

PSD2 introduces two new types of payment related services and allows for the entrance of lincensed newcomers in the retail payments market. According to the literature, the propensity to adopt new payment related services may depend on several factors. First of all, demographic features of consumers, such as age, gender, educational level and income often play a role in the adoption of new products. According to the payments literature, being a male, young and having a high educational background and a high income increases the likelihood that someone adopts a payment innovation (e.g. Kosse 2014). Furthermore, the net transaction benefits associated with the service may be of importance. Right now, however, little is known about the precise features of the PSD2 services. It is therefore hard to already formulate expectations about their attractiveness to the public. It seems likely that context matters and the combination with other services. We proxy

context by presenting different payment situations for PIS. Regarding the combination with other services, we present AIS with different use cases: getting an financial overview or in combination with lending (a mortgage or a personal loan).

Also the learning cost of consumers is expected to influence their adoption decision. The easier a PSP it makes to adopt its (new) service, the lower consumer's learning costs and the more likely, (s)he adopts it from that particular PSP. Both consumers' own bank as well as some of the BigTechs may be in relative good position to achieve that. The own bank, because the consumer already makes use of its services and is used to the bank's digital environment. For BigTechs, the same may hold if consumers already make use of the other platform services of these BigTechs.

As discussed for Q1, the own bank may be in a relatively good position to offer these services, because they are experienced in treating confidential payment data and people already trust them to use this data. Therefore, we expect to find support for the following hypotheses on the adoption intentioins of PIS:

H2a: The adoption intention of PIS is higher for one's own bank than for other banks.
H2b: The adoption intention of PIS is higher for one's own bank than for non-banks.
H2c: The adoption intention of PIS is higher for other banks than for non-banks.

In a similar fashion, we expect the following to hold for AIS.

H3a: The adoption intention of AIS is higher for one's own bank than for other banks.
H3b: The adoption intention of AIS is higher for one's own bank than for non-banks.
H3c: The adoption intention of AIS is higher for other banks than for non-banks.

Third, we examine to what extent financial incentives can trigger the use of AIS and switch consumers' preferences from banks to non-banks. Our third research question (Q3) is *'Does consumers' willingness to give banks and licensed PSPs access to their payment data depend on financial incentives?'*.

PSPs who are offering PSD2 services to consumers may try to attract customers for their service by giving financial incentives. According to the literature, financial incentives make a service more attractive for consumers, and may lead to higher adoption rates (see Section 2.1). If different PSPs provide the same PSD2 related service, a financial incentive given by both of them may steer consumers who initially did not want to use the service yet, to their preferred PSP. If only one PSP gives an incentive, the adoption intention of two groups may be influenced. First, consumers who initially did not use the service yet, may start using the service provided by the PSP that gives the incentive. Second, consumers who already make use of the service provided by another PSP, may decide to switch PSP because of these financial benefits. As Dutch consumers are not used to pay for paying at the point-of-sale, we incorporate the financial incentives in the AIS. In line with the prior reasoning, we expect the following hypotheses to hold:

H4a: The adoption intention of AIS depends positively on the size of the financial incentive.

H4b: The adoption intention of AIS offered by another bank than one's own bank depends positively on the size of the financial incentive.

H4c: The adoption intention of AIS offered by non-banks depends positively on the size of the financial incentive.

Our last research question is '*Does consumers' willingness to give banks and licensed PSPs access to their payment data depend on trust in the PSP?' (Q4).* The amount of trust that people have in a PSP is likely to matter for the likelihood of giving consent for payments data usage. If people trust PSPs they are probably are more likely to agree with the usage of their payments data and to adopt AIS and PIS. Based on this reasoning we posit the following hypotheses:

H5a: The likelihood to give a PSP consent to use payments data positively relates to trust in the PSP.

H5b: The intention to adopt a PIS positively relates to trust in the PSP offering the PIS.

H5c: The intention to adopt an AIS positively relates to trust in the PSP offering the AIS.

3. Data

We designed a consumer survey to collect detailed data on consumers' attitudes towards the usage of their payments data. The survey was held in August 2019 among 3,330 members of the CentERpanel of 16 years of age and older. It was completed by 2,678 panel members, which implies a response rate of 80.4%. The CentERpanel is a representative internet panel of the Dutch-speaking population in the Netherlands and is managed by research institute CentERdata.[3] We have also used data on the panel members' demographics and household situation, which is captured by the annual DNB Household Survey (DHS). The DHS covers a wide range of topics and has been extensively used by researchers and policymakers.

The survey includes questions to measure trust in the different types of PSPs such that we can test the role of trust in PSPs. Furthermore, it includes questions on respondents' willingness to give consent to the use of their payment data. We distinguish between different types of PSPs. We also include questions which reflect consumers' adoption intentions of new PIS. We sketch three different sets of situations to test attitudes in case payments data are used to make it possible to pay more quickly and easily (1) for groceries at a supermarket, (2) among family and friends, and (3) at a webshop. In all three cases the sample is split in four random groups and people get one sketched situation with a question. These vary with respect to the supplier of the payment service. In the supermarket case, the supplier of the PIS is either one's own bank, another bank, a technology company or the supermarket. In case of person-to-person (P2P) payments it is one's own bank, another bank, a technology company or a social media company. In the sketched situation on online

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[3] For more information on the methodology see Teppa and Vis (2012).

shopping it is one's own bank, another bank, a technology company or a webshop. Respondents answer whether they would use these new PIS. Their answers range on a 1-5 scale from "definitely not"(1) to "definitely" (5).

Last, but not least, we study consumers' attitudes towards the usage of AIS by including vignettes. These vignettes help us to distill consumers' attitudes towards the usage of their payments data and to learn how these attitudes depend on the provider of the services (one's own bank or another provider) and financial incentives. First, we sketch the situation in which banks and large technology companies (Bigtechs) offer helpful financial overviews that provide insight in income and spending behaviour (Box 1). These companies use this information to send personal offers. The respondents get three different vignettes on the offering of a financial overview. First, everybody gets a vignette without any financial incentives and needs to choose between (1) a financial overview via one's own bank, (2) an overview via a technology company, and (3) no financial overview. The goal is to measure fundamental attitudes. Second, the sample is divided in four random groups. Each group gets a different vignette. These differ in the financial reward offered by both one's own bank and the technology company: EUR 5, EUR 10, EUR 25 or EUR 50 per month. This way we can test how people's willingness to share payments data depends on financial incentives. Third, the sample is again divided in four random groups to measure if a financial incentive can tempt someone into choosing for a technology company instead of one's own bank. Now the vignettes only vary with respect to the financial reward offered by the technology company (same amounts as before). What is steady over these last set of vignettes is that the own bank does not provide a financial reward.

We also test people's attitudes towards the usage of their payments data by their own bank, another bank or technology companies to decide on a mortgage loan (Appendix A, Vignette A.1) or a personal loan (Appendix A, Vignette A.2). Again, we examine the sensitivity of attitudes to financial incentives. With the consumer's permission, these providers can access and view the customer's payment data to determine whether (s)he qualifies for the loan and the rate of interest on the loan. The structure of these two sets of vignettes is the same. First, we measure the fundamental attitudes of the complete sample by sketching a situation in which all providers charge the same interest rate. Second, we make both the other bank and the technology company more attractive by lowering their interest rate, and the monthly amount to be paid. The sample is split in four different groups to test if the size of the financial incentive matters. Third, again using four random groups, we only make the technology company more attractive. To measure fundamental attitudes we use a interest rate of 2.8% in case of the mortgage loan and a rate of 10% in case of the personal loan. In the prior case the monthly mortgage repayment and interest payment amounts to EUR 1,232. In case of the personal loan the monthly payment is EUR 104.17 (repayment and interest). To measure the sensitivity to lower interest rates, and accompanying lower monthly payments, we use interest rates of 2.6%, 2.4%, 2.2% and 2.0% in case of the mortgage loan. The monthly payments in these cases are: EUR

1,200, EUR 1,168, EUR 1,136, and EUR 1,104. In case of the personal loan we use interest rates of 8.5%, 7%, 5.5% and 4% and the accompanying monthly amounts EUR 101.04, EUR 97.92, EUR 94.79, and EUR 91.67.

Box 1. Financial overview

Imagine banks and technology companies like Amazon, Apple, Facebook and Google offer a product that provides you with an overview of all your income and expenses. All the providers are licensed and supervised, and there is no difference in the quality of the products they offer.

The financial overview gives you an insight into the balance of all your accounts and your income and expenses. You can see exactly what you are spending your money on and get tips on how you can save money and increase your income. You can see this overview via an app or your computer.

If you want to receive this overview, you must first give permission to the provider of this product to analyse your payment account data. Your income and expenditure patterns will then be mapped out for you. In addition, the provider will send you personal offers based on this information.

What is your choice?

Choice 1	Choice 2	Choice 3
Financial overview from **the bank where you have your main payment account**. This is free.	Financial overview from a **technology company**. This is free.	No financial overview.

[4 random groups]
What is your choice now?

Choice 1 Financial overview from **the bank where you have your main payment account**. [*If arandom=1:* You receive € 5 per month. *If arandom=2:* You receive € 10 per month. *If arandom=3:* You receive € 25 per month. *If arandom=4:* You receive € 50 per month.]
Choice 2 Financial overview from **a technology company**. [*If arandom=1:* You receive € 5 per month. *If arandom=2:* You receive € 10 per month. *If arandom=3:* You receive € 25 per month. *If arandom=4:* You receive € 50 per month.]
Choice 3 No financial overview.

[4 random groups]
Lastly, what do you choose?

Choice 1 Financial overview from **the bank where you have your main payment account**. This is free. You do not receive any money.
Choice 2 Financial overview from **a technology company**. [*If brandom=1:* You receive € 5 per month. *If brandom=2:* You receive € 10 per month. *If brandom=3:* You receive € 25 per month. *If brandom=4:* You receive € 50 per month.]
Choice 3 No financial overview.

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4. Atitudes towards payments data usage: descriptive results

In this section we discuss the main descriptive results. The self-reported likelihood of giving permission to use payments data is the highest in case the data user is the bank of one's main payment account (Table 1). The average likelihood of doing so within the next twelve months is 29%. 46% of the respondents would definitely not give permission, whereas 13% would definitely give their permission. The average likelihood is about half as high in case the user is another own bank

Table 1. Likelihood of giving permission to use payments data

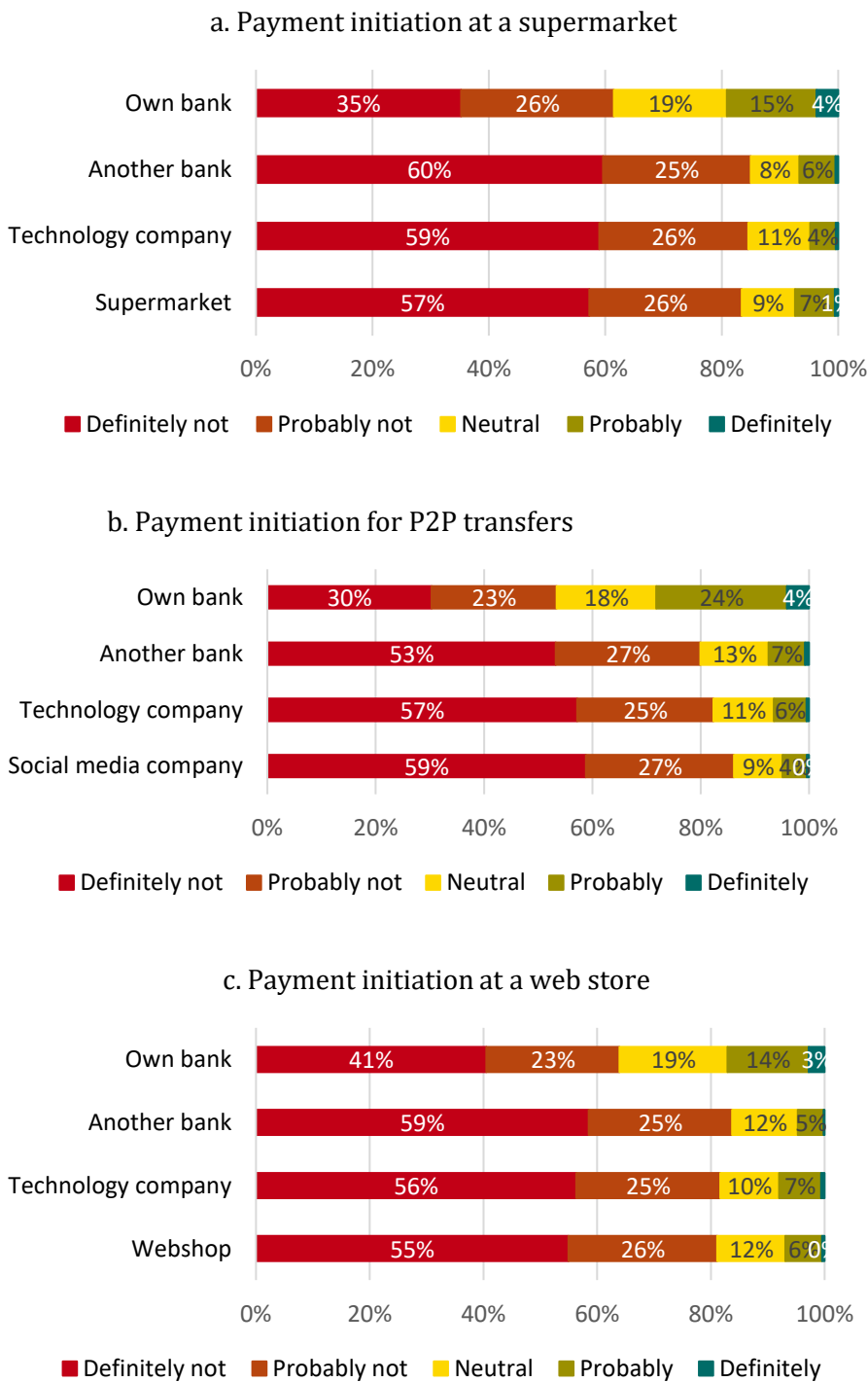|	Average likelihood	Share of respondents answering 0%	Share of respondents answering 100%	Number of observations
The bank where I have my main payment account	29%	46%	13%	2,683
My own other banks	14%	60%	4%	1,242
Banks of which I am not a customer	4%	81%	0%	2,683
A technology company such as Amazon, Apple, Facebook and Google	2%	86%	0%	2,683
A webshop	3%	85%	0%	2,682
A credit provider (not a bank)	2%	89%	1%	2,682
A mortgage lender (not a bank)	4%	84%	1%	2,682
A supermarket	3%	86%	1%	2,683

Source: CentERpanel, August 2019.
Note: The question was: "In the next 12 months, what is the likelihood that you will give permission to the parties listed below to use the details of your main payment account for the provision of services? Enter a percentage between 0 (0% = 'I will definitely not give permission') and 100 (100% = 'I will definitely give permission')."

and much lower in case the user is a bank of which one is not a customer, a technology company, a webshop, a credit provider (not a bank), a mortgage lender (not a bank), a financial adviser, or a supermarket. Noteworthy are the high shares of respondents indicating that they will certainly not agree with data usage by another company than their own bank. It ranges between 81% (the provider is another bank) to 89% (the provider is a non-bank credit provider). In these cases the share of respondents that would definitely share their payments data is only 1% or lower.

In case of PIS, we find that agreement with giving access to one's payment account is always highest when the user is one's own bank. At a supermarket almost 1 out of 5 respondents would probably or definitely agree with the initiation of the payment by the own bank (Figure 1a). This is 28% in case of the P2P payments (Figure 1a) and 17% in case of payments at a webshop (Figure 1c). Attitudes with respect to the other service providers do not differ much.

Most respondents (55%) would not give their consent for payments data usage for receiving a financial overview and personal offers, although financial incentives can trigger the provison of consent by a small but significant share of the respondents (Figure 2a). 44% would give consent to their own bank, but only 1% would agree with the data usage by a large technology company. If both suppliers of the service offer a financial reward, the share of respondents who give their consent is higher. If the reward is EUR 50, 51% would give consent to their own bank and 2% to a technology company. If only the technology company offers a financial reward, the share of respondents who would agree with data usage to get a financial overview and personal offers is higher than in the absence of financial incentives. The share of people who opt for the technology company instead of their own bank increases with the financial incentive. It is 14% if the financial incentive is EUR 50. Also noteworthy is that in case of large financial rewards (EUR 25 or EUR 50 a month), the share of people who would give their consent is lower than in case both type of suppliers offer a financial reward.

Figure 1. Consumers' consent for payment initiation such that one can use a new quick and easy payment method

a. Payment initiation at a supermarket

	Definitely not	Probably not	Neutral	Probably	Definitely
Own bank	35%	26%	19%	15%	4%
Another bank	60%	25%	8%	6%	
Technology company	59%	26%	11%	4%	
Supermarket	57%	26%	9%	7%	1%

■ Definitely not ■ Probably not ■ Neutral ■ Probably ■ Definitely

b. Payment initiation for P2P transfers

	Definitely not	Probably not	Neutral	Probably	Definitely
Own bank	30%	23%	18%	24%	4%
Another bank	53%	27%	13%	7%	
Technology company	57%	25%	11%	6%	
Social media company	59%	27%	9%	4%	0%

■ Definitely not ■ Probably not ■ Neutral ■ Probably ■ Definitely

c. Payment initiation at a web store

	Definitely not	Probably not	Neutral	Probably	Definitely
Own bank	41%	23%	19%	14%	3%
Another bank	59%	25%	12%	5%	
Technology company	56%	25%	10%	7%	
Webshop	55%	26%	12%	6%	0%

■ Definitely not ■ Probably not ■ Neutral ■ Probably ■ Definitely

Source: CentERpanel, August 2019.
Note: The figures show response shares. The number of respondents per vignette ranges between 644 and 710.

Figure 2. Consumers' consent for payments data usage and financial incentives

a. Financial overview

	No incentive		Monthly incentive by own bank and technology company				Monthly incentive by technology company		
No financial overview	55%	57%	52%	45%	47%	50%	54%	52%	50%
Technology company	1%	2%	2%	2%	2%	5%	6%	8%	14%
Own bank	44%	42%	47%	53%	51%	44%	40%	40%	36%

EUR 0 · EUR 5 · EUR 10 · EUR 25 · EUR 50 · EUR 5 · EUR 10 · EUR 25 · EUR 50

b. Mortgage loan

Monthly payment: EUR 1,232
Another bank: lower monthly payment — EUR 1,200, EUR 1,168, EUR 1,136, EUR 1,104
Technology company: lower monthly payment — EUR 1,200, EUR 1,168, EUR 1,136, EUR 1,104

c. Personal loan

Monthly payment is the same: EUR 104.17
Another bank: lower monthly payment — EUR 101.04, EUR 97.92, EUR 94.79, EUR 91.67
Technology company: lower monthly payment — EUR 101.04, EUR 97.92, EUR 94.79, EUR 91.67

Source: CentERpanel, August 2019.
Note: The figures show response shares. The number of respondents per vignette ranges between 622 and 2,717.

The own bank is the most popular provider of a mortgage loan (Figure 2b). If interest rates and monthly payments are the same, 93% would take out a mortgage from the own bank, 5% would select another bank and only 1% would choose a technology company. We observe a large shift in preferences in case the other bank offers lower interest rates than the own bank and technology companies (middle part of Figure 2b). In case the interest rate is 2% instead of 2.8% and the monthly payment is EUR 1,104 instead of EUR 1,232, more than half of the respondent would take out a mortgage from another bank than their own bank. For a technology company it is much harder to attract people by offering lower interest rates (right part of Figure 2b). In case of the strongest financial incentive (a monthly payment of EUR 128 less) 28% chooses the technology company. We see a similar pattern in case of the personal loan (Figure 2c).

5. Empirical methodology

We use several econometric choice models to answer the research questions and test the hypotheses as set out in Section 2.2.

5.1 Analysing willingness to give consent to use payments data using tobit regression analysis

In the first step, we assess the likelihood that consumers give permission to use their payments data in the upcoming 12 months. As we showed in the previous section the question is asked for different types of PSP separately. This makes it possible to assess to what extent people's preferences differ per PSP and allows for variation in the estimated coefficients per type of PSP.

The dependent variables Willingess to agree with payment data usage by PSP$_k$ y_{ik} are the reported probabilities of agreeing with payments data usage by PSP type k, expressed as percentages ranging between 0 ('I will definitely not give permission') and 100 ('I will definitely give permission'). As discussed in Section 5, many respondents are absolutely sure that they will not give permission to use their payments data. In case of the own bank, the share of responses answering 100% is also relatively high. Due to the large share of answers at the lower bound and in case of the own bank also the upper bound, we use two limit Tobit regression models instead of OLS regression for our estimations. The econometric model is as follows:

$$y_{ik}^* = \beta_k' x_{ik} + \varepsilon_{ik} \tag{1}$$

where y_{ik}^* is the unobserved willingness of respondent i to share his/her payments data during the upcoming 12 months with PSP k (k = 1..6), x_{ik} is a vector with explanatory variables for respondent i and his/her willingness to share payments data with PSP k and ε_{ik} is from the normal distribution with mean zero and variance σ_k^2 . The observed willingness y_{ik} is related to latent willingness y_{ik}^* :

$$y_{ik} = 0 \ \text{if } y_{ik}^* \leq 0 \tag{2}$$

$$= y_{ik}^* \ \text{if } 0 < y_{ik}^*, < 100$$

$$= 100 \text{ if } y_{ik}^* \geq 100$$

The likelihood function of the two-limit Tobit model that is used to estimate β_k and σ_k is as follows:

$$L = \prod_{y_{ik}=0} \Phi\left(-\frac{\beta_k' x_{ik}}{\sigma_k}\right) \prod_{y_{ik}=y_{ik}^*} \frac{1}{\sigma_k} \varphi\left(\frac{(y_{ik}-\beta_k' x_{ik})}{\sigma_k}\right) \prod_{y_{ik}=100} 1 - \Phi\left(-\frac{(100-\beta_k' x_{ik})}{\sigma_k}\right) \qquad (3)$$

Tobit regression models take censoring of the dependent variable into account, while OLS regression does not. Consequently, the marginal effects are smaller than the estimated coefficients. More detailed information about two-limit Tobit models ification can be found in Maddala (1983) and Cameron and Trivedi (2010).

Two trust variables are included as key explanatory variables. First, we include a measure of generalized trust. It is a dummy called *trust in other people*, which equals 1 if the respondent thinks that in general other people can be trusted, and zero otherwise. Second, we include a variable *trust in <name PSP j>* which reflects how much trust a respondent has in PSP j. These trust variables range from 1 (very little trust) to 5 (very much trust). [4]

We also include a broad range of variables to control for differences in personal characteristics as they may influence respondent's willignes to give consent to payments data usage. To control for differences in how much people know from PSD2 we include a dummy *high knowledge PSD2* that is 1 for respondents who say of themselves that they are (very) familiar with PSD2 and and 0 for respondents who have never heard of PSD2 or who don't know what it is about. To control for gender we include the dummy *male* that is 1 for males and 0 for females. We capture the age of the respondents by including four age dummies: *between 35 and 44, between 45 and 54, between 55 and 64, 65 and over*. For example, *65 and over* is 1 for respondents aged 65 or above and 0 for younger respondents. The reference category includes respondents of 34 years and below. The level of education is controlled for by including the variable *education: bachelor or higher*. This dummy variable is 1 for respondents who successfully completed higher vocational or university education and 0 for lower-educated respondents. We control for differences in the household net monthly income by including three variables: *income: EUR 1151-1800, income: EUR 1801-2600, income: > EUR 2600*. These dummies are 1 for respondents with the particular income and 0 for other respondents. Respondents with the lowest income (EUR 1150 or below) are in the reference category. *Homeowner*

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[4] Annex C.1 includes ordered probit estimates on how much trust respondents have in their own most important bank, their other banks, other banks than their own banks, BigTechs, online stores and supermarkets. It turns out that people who believe that in general most people can be trusted, also have a relatively high trust in all mentioned PSPs. The estimated coefficients are all positive and significant. Regarding marginal effects, having high trust in others goes together with a 4.7 percentage point (pp) higher probability that one trusts one's own bank very much, and with a 0.6 pp lower probability that one has very little trust in it. Having high trust in others goes together with a 14.4 pp lower probability that one has very little trust in BigTechs and a 0.2 pp higher probability that one trust BigTechs very much. We also find that age correlates negatively with trust in other banks, BigTechs, online stores and supermarkets. For instance, people aged 65 and older have a 16.9 pp higher probability to have very little trust in BigTechs than people aged 34 and younger. They also have a 4.8 pp higher probability to have very little trust in other banks than their own and a 1.1 pp lower probability to trust them very much. Furthermore, income correlates positively with one's trust in other banks than their own. Other factors that correlate significantly with trust with one or two types of PSPs are the degree of urbanisation of one's residence, living in the south or north of the Netherlands, gender and being a homeowner.

is 1 for homeowners and 0 else and is included as a proxy for wealth. In addition, *degree of urbanisation* captures the address density of the respondent's residence and ranges from 1 (500 adresses per km^2 or less) to 5 (more than 2,500 adresses per km^2). Last, we control for the region people live in by including the dummies *region: north*, *region: east*, *region: south*. The reference group consists of respondents who live in the west of the country. For more details on the descriptives of all model variables, see Table B.1 of Appendix B.

5.2 *Analysing adoption intention payment initiation services using ordered probit analysis*

The second step of our analysis concerns assessing the intention of respondents to adopt PIS from different PSPs. We examine three different payment situations, i.e. paying in a supermarket, making P2P payments among family and friends and paying in online stores. For each payment situation, respondents were asked to indicate their adoption intention for PIS. The PSP offering the service differed per respondent. As we mentioned before, for each of the three payment situations, respondents were randomly assigned to one of four groups, which only differed in the type of PSP that offered the payment initiation service. The random assignment of the PSPs provides insight in to what extent respondents' adoption intention of the new PIS differs per PSP offering the service.

For each of the three payment situations, we use ordered probit regression analysis to examine which explanatory variables influence adoption intention of PIS. In an ordered probit model the dependent variable can take on a limited number of values which have a natural ordering. In our situation, there is a latent adoption intention I_i^* and an observed choice I_i, which acts as the dependent variable. I_i can take on five values, i.e 1 if respondent i would definitely not make use of the payment initiation service , 2 if respondent i would probably not make use of it, 3 if (s)he takes a neutral standpoint, 4 if (s)he would probably make use of it and 5 if the respondent would definitely make use of it. The variables explaining individual *i*'s adoption intention are stored in vector x_i. It is assumed that the unobserved evaluation I_i^* is defined by the following relationship:

$$I_i^* = \beta' x_i - \epsilon_i \tag{4}$$

We assume that the error terms ε_i 's are independently distributed across individuals *i*=1 ...N and follow a standard normal distribution, with mean 0 and variance 1. Although we do not observe I_i^* we do observe I_i :

$$I_i = 1 \text{ if} \qquad I_{ik}{}^* <= \alpha_1 \tag{5}$$

$I_i = j$ if $\qquad \alpha_{j-1} < I_{ik}{}^* <= \alpha_j$ for j=2, 3 or 4

$I_i = 5$ if $\qquad I_i{}^* > \alpha_4$

The parameters α_t are unknown and need to be estimated together with β. The probability that individual *i* has adoption intention j (j=1, 2, 3, 4 or 5) is given by:

$$Prob(I_i = 1) = \Phi(\alpha_1 - \beta' x_i) \tag{6}$$

$Prob(I_i = j) = \Phi(\alpha_j - \beta' x_i) - \Phi(\alpha_{j-1} - \beta' x_i)$ for j =2, 3 or 4

$$Prob(I_i = 5) = 1 - \Phi(\alpha_4 - \beta' x_i)$$

This model is called the ordered probit model, with Φ denoting the standard normal distribution. The parameters are estimated using the maximum likelihood (ML) method. The log likelihood function which we maximise is:

$$lnL = \sum_{i=1}^{n} \sum_{j=1}^{5} \left[I(I_i = j) ln \left(Prob((I_i = j)) \right) \right] \tag{7}$$

For each of the three payment situations, we estimate a separate ordered probit model. For more information about ordered probit models, see e.g. Greene (2010).

We include the same set of demographic control varables as discussed in Section 5.1. Two sets of explanatory variables are of special importance. The first set concerns dummies which identify which PSPs were randomly assigned to the respondents, and which were not (omitted dummy: *one's most important bank*): *another bank*, *a BigTech*, *a supermarket*, *a social media company*, *an online store*. The estimated coefficients for the PSP dummies reflect to what extent people are more or less willing to adopt the PIS from a particular PSP relative to adopting it from one's most important bank.

The second set of variables concern trust. The variable *trust in other people* is included as a measure of generalized trust. In addition, we include a measure *difference in trust: <name PSP j>* which reflects the absolute difference between the respondent's degree of trust in the randomly assigned PSP and the trust in the respondent's most important bank. These variables range between -4 (trust in the randomly assigned PSP is very low (1) and in one's most important bank is very high (5)) and 4 (trust in the randomly assigned PSP is very high (5) and in one's most important bank is very low (1)).

5.3 Analysing adoption intention of account information services using alternative specific conditional logit analysis

In the third step, we use alternative specific conditional (ASC) logit models to assess which factors influence respondents' choice *W* for different PSPs that want to have permission to access one's payment data to offer them AIS. In this step, we also measure the price sensitivity of respondents. To what extent will they become more willing to adopt the AIS if the PSP gives a financial incentive?

As mentioned in Section 5, we analyse preferences in case of 1) a financial overview of one's income and expenses, 2) a mortgage loan of EUR 300,000 that has to be repaid within 30 years against a fixed interest rate, and 3) a personal loan of EUR 5,000 that has to be repaid within 5 years against a fixed interest rate. Per product and per round (three for each product), the dependent variable reflects the respondent's choice.

ASC logit models belong to the group of discrete choice models in which the dependent variable, say W, can be one of several mutually exclusive alternatives (or vignettes in our case). The ordering of these alternatives does not have any meaning. Respondent i (i=1 ...N) chooses the

vignette m that provides him/her the highest utility U_{im}, (m=1..3) among the available three vignettes. The utility U_{im} is assumed to be the sum of a deterministic part V_{im} and an unobserved random component ε_{im}. We observe that respondent i chooses vignette k, W_i=k, if vignette k provides him/her with the highest utility of the available vignettes:

$$Pr(W_i = m) = Pr(U_{im} \geq U_{ik}) = Pr(\varepsilon_{ik} - \varepsilon_{im} \leq V_{im} - V_{ik}) \quad \text{for all available vignettes k.} \qquad (8)$$

We assume that the random components ε_{i1}, ε_{i2} and ε_{i3} follow the logistic distribution, and we specify the deterministic part V_{ik} as follows:

$$V_{ik} = \beta' x_{ik} + \gamma'_m z_i \qquad (9)$$

where x_{ik} is the vector with vignette-specific explanatory variables, in our study the vignette specific financial incentives, and z_i is the vector with the respondent specific explanatory variables, including the trust in the different PSPs. Since the outcome variables are assumed to depend on the difference between the random components, two of these random components can vary, and also only two of the estimated vectors γ_l are free to vary. For one of the alternatives (the base alternative), the estimated coefficients are set to zero in order to ensure identification. According to the ASC logit model the probability p_{im} that respondent i chooses vignette m is as follows:

$$p_{im} = \frac{e^{\beta' x_{ik}+\gamma'_m z_i}}{\sum_{l=1}^{3} e^{\beta' x_{il}+\gamma'_l z_i}} \qquad (10)$$

The density function f for respondent i is as follows $f(W_i) = \prod_{l=1}^{3} p_{il}^{w_{il}}$ where w_{il} denotes a dummy equal to 1 of respondent i chooses vignette l, and zero otherwise. The log likelihood to be maximised to estimate the coefficients β and γ_l is:

$$Ln\ L(\beta, \gamma_l) = \sum_{i=1}^{N} \sum_{l=1}^{3} w_{il}\ ln(p_{il}) \qquad (11)$$

The interpretation of the coefficients differs per type of explanatory variable. The coefficients stored in γ_l are interpreted in the same way as coefficients in multinomial logit models, i.e. against the base category. The impact of a change in vignette specific covariate x_m on the probability p_{im} that respondent i chooses vignette m is fairly straightforward:

$$\frac{\partial p_{ij}}{\partial x_{im}} = p_{im}(1 - p_{im})\beta \quad \text{if j=m} \qquad (12)$$
$$= -p_{ij}(1 - p_{im})\beta \quad \text{if j≠ m}$$

If the estimated coefficient β is positive then the impact of an increase in x_{im} on the probability that respondent i chooses vignette m is positive (positive own-effect), and on the probability that (s)he chooses another vignette j is negative (negative cross-effect). For more detailed information on ASC logit models, see e.g. Cameron and Trivedi (2010).

We treat the variables reflecting financial incentives as alternative specific covariates in our model, while we include respondents' trust in the different PSPs and demographic controls in the set of respondent specific covariates. For the first AI-service, a financial overview, the incentive is given in

the form of a monthly reward paid by the PSP, ranging between EUR 5 and EUR 50. In case of the mortgage loan and personal loan, the incentive is reflected in a lower monthly payment to the PSP, see section 3 for a detailed description of the vignettes. Next to the standard demographic explanatory variables we include *trust in other people* as explanatory variable to control for generalized trust and one or two trust variables which reflect the *difference in trust* between the other PSPs and one's most important bank to assess the impact of difference in trust on respondents' preferences for the different vignettes.

6. Estimation results

6.1 Willingness to give consent to use payment data

The estimation results show that consumers' willingness to share their payments data with both banks and non-banks in exchange for a banking service depends on trust (see Table 2). For all types of PSPs the results show that the stronger their degree of trust in these specific PSPs, the higher their willingness to share payments data with them. So we find support for H5a. The impact of trust differs between PSPs. It is lowest for other banks where consumers don't have an account and highest for the banks where they do have an account (both their most important bank as well as their other banks). A one-point increase in trust in other banks increases the propensity to agree with payments data usage by them by 2.1 percentage points (pp), while it rises by 3.6 pp for their own banks.[5] The marginal effects of a 1 point increase in trust for online stores is 2.6 pp, for supermarkets it is 2.8 pp and for BigTechs it is 2.9 pp. Furthermore, we find that people who in general trust other people are 1.3 pp more likely to share their payments data with other banks than their own and 0.8 pp more likely to agree with the usag by BigTechs than people who distrust others.

Furthermore, we find that people who are knowledgeable about PSD2 tend to be less likely to give their consent than other people. They are 2.5 pp less likey to agree with payments data usage by their own most important bank, 1.9 pp less likely give consent to other banks, and 1.3 pp less likely to agree with the usage by supermarkets.

With respect to demographic factors, we find that both gender and age matter. In all cases, males are more willing to agree with the usage of their payments data than females. The estimated marginal effects range between +0.9 pp in case of the usage by online stores to +3.6 pp in case of the usage by one of their other banks. Regarding age, we find the older people are, the lower their expessed willingness to agree with payments data usage by any of the PSPs. The age effects are especially large in case of data usage by the own bank. People below the age of 34 are relatively open to share payments data with other banks than their own and with new comers like BigTechs and online stores. People below the age of 45 are relatively willing to agree with payments data usage by their own banks compared to elderly. We find no or mixed results for education, income, being a

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[5] Marginal effects are available upon request.

Table 2. Tobit coefficients for willingness to share payment data with PSPs

	Own most important bank	Other own bank	Other banks	BigTechs	Online stores	Super-markets
Trust in other people	0.475	5.112	6.679*	4.655*	3.859	4.789
	(3.634)	(4.001)	(2.602)	(2.288)	(2.583)	(3.120)
Trust in one's most important bank	26.29***					
	(2.559)					
Trust in another own bank		17.15***				
		(3.054)				
Trust in other banks			11.18***			
			(1.914)			
Trust inBigTechs				17.26***		
				(1.897)		
Trust in online stores					14.93***	
					(1.912)	
Trust in supermarkets						17.27***
						(2.428)
High knowledge PSD2	-18.00***	-9.230*	-1.629	-0.766	-4.433	-7.878*
	(4.065)	(4.286)	(2.999)	(2.580)	(3.069)	(3.699)
Male	8.039*	16.88***	6.790**	8.385***	5.029*	10.00***
	(3.137)	(3.661)	(2.319)	(2.152)	(2.376)	(2.945)
Between 35 and 44	-10.10	-14.06	-13.12**	-9.732**	-8.145*	-7.196
	(5.991)	(7.392)	(3.985)	(3.224)	(3.836)	(4.896)
Between 45 and 54	-25.45***	-32.55***	-14.83***	-13.19***	-15.82***	-12.17**
	(5.652)	(7.449)	(3.787)	(3.299)	(3.866)	(4.478)
Between 55 and 64	-34.20***	-34.92***	-25.58***	-23.45***	-26.80***	-22.46***
	(5.625)	(7.337)	(3.946)	(3.586)	(4.136)	(4.880)
65 and over	-41.86***	-50.65***	-31.91***	-29.10***	-30.55***	-27.96***
	(5.384)	(7.087)	(3.793)	(3.429)	(3.875)	(4.471)
Education: bachelor or higher	-8.127*	-1.577	0.773	2. 153	-2.985	0.823
	(3.695)	(3.841)	(2.577)	(2.188)	(2.580)	(3.022)
Income: EUR 1151-1800	11.67	11.32	5.562	10.31*	4.557	8.740
	(7.606)	(9.610)	(5.042)	(4.353)	(5.036)	(6.134)
Income: EUR 1801-2600	10.43	3.873	-3.549	0.934	-3.606	-3.782
	(6.941)	(8.871)	(4.712)	(4.144)	(4.599)	(5.452)
Income: more than EUR 2600	13.35*	2.312	0.431	3.150	-0.236	3.277
	(6.719)	(8.591)	(4.378)	(4.007)	(4.456)	(5.336)
Homeowner	-5.830	2.225	-1.735	-0.768	-4.073	-7. 323
	(4.484)	(5.535)	(3.307)	(2.914)	(3.297)	(3.992)
Degree of urbanisation	2.846	-0.134	1.931	2.885**	1.992	3.009*
	(1.534)	(1.593)	(1.035)	(0.905)	(1.048)	(1.246)
Region north	1.740	-11.67	4.398	3.726	0.130	3.330
	(6.129)	(6.725)	(4.225)	(3.798)	(4.194)	(5.143)
Region east	-1.757	-5.902	-0.740	-2.279	0.430	-1.544
	(4.858)	(5.341)	(3.361)	(2.922)	(3.381)	(3.895)
Region south	-3.247	-7.530	-4.136	-5.983*	-4.981	-9.089*
	(4.716)	(4.722)	(3.342)	(2.890)	(3.342)	(4.172)
Constant	-69.31***	-47.81**	-61.94***	-73.34***	-64.63***	-92.14***
	(13.22)	(15.24)	(9.119)	(8.524)	(8.614)	(11.59)
Observations	2627	1221	2627	2627	2627	2627
Uncensored	1071	443	482	360	384	361
Left-censored	1221	731	2135	2258	2232	2249
Right-censored	335	47	10	9	11	17
Pseudo R^2	0.02	0.03	0.03	0.07	0.05	0.04
Log Likelihood	-7345.3	-2844.8	-3174.6	-2303.4	-2548.5	-2502.4

Note: The table reports parameter estimates for Tobit regressions. The dependent variable is respondents' willingness to agree with payments data usage by six different PSPs. The outcomes differ per PSP and range between 0% to 100%. Clustered standard errors at household level are in parentheses. * $p<0.05$, ** $p<0.01$, *** $p<0.001$

homeowner, degree of urbanisation and region. These variables are statistically significant for two or less of the six PSPs.

Overall, the outcomes are in line with Van der Cruijsen (2019) who examines people's willingness to share payments with with non-banks in order to use a payments app or to get a financial overview. She also finds significant effects for having trust in most other people, gender and age, and no or hardly effects for education, region and urbaniation degree. However, she does find a positive effect for income, which we do not find.

6.2 Payment initation services (PIS)

We study consumers' intention to adopt PIS in three different payment situations, i.e. in supermarkets, for P2P transfers among family and friends and in online stores. For each of the three payment situation, we randomly assigned respondents to one type of PSP to examine to what extent adoption intention of PI-services depends on what type of PSPs is offering it. For each payment situation the following types of PSPs are included: consumers' own most important bank, other banks than consumers' own bank(s), a BigTech company and the service provider of the payment situation itself, i.e. the supermarket, the social media company and the online store. We include both dummy variables and the difference in trust variables to assess the impact of the type of PSP offering the PIS on adoption intention. The omitted variable is consumers' own most important bank (benchmark).

Table 3 presents the ordered probit estimation results. For each payment situation, respondents who are assigned to one of the PSPs other than their own most important bank, report a significantly lower intention to adopt PIS than respondents who are assigned to their most important bank. So we find support for H2a and H2b .Furthermore, the adoption intention seems higher among people to whom the PIS would be offered by a BigTech than among those to whom it would be offered by another bank than their own or by the company that runs the payment location. However, according to Wald tests, which we use for testing the null hypothesis of equal coefficients for the different PSPs, this is only the case for PIS in supermarkets (see Table 4 with the test results under the 'dummy' columns). For P2P payments, neither of the tests rejects the null hypothesis of equal coefficents, i.e. indicating no difference in adoption intention between respondents who would be offered PIS by either another bank than their own, a BigTech or a social media company. For PIS in online stores, the adoption intention is significantly higher when offered by a BigTech company or the online store than when offered by another bank than their own, but there is no difference between the BigTech and the social media company. To sum, we reject H2c (the adoption intention of PIS is higher for other banks than for non-banks).

Table 3. Ordered probt results adoption intention payment initation services

	1: Supermarket	2: P2P payments	3: Online store
(Benchmark: the respondent's own most important bank)			
Another bank	-0.626***	-0.667***	-0.538***
	(0.070)	(0.077)	(0.077)
A BigTech	-0.304**	-0.567***	-0.216*
	(0.097)	(0.102)	(0.100)
A supermarket	-0.521***		
	(0.075)		
A social media company		-0.647***	
		(0.098)	
An online store			-0.344***
			(0.081)
Trust in other people	0.260***	0.249***	0.226***
	(0.048)	(0.048)	(0.047)
Difference in trust: another bank	0.107	0.067	-0.008
	(0.056)	(0.065)	(0.057)
Difference in trust: a BigTech	0.281***	0.209***	0.192***
	(0.052)	(0.055)	(0.052)
Difference in trust: a supermarket	0.113*		
	(0.050)		
Difference in trust: a social media company		0.186***	
		(0.051)	
Difference in trust: an online store			0.111*
			(0.050)
High knowledge PSD2	-0.141*	-0.201***	-0.169**
	(0.060)	(0.060)	(0.063)
Male	0.229***	0.160***	0.178***
	(0.046)	(0.045)	(0.046)
Between 35 and 44	-0.232**	-0.289***	-0.110
	(0.080)	(0.082)	(0.080)
Between 45 and 54	-0.505***	-0.621***	-0.429***
	(0.079)	(0.079)	(0.079)
Between 55 and 64	-0.645***	-0.777***	-0.666***
	(0.077)	(0.080)	(0.079)
65 and over	-0.750***	-1.030***	-0.955***
	(0.072)	(0.075)	(0.074)
Education: bachelor or higher	-0.025	-0.023	0.034
	(0.051)	(0.050)	(0.050)
Homeowner	-0.016	0.035	-0.047
	(0.061)	(0.060)	(0.060)
Degree of urbanisation	0.021	0.041*	0.050*
	(0.020)	(0.020)	(0.020)
Income: EUR 1151-1800	0.139	0.079	0.121
	(0.104)	(0.102)	(0.104)
Income: EUR 1801-2600	0.022	0.060	0.128
	(0.095)	(0.093)	(0.044)
Income: more than EUR 2600	0.163	0.098	0.176
	(0.093)	(0.090)	(0.092)
Region north	0.024	0.015	0.114
	(0.081)	(0.081)	(0.083)
Region east	-0.113	-0.105	-0.101
	(0.065)	(0.064)	(0.063)
Region south	-0.064	-0.055	-0.099
	(0.062)	(0.061)	(0.062)
Observations	2627	2627	2627
Pseudo R²	0.07	0.10	0.07
F	0.00	0.00	0.00
Log likelihood	-2930.4	-2970.7	-2916.2

Note: The table reports parameter estimates for ordered probit regressions. The dependent variable is respondent's intention to adopt PIS in three different payment situations, i.e. for paying in supermarkets, in online stores and for P2P payments among family and friends. The dependent variable ranges from 1 (absolutely sure of not going to adopt PIS) to 5 (absolutely sure of adopting PIS). Separate regressions have been estimated for the three payment situations. Clustered standard errors at household level are in parentheses. Marginal effects are available upon request . * p<0.05, ** p<0.01, *** p<0.001

To illustrate the difference in adoption intention between the PSPs, we briefly discuss the estimated marginal effects for adoption intention of PIS in supermarkets. When the service would be offered by another bank than one's own bank, the propensity that someone would certainly not adopt PIS would rise by 22.4 pp and that (s)he would certainly adopt it would drop by 1.9 pp. If the service would be offered by a BigTech instead of by one's own bank, the propensity that it would certainly not be adopted would increase by 10.9 pp and that (s)he would certainly adopt it would decline with 0.9 pp. Lastly, when the supermarket itself would offer PI instead of one's own bank, the propensity that it would certainly not be adopted would rise by 18.6 pp, while the propensity that it would certainly be adopted would drop with 1.6 pp.

Differences in trust between a PSP and one's own bank also matter for consumers' expressed adoption intention, except when the other PSP is another bank than one's own bank. Then a difference in trust does not influence the adoption intention. For the other PSPs, we find that the higher trust in a particular PSP compared to trust in one's own bank, the higher the adoption intention. This result suggests that if non-bank PSPs would gain in trust among consumers (or if they would lose trust in their own bank) the propensity that they would make use of their PIS instead of those offered by their own bank, would rise. The estimation results indicate that this effect is relatively larger for BigTech companies in the supermarket case than for the other PSPs, and for BigTechs compared to other banks for PIS in online stores (see Table 4, columns "Supermarket – Difference in trust" and "Online stores – Difference in trust").

We also find that people who, in general, trust most other people, have a higher propensity to adopt PIS than people who distrust others. Having a high knowledge of PSD2 decreases people's adoption intention of PIS in all three payment situations. Consumers with high PSD2 knowledge are 5.0 pp (supermarkets) to 6.9 pp (online stores) more likely to be certain that they do not want to adopt PIS than people who are less knowledgeable about PSD2. Regarding the other demographic variables, we find that adoption intention is relatively high among men and strongly decreases with age. For instance, men are 5.5 pp (P2P payments) to 8.2 pp (supermarkets) less likely than women to be certain that they will not use PIS, while they are 0.5 pp (P2P payments) to 2.1 pp (online stores)

Table 4. Wald tests equality of coefficients for PSPs

Type of PSP	Type of PSP	Supermarket		P2P		Online store	
		Dummy	Difference in trust	Dummy	Difference in trust	Dummy	Difference in trust
Other bank	BigTech	p=0.002**	p=0.022*	p=0.373	p=0.092	p=0.002**	p=0.009**
Other bank	Supermarket	p=0.200	p=0.933				
Other bank	Social media company	n.a.	n.a.	p=0.852	p=0.151		
Other bank	Online store	n.a.	n.a.			p=0.031*	p=0.112
BigTech	Supermarket	p=0.036*	p=0.019*				
BigTech	Social media company	n.a.	n.a.	p=0.530	p=0.752		
BigTech	Online store	n.a.	n.a.			p=0.249	p=0.263

Note: * p<0.05, ** p<0.01, *** p<0.001.

more likely to be certain that they wil adopt it than women. Regarding age, we find that people aged 65 and older are 26.8 pp (supermarkets) to 35.4 pp (P2P payments) more likely than people who are 34 or younger to be certain that they will not use PIS.And it is not just the elderly who express a relatively low propensity to adopt PIS. Also people aged 35 - 44 years of age are less likely to do so for paying in supermarkets or for P2P payments than people below the age of 35. Such gender and age patterns are fairly common for the adoption of innovative (payment related) services (see e.g. Kosse, 2014 for an overview). However, contrary to what is often found in the literature, education and income do not correlate positively with adoption intention of PIS. These findings hold for all three payment situations. Furthermore, we find that the degree of urbanisation of the respondent's residence is significant for P2P payments and for payments in online stores. People who live in urbanised areas are more open to adopting PIS in these situations than people who live in less urbanised areas.

6.3 Adoption intention account information services (AIS) and the influence of financial incentives

6.3.1 Financial overview
Table 5 presents the ASC-logit results for the financial oveview. There are three options: 1) a financial overview provided by one's own bank, 2) a financial overview provided by a BigTech and 3) no financial overview. The benchmark is getting no financial overview, which was chosen by 55% of the respondents in the first round.

The results for the first round show that trust influences consumers' preferences. People who trust most people in general, are more likely than distrusting people to choose for a financial overview provided by their own bank instead of receiving no financial overview. They are less likely to prefer a financial overview from a BigTech. We find support for H5b: the intention to adopt a PIS relates positively to trust in the PSP offering the AIS. The higher trust in BigTechs, relative to trust in the own bank, the lower the likelihood that one prefers receiving an overview from their own bank and the higher the likelihood that one prefers to adopt the service offered by the BigTech. However, the latter effect is not significant at the 5% level.

People who are knowledgeable about PSD2 are less likely to prefer a financial overview from their own bank than others who know nothing or little about PSD2. With respect to the other demographic controls, gender, age, income and region matter. Men choose significantly more often for a financial overview from their own bank than women, but they do not opt significantly more often for a financial overview provided by a BigTech. Age has a negative impact on both the choice for a financial overview provided by one's own bank and by a BigTech. The effect is stronger for BigTechs than for one's own bank. Contrary, to what we expect, we find a negative impact of educational level on both the preference for the provision of an overview by one's own bank and by

Table 5. Alternative specific conditional (ASC) logit estimates financial overview

	Round 1		Round 2		Round 3	
Financial incentive by: own bank and BigTech			0.007*** (0.002)			
BigTech					0.024*** (0.004)	
Base: no financial overview	financial overview by own bank	Financial overview by a BigTech	financial overview by own bank	Financial overview by a BigTech	financial overview by own bank	Financial overview by a BigTech
Trust in other people	0.208*	-0.875*	0.198*	-0.306	0.169	0.120
	(0.087)	(0.373)	(0.085)	(0.345)	(0.0877)	(0.166)
Difference in trust: BigTechs	-0.119*	0.511	-0.086	0.297	-0.146**	0.394***
	(0.047)	(0.280)	(0.046)	(0.201)	(0.049)	(0.101)
High knowledge PSD2	-0.505***	-0.247	-0.376***	-0.800	-0.539***	-0.423*
	(0.112)	(0.415)	(0.107)	(0.416)	(0.114)	(0.197)
Male	0.192*	-0.127	0.232**	0.607*	0.238**	0.626***
	(0.079)	(0.333)	(0.079)	(0.310)	(0.082)	(0.142)
Between 35 and 44	-0.267	0.126	-0.311*	0.517	-0.206	-0.361
	(0.160)	(0.470)	(0.158)	(0.490)	(0.170)	(0.242)
Between 45 and 54	-0.537***	-0.660	-0.698***	-0.384	-0.500**	-0.965***
	(0.149)	(0.549)	(0.152)	(0.542)	(0.158)	(0.256)
Between 55 and 64	-0.717***	-1.243*	-0.728***	-0.482	-0.588***	-1.186***
	(0.145)	(0.527)	(0.146)	(0.520)	(0.153)	(0.250)
65 and over	-1.003***	-1.605**	-1.040***	-2.088**	-0.764***	-1.876***
	(0.137)	(0.528)	(0.136)	(0.664)	(0.143)	(0.253)
Education: bachelor or higher	-0.220*	-1.396**	-0.0837	-1.049*	-0.216*	-0.369*
	(0.092)	(0.473)	(0.0917)	(0.415)	(0.095)	(0.173)
Income: EUR 1151-1800	-0.065	0.069	-0.001	0.942	-0.088	0.138
	(0.185)	(0.672)	(0.182)	(0.700)	(0.192)	(0.336)
Income: EUR 1801-2600	0.104	-0.684	0.0710	-0.274	0.130	0.165
	(0.166)	(0.754)	(0.164)	(0.789)	(0.176)	(0.315)
Income: more than EUR 2600	-0.077	-0.799*	-0.058	-0.017	-0.059	-0.033
	(0.107)	(0.402)	(0.107)	(0.367)	(0.110)	(0.203)
Homeowner	-0.059	-0.767	-0.043	0.027	-0.042	-0.013
	(0.107)	(0.400)	(0.108)	(0.365)	(0.110)	(0.205)
Degree of urbanisation	-0.039	0.255	-0.015	0.228	-0.064	0.261***
	(0.036)	(0.152)	(0.056)	(0.141)	(0.037)	(0.069)
Region north	0.105	0.954*	-0.0281	0.831	-0.0124	0.518
	(0.149)	(0.475)	(0.150)	(0.462)	(0.153)	(0.267)
Region east	-0.306**	-0.0777	-0.234*	-0.415	-0.198	-0.269
	(0.117)	(0.504)	(0.115)	(0.482)	(0.120)	(0.241)
Region south	-0.0909	-0.702	-0.107	-0.598	-0.135	0.124
	(0.114)	(0.610)	(0.111)	(0.519)	(0.118)	(0.218)
Constant	0.343	-2.281*	0.295	-3.725***	0.179	-2.254***
	(0.248)	(0.986)	(0.249)	(-1.019)	(0.258)	(0.480)
Number of observations	7881		7881		7881	
Number of individuals	2627		2627		2627	
Log Likelihood	-1883.5		-1927.02		-2274.4	

Notes: The table reports parameter estimates for ASC-logit regressions. The dependent variable is respondents' choice for either receiving a financial overview from the own bank, receiving it from a BigTech, or not receiving a financial overview. Separate regressions have been estimated for three rounds. In round 1 there are no financial incentives, round 2 introduces financial incentives given by the own bank and the BigTech, and in round 3 only the BigTech gives financial incentives. Clustered standard errors at household level are in parentheses. * $p<0.05$, ** $p<0.01$, *** $p<0.001$

a BigTech. People in the highest income category are less likely to prefer an overview by a BigTech than people with a low income, but they do not differ with respect to their preference for an overview

by their own bank. Last, people living in the eastern part of the Netherlands are less likely to choose for an overview from their own bank than people in the western part of the Netherlands (the benchmark), while people living in the Northern part are more likely to prefer an overview from a BigTech. Most results for trust and demographic characteristics on consumers' preferences remain unchanged in round 2 and round 3, when financial rewards are introduced. In round 3 there are some noteworthy differences regarding preferences for receiving an overview from a BigTech. The difference in trust between a BigTech and one's own bank, knowing much about PSD2 and the age effect for people between 45 -54 years of age have become statistically significant at the 5% level. So the support for H5b has become more convincing. Furthermore, the sign of the gender effect has switched and has become significant at the 5% level in both rounds 2 and 3, implying that males are more likely to prefer receiving a financial overview from a BigTech than women once financial incentives are introduced. Something similar happens for the degree of urbanisation.

The level of the financial reward given by consumers' own bank and the BigTech in round 2 has a positive and significant impact on consumers' preferences. The higher the reward, the more likely consumers will adopt a financial overview given by the own bank or the BigTech. Table 6 shows the estimated impact of financial rewards on consumers' preferences. Rewards shift consumers' preferences from not receiving a financial overview to receiving it from one's own bank, but hardly towards receiving it from a BigTech. When the monthly reward would amount EUR 5, consumers' preference for a financial overview from their own bank would increase by 0.9 pp, and when the reward would be EUR 50, the increase would be 8.6 pp. So the share of consumers that wants to have the financial overview from their own bank would rise from 44% (benchmark situation without rewards) to 53%, while the share of consumers that prefer an overview from a BigTech would remain almost unaltered.

In round 3 only BigTechs offer consumers monthly rewards. In such a situation there will be two shifts in consumer preferences: from receiving a financial overview from one's own bank to

Table 6. Impact of financial incentives on consumers' preferences for a financial overview
Marginal effects in percentage points

	Financial overview from own bank	Financial overview by BigTech	No financial overview
Both the own bank and the BigTech give a financial incentive			
EUR 5	0.9	0.0	-0.9
EUR 10	1.7	0.0	-1.7
EUR 25	4.3	0.1	-4.4
EUR 50	8.6	0.1	-8.7
Only the BigTech gives a financial incentive			
EUR 5	-0.3	0.7	-0.4
EUR 10	-0.6	1.4	-0.8
EUR 25	-1.5	3.5	-2.0
EUR 50	-3.0	6.9	-3.9

receiving it from a BigTech and from not receiving a financial overview to receiving it from a BigTech. The overall impact is smaller than in the second round. The likelihood that someone would prefer a financial overview from a BigTech would rise by 0.7 pp if the monthly reward would be EUR 5, and by 6.9 pp if the monthly reward would be EUR 50. About 4/7 of the increased preference for the BigTech stems from the reduced preference of consumers for not getting a financial overview and 3/7 from the reduced preference for receiving it from their own bank.

To sum, we find support for H3b (the adoption intention of AIS is higher for one's own bank than for non-banks) and also for H4a (the adoption intention of AIS depends positively on the size of the financial incentive) and H4c (the adoption intention of AIS offered by non-banks depends positively on the size of the financial incentive). However, the outcomes of rounds 2 and 3 suggest that consumers who initially did not want to receive an overview are more sensitive to financial incentives from their own bank than from a BigTech.

6.3.2   Mortgages and personal loans

Tables 7 and 8 present the ASC-logit results for respectively mortgage and personal loans. There are three options: a mortgage (personal loan) 1) from one's own bank, 2) from another bank where one does not have an account, and 3) from a BigTech. In both sets of estimations, the benchmark PSP is the bank where the respondent already holds the main payment account.

Most respondents prefer their own bank, anything else equal included financial conditions. In round 1 for mortgages, 93% of the respondents expressed their preference or their own bank, 5% for another bank and 1% for a BigTech. The results are fairly similar for personal loans; 96% indicated in Round 1 to prefer a personal loan from their own bank, 3% from another bank and 1% from a BigTech. We therefore find support for H3a (the adoption intention of AIS is higher for one's own bank than for other banks), H3b (the adoption intention of AIS is higher for one's own bank than for non-banks) and H3c (the adoption intention of AIS is higher for other banks than for non-banks).

The estimation results in round 1 for mortgages and personal loans bear great resemblance and are therefore discussed together. Unlike the outcomes for adoption intention in PIS and the financial overview trust in other people, having a good understanding of PSD2 and gender do not significantly influence people's preferences in round 1. On the other hand, education and income have a significant effect. People with at least a bachelor degree are significantly less likely to prefer a mortgage or personal loan from a BigTech than from their own bank than people with less education. However, the preference for another bank is unrelated to the level of education. Regarding income, we find a negative income effect for preferring a BigTech over one's own bank for mortgage loans, but there is no income effect for personal loans. Trust in the different PSPs play a significant role, so we find support for H5c. The higher trust in BigTechs relative to trust in one's own bank, the more likely it is that people prefer taking out a mortgage or personal loan from a BigTech instead of from

Table 7. Alternative specific conditional (ASC) logit estimates for mortgages

	Round 1		Round 2		Round 3	
Lower monthly payment to:						
another bank			-0.0077***			
			(0.001)			
BigTech					-0.0102***	
					(0.001)	
Base: mortgage by own bank	Another bank	A BigTech	Another bank	A BigTech	Another bank	A BigTech
Trust in other people	-0.032	-0.651	0.262**	-0.362	-0.041	0.174
	(0.184)	(0.385)	(0.088)	(0.335)	(0.183)	(0.111)
Difference in trust: other banks	0.109	-0.803**	0.360***	-0.424	0.155	-0.059
	(0.162)	(0.292)	(0.067)	(0.278)	(0.155)	(0.082)
Difference in trust: BigTechs	0.275*	1.087***	-0.139*	0.707***	0.189	0.410***
	(0.119)	(0.275)	(0.059)	(0.210)	(0.131)	(0.072)
High knowledge PSD2	-0.331	-0.290	-0.019	-0.905	-0.534	-0.135
	(0.251)	(0.509)	(0.106)	(0.561)	(0.294)	(0.126)
Male	0.175	-0.189	0.319***	-0.030	0.161	0.687***
	(0.176)	(0.338)	(0.0823)	(0.329)	(0.183)	(0.099)
Between 35 and 44	0.356	-0.829	-0.199	-1.091	0.024	0.016
	(0.305)	(0.637)	(0.163)	(0.696)	(0.316)	(0.193)
Between 45 and 54	0.181	-0.673	-0.294*	-0.348	-0.056	-0.071
	(0.294)	(0.671)	(0.150)	(0.525)	(0.300)	(0.183)
Between 55 and 64	-0.317	-1.420*	-0.661***	-1.312*	-0.496	-0.402*
	(0.321)	(0.675)	(0.146)	(0.583)	(0.305)	(0.183)
65 and over	-0.229	-0.057	-1.009***	-0.915*	-0.627*	-0.622***
	(0.281)	(0.425)	(0.137)	(0.428)	(0.289)	(0.171)
Education: bachelor or higher	-0.331	-1.511**	0.143	-0.413	-0.324	-0.021
	(0.214)	(0.537)	(0.093)	(0.384)	(0.209)	(0.114)
Income: EUR 1151-1800	-0.068	-1.583*	0.178	-1.051	0.130	0.286
	(0.322)	(0.620)	(0.180)	(0.557)	(0.344)	(0.223)
Income: EUR 1801-2600	-0.854*	-1.308**	-0.039	-1.467**	-0.597	-0.032
	(0.336)	(0.507)	(0.170)	(0.527)	(0.337)	(0.211)
Income: more than EUR 2600	-0.222	-0.783	0.122	-0.516	-0.014	0.012
	(0.297)	(0.506)	(0.164)	(0.452)	(0.304)	(0.202)
Homeowner	-0.228	0.142	0.335**	0.0929	0.0727	0.329*
	(0.221)	(0.393)	(0.108)	(0.386)	(0.219)	(0.145)
Degree of	-0.036	-0.066	-0.001	0.170	0.077	0.065
	(0.075)	(0.160)	(0.035)	(0.129)	(0.073)	(0.044)
Region north	-0.317	-0.773	-0.202	-0.027	-0.795*	-0.169
	(0.312)	(0.698)	(0.148)	(0.588)	(0.365)	(0.184)
Region east	-0.083	-0.185	-0.444***	0.259	-0.393	-0.146
	(0.237)	(0.526)	(0.119)	(0.452)	(0.255)	(0.144)
Region south	-0.098	-0.874	-0.118	0.234	-0.111	-0.188
	(0.231)	(0.545)	(0.114)	(0.442)	(0.222)	(0.145)
Constant	-1.619**	-0.952	-0.515	-1.700*	-1.812***	-2.132***
	(0.496)	(0.904)	(0.264)	(0.824)	(0.523)	(0.319)
Observations	7881		7881		7881	
Individuals	2627		2627		2627	
Log likelihood	-692.1		-1853.4		-1728.5	

Notes: The table reports parameter estimates for ASC-logit regressions. The dependent variable is consumers' choice for either a mortgage from their own bank, another bank or from a BigTech. Separate regressions have been estimated for three rounds. In round 1 the monthly mortgage payment is the same for the three PSPs, in round 2 the monthly mortgage payment to another bank is lower than for the own bank or the BigTech, and in round 3 the BigTech charges lower monthly mortgage payment than the own or other banks. Clustered standard errors at household level are in parentheses. * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 8. Alternative specific conditional (ASC) logit estimates for personal loans

	Round 1		Round 2		Round 3	
Lower monthly payment to:						
another bank			-0.0662***			
			(0.0118)			
BigTech					-0.0894***	
					(0.0142)	
Base: personal loan from my own bank	Another bank	A BigTech	Another bank	A BigTech	Another bank	A BigTech
Trust in other people	-0.537	-0.757	0.326***	-0.139	-0.403	0.245*
	(0.277)	(0.410)	(0.087)	(0.401)	(0.237)	(0.112)
Difference in trust: other banks	-0.0920	-0.633	0.346***	-0.410	-0.175	-0.230**
	(0.225)	(0.329)	(0.066)	(0.315)	(0.197)	(0.087)
Difference in trust: BigTechs	0.457*	1.067***	-0.087	0.468	0.626***	0.528***
	(0.178)	(0.235)	(0.059)	(0.261)	(0.168)	(0.078)
High knowledge PSD2	-0.006	-1.161	-0.036	-0.628	-0.561	-0.200
	(0.357)	(0.658)	(0.108)	(0.561)	(0.370)	(0.128)
Male	0.0678	-0.063	0.218**	-0.145	0.213	0.456***
	(0.248)	(0.331)	(0.081)	(0.359)	(0.226)	(0.098)
Between 35 and 44	-0.641	-0.364	-0.228	-0.680	-0.455	-0.279
	(0.445)	(0.555)	(0.164)	(0.646)	(0.423)	(0.189)
Between 45 and 54	-0.283	-0.823	-0.318*	-0.705	-0.228	-0.180
	(0.386)	(0.656)	(0.154)	(0.611)	(0.377)	(0.183)
Between 55 and 64	-0.906*	-1.431*	-0.788***	-1.298*	-0.264	-0.683***
	(0.433)	(0.682)	(0.151)	(0.595)	(0.362)	(0.181)
65 and over	-0.810*	-0.607	-0.964***	-1.638**	-0.571	-0.799***
	(0.355)	(0.430)	(0.141)	(0.505)	(0.332)	(0.170)
Education: bachelor or higher	-0.401	-1.322*	0.222*	-0.459	-0.266	-0.007
	(0.324)	(0.557)	(0.091)	(0.485)	(0.272)	(0.116)
Income: EUR 1151-1800	-0.130	-0.775	0.372*	-0.900	0.965*	0.284
	(0.468)	(0.621)	(0.184)	(0.635)	(0.453)	(0.213)
Income: EUR 1801-2600	-0.192	-0.353	0.192	-1.411*	0.062	-0.009
	(0.421)	(0.563)	(0.176)	(0.614)	(0.466)	(0.201)
Income: more than EUR 2600	-0.147	-0.314	0.248	-0.817	0.534	0.040
	(0.438)	(0.609)	(0.172)	(0.575)	(0.439)	(0.189)
Homeowner	-0.185	-0.189	0.254*	0.485	0.249	0.119
	(0.296)	(0.457)	(0.111)	(0.525)	(0.274)	(0.138)
Degree of urbanisation	0.063	0.042	-0.007	0.097	0.077	0.0154
	(0.099)	(0.149)	(0.036)	(0.153)	(0.089)	(0.043)
Region north	-1.069*	0.393	-0.201	0.731	-1.076*	-0.205
	(0.515)	(0.576)	(0.152)	(0.573)	(0.463)	(0.188)
Region east	-0.246	0.689	-0.389**	0.943	-0.396	-0.269
	(0.312)	(0.495)	(0.119)	(0.512)	(0.286)	(0.147)
Region south	-0.671	-0.318	-0.221	-0.209	-0.884**	-0.208
	(0.349)	(0.575)	(0.114)	(0.585)	(0.328)	(0.142)
Constant	-1.679**	-1.835*	-0.365	-2.258*	-2.271***	-1.359***
	(0.615)	(0.820)	(0.271)	(0.938)	(0.621)	(0.313)
Observations		7881		7881		7881
Individuals		2627		2627		2627
Log likelihood		-479.6		-1828.1		-1582.3

Note: The table reports parameter estimates for ASC-logit regressions. The dependent variable is respondents' choice for either a personal loan from their own bank, another bank or from a BigTech. Separate regressions have been estimated for three rounds. In round 1 the monthly payments is the same for the three PSPs, in round 2, the monthly payments to another bank is lower than for the own bank or the BigTech, and in round 3 the BigTech charges a lower monthly payment than the own bank or other banks. Clustered standard errors at household level are in parentheses. * p<0.05, ** p<0.01, *** p<0.001

one's own bank. Furthermore, the higher trust in other banks relative to trust in the own bank, the lower the likelihood that someone prefers a mortgage loan from a BigTech, but the preference for a

mortgage from another bank remains unaltered. Age effects are less pronounced than for PIS or the financial overview. The preferences of people aged between 35 and 54 are not significantly different from those of people who are 34 or younger (the benchmark group). People between 55 and 64 are less likely to prefer a BigTech for both types of loans. They are also, together with people who are 65 or older, less likely to prefer another bank than their own bank for taking out a personal loan than people in the benchmark group.

When financial incentives are introduced in Rounds 2 and 3, some variables that are not significant in round 1 do become significant. This holds for trust in other people, male, age between 45 and 54, being a homeowner and having a net HH income EUR 1150–2600. For instance, when either other banks or BigTechs offer mortgages and personal loans against lower interest rates and lower monthly repayments for lenders than the other PSPs, men become more likely than women to prefer PSPs that offer more favourable financial conditions than their own bank. This holds for both their preferences for other banks (round 2) and for BigTechs (round 3). This is in line with the prior findings for PIS. Homeowners show a significantly higher preference for other banks (round 2) and BigTechs (round 3) than people who rent a house, if these PSPs offer them lower monthly mortgage payments than the other PSPs, including their own bank. Homeowners are also more likely to have a higher preference for a personal loan offered by another bank, against more favourable financial conditions, than people who rent.

Table 9 presents the impact of financial incentives given by another bank and the BigTech on consumers' preferences for the thee different PSPs in case of the mortgage loan and confirms our hypotheses that financial incentives matter for the adoption intentioin of AIS (H4a, H4b, H4c). The level of the monthly mortgage payment has a negative and significant effect on consumers' preferences for PSPs. Negative coefficients imply that the demand for a mortgage provided by a particular PSP rises when the level of the monthly mortgage payments decreases, while the demand

Table 9. Impact of financial incentives on consumers' preferences for a mortgage by one's own bank, another bank or a BigTech
Marginal effects in percentage points

	Impact of financial incentives on consumers' preferences for a mortgage by…		
	…one's own bank	…another bank	…a BigTech
The other bank charges a lower monthly mortgage payment of…			
EUR 1200	-6.1	6.2	-0.1
EUR 1168	-12.1	12.4	-0.2
EUR 1136	-18.2	18.5	-0.4
EUR 1104	-24.3	24.7	-0.5
The BigTech charges a lower monthly mortgage payment of…			
EUR 1200	-4.6	-0.3	4.9
EUR 1168	-9.2	-0.6	9.8
EUR 1136	-13.9	-0.9	14.7
EUR 1104	-18.5	-1.2	19.7

Note: The default monthly mortgage payment is EUR 1232.

from other PSPs reduces. The results for round 2 show that if the other bank offers a monthly mortgage payment of EUR 1200 while the own bank and the BigTech offer both EUR 1232 (the default), the likelihood that a consumer prefers the other bank rises by 6.2 pp, while it drops by 6.1 pp for the own bank and by 0.1 pp for the BigTech. If the other bank lowers the monthly mortgage payment to EUR 1104, the likelihood that consumers prefer the other bank's offer increases to 24.7 pp. These outcomes indicate that many consumers are price sensitive, but most of them not, and will stick to their own bank. This seems to hold less for the 1% that initially preferred a BigTech in round 1. They seem more price conscious than the ones that prefer their own bank. About half of them switched preferences from BigTech to the other bank when the latter charges EUR 1104 instead of EUR 1232.

The outcomes for round 3 are in line with those found for round 2, although price sensitivity of the consumers is slightly lower. If a BigTech offers a monthly mortgage payment of EUR 1200 instead of EUR 1232, the likelihood that consumers prefer the BigTech increases by 4.9 pp, while the likelihood that they prefer their own bank or another bank drops by respectively 4.6 pp and 0.3 pp. If the BigTech lowers the monthly mortgage payment to EUR 1104, the propensity to prefer the BigTech rises by 19.7 pp, while it drops by 18.5 pp for the own bank and 1.2 pp for another bank.

Table 10 shows the impact of financial incentives on consumers' preferences in case of a personal loan and provides additional support for H4a, H4b, and H4c. Also here we find that the level of the monthly payment has a negative and significant effect on consumers' preferences for PSPs. If another bank than the own bank or the BigTechs offer consumers a personal loan against a monthly payment of EUR 101.04 instead of EUR 104.17 then the likelihood that someone prefers another bank rises by 5.2 pp, while the likelihood that (s)he prefers the own bank drops by 5.1 pp, and that (s) prefers the BigTech drops by 0.1 pp. If the BigTech gives a similar incentive then the likelihood that someone prefers the BigTech increases by 4.2 pp, while the likelihood that someone prefers the own bank or another bank reduces by 4.1 pp respectively 0.1 pp. So, as with the financial monthly reward for the financial overview and the reduced monthly mortgage repayments the impact of the incentive given by a BigTech for a personal loan on consumers' preferences is smaller, but of the same order of magnitude as the impact of a similar incentive given by a bank. Again, even if we look at the most attractive incentive given, i.e. the consumer pays EUR 91.67 instead of EUR 104.17 each month, most consumers still prefer their own bank. If another bank offers the loan for EUR 91.67 a month then the likelihood that someone prefers the other bank would increase by 20.7 pp, while the preference for the own bank would drop by 20.4 pp, indicating that ¾ of the consumers would still prefer their own bank. If the BigTech would offer EUR 91.67, then the likelihood that someone would prefer the BigTech would rise by 17 pp, while the preference for the own bank would drop by 16.4 pp, implying that about 8/10 of the consumers would still prefer their own bank for a personal loan.

Table 10. Impact financial incentive on respondents' preferences for a personal loan by one's own bank, another bank or a BigTech

Marginal effects in percentage points

	Impact of financial incentives on consumers' preferences for a loan by…		
	…one's own bank	…another bank	…a BigTech
The other bank charges a lower monthly repayment			
EUR 101.04	-5.1	5.2	-0.1
EUR 97.92	-10.2	10.3	-0.1
EUR 94.79	-15.3	15.5	-0.2
EUR 91.67	-20.4	20.7	-0.3
The BigTech charges a lower monthly repayment			
EUR 101.04	-4.1	-0.1	4.2
EUR 97.92	-8.2	-0.3	8.5
EUR 94.79	-12.3	-0.4	12.7
EUR 91.67	-16.4	-0.6	17.0

Note: The default monthly repayment is EUR 104.17.

==highlight== 6.3.3 Trade off trust and financial incentives (to do)

How large should the financial incentive be to equalize the share of people that select their own bank and the share of people that select a BigTech?

7. Discussion and conclusion

We study consumers' propensity to adopt PSD2 services offered by incumbent banks and licensed newcomers in the retail payments market to assess to what extent PSD2 may enhance competition in the European retail payments market.

We find that most consumers are unwilling to agree with the usage of their payments data by any bank or any of the newcomers to offer new services. Support for payments data usage is highest if the data user is one's own bank. Only a minority of the consumers would give consent to payments data usage by other banks they are no customer of orby newcomers in the payments market.

When focusing specifically at PIS, we find that the likelihood of adopting this new service is low. This holds for various situations in which a PSP can initiate payments on behalf of the account holder, i.e. for simplifying payments in supermarkets, for making it easier to pay in online stores and for improving P2P payments. The adoption intention is highest when the service is offered by consumers' own bank, followed at a distance by a BigTech company (for paying in supermarkets or in online stores). The adoption intention is even lower if the service is offered by the entrepreneur of the payment situation or by another bank. However, if BigTechs are able to gain the public's trust, consumers' intention to adopt PIS from them may rise, as adoption intentions significantly relate to how much trust people have in a PSP relative to their trust in their own bank.

Males, young people, and people living in urbanised areas show the highest propensity to adopt PSD2-related services, irrespective of financial incentives. Interestingly, people with higher

self-reported knowledge of PSD2 are more hesitant to use new services than people with less PSD2 knowledge.

Furthermore, pricing matters for the adoption of AIS by newcomers. If people need to select a service provider and there are no financial incentives, most people prefer their own bank. However, if other banks or BigTechs offer AIS against more favourable financial conditions than their own bank, preferences of part of the consumers that preferred to adopt the service from their own bank change. They switch to the PSP that offers the best financial condition. However, even if incentives are large, most people would still prefer their own bank. And if they have the option to not adopt the service, as was possible in our vignette on a financial overview, roughly half of the people do not want to use the service at all. Interestingly, the sensitivity to financial incentives also depends on background characteristics. For example, we find that men are more sensitive to financial incentives than women.

Overall, we conclude that PSD2 might indeed enhance competition in the European retail payments market, but the position of incumbent banks is strong. Newcomers need to work on gaining people's trust, and show that their payments data is safe with them. Furthermore, they may attract customers by offering them financially attractive products, as consumers' demand for PSD2 services turns out to be sensitive to prices. They might be able to do so, in product markets where the margins are high and by making intelligent use of peole's payments data so that they can make tailor made offers, which adequately price risks.

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Appendix A. Description of vignettes

Vignette A.1 Account information services for a mortgage loan

Say you want to take out a mortgage loan of € 300,000 so you can buy a house. You repay the amount within 30 years and borrow at a fixed rate of interest.

As well as the bank where you have your main payment account, you can also choose to take out a mortgage loan from another bank or a technology company such as Amazon, Apple, Facebook and Google. With your permission, they can access and view your bank's payment information to determine if you qualify for the mortgage loan and the rate of interest on the loan. The providers are licensed and supervised.

What is your choice?

Choice 1	**Choice 2**	**Choice 3**
Mortgage from **the bank where I have my main payment account**.	Mortgage from **another bank**.	Mortgage from a **technology company**.
The mortgage interest rate is 2.8%.	The mortgage interest rate is 2.8%.	The mortgage interest rate is 2.8%.
I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years.	I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years.	I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years.
	I give this bank permission to view the details of my payment account(s) at my own bank(s).	I give this company permission to view the details of my payment account(s) at my own bank(s).

[4 random groups]
What is your choice now?

Choice 1 Mortgage from **the bank where I have my main payment account**. The mortgage interest rate is 2.8%. I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years.
Choice 2 Mortgage from **another bank**. [*if crandom=1:* The mortgage interest rate is 2.6%. I pay € 1,200 per month (mortgage repayment and interest), totalling € 432,000 over 30 years. */if crandom=2:* The mortgage interest rate is 2.4%. I pay € 1,168 per month (mortgage repayment and interest), totalling € 420,480 over 30 years. */if crandom=3:* The mortgage interest rate is 2.2%. I pay € 1,136 per month (mortgage repayment and interest), totalling € 408,960 over 30 years. */if crandom=4:* The mortgage interest rate is 2.0%. I pay € 1,104 per month (mortgage repayment and interest), totalling € 397,440 over 30 years.] I give this bank permission to view the details of my payment account(s) at my own bank(s).
Choice 3 Mortgage from **a technology company**. The mortgage interest rate is 2.8%. I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years. I give this company permission to view the details of my payment account(s) at my own bank(s).

[4 random groups]
Lastly, what do you choose?

Choice 1 Mortgage from **the bank where I have my main payment account**. The mortgage interest rate is 2.8%. I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years.
Choice 2 Mortgage from **another bank**. The mortgage interest rate is 2.8%. I pay € 1,232 per month (mortgage repayment and interest), totalling € 443,520 over 30 years. I give this bank permission to view the details of my payment account(s) at my own bank(s).
Choice 3 Mortgage from **a technology company**. [*if drandom=1:* The mortgage interest rate is 2.6%. I pay € 1,200 per month (mortgage repayment and interest), totalling € 432,000 over 30 years. */if drandom=2:* The mortgage interest rate is 2.4%. I pay € 1,168 per month (mortgage repayment and interest), totalling € 420,480 over 30 years. */if drandom=3:* The mortgage interest rate is 2.2%. I pay € 1,136 per month (mortgage repayment and interest), totalling € 408,960 over 30 years. */if drandom=4:* The mortgage interest rate is 2.0%. I pay € 1,104 per month (mortgage repayment and interest), totalling € 397,440 over 30 years.] I give this company permission to view the details of my payment account(s) at my own bank(s).

Vignette A.2. Account information services for a personal loan

Say you want to take out a personal loan of € 5,000. You repay the amount within 5 years and borrow at a fixed rate of interest.

You can choose from different providers. As well as the bank where you have your main payment account, you can also choose to take out a personal loan from another bank or a technology company such as Amazon, Apple, Facebook and Google. With your permission, they can view the details of your payment account(s) at your bank(s). The providers are licensed and supervised.

What is your choice?

Choice 1	**Choice 2**	**Choice 3**
Personal loan from **the bank where I have my main payment account**.	Personal loan from **another bank**.	Personal loan from **a technology company**.
The interest rate is 10%.	The interest rate is 10%.	The interest rate is 10%.
I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years.	I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years.	I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years.
	I give this bank permission to view the details of my payment account(s) at my own bank(s).	I give this company permission to view the details of my payment account(s) at my own bank(s).

[4 random groups]
v5b What is your choice now?

Choice 1 Personal loan from **the bank where I have my main payment account**. The interest rate is 10%. I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years.
Choice 2 Personal loan from **another bank**. [*if erandom=1:* The interest rate is 8.5%. I pay € 101.04 per month (repayment and interest), totalling € 6,062 over 5 years. */if erandom=2:* The interest rate is 7%. I pay € 97.92 per month (repayment and interest), totalling € 5,875 over 5 years. */if erandom=3:* The interest rate is 5.5%. I pay € 94.79 per month (repayment and interest), totalling € 5,687 over 5 years. */if erandom=4:* The interest rate is 4%. I pay € 91.67 per month (repayment and interest), totalling € 5,500 over 5 years.] I give this bank permission to view the details of my payment account(s) at my own bank(s).
Choice 3 Personal loan from **a technology company**. The interest rate is 10%. I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years. I give this company permission to view the details of my payment account(s) at my bank(s).

[4 random groups]
v5c Lastly, what do you choose?

Choice 1 Personal loan from **the bank where I have my main payment account**. The interest rate is 10%. I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years.
Choice 2 Personal loan from **another bank**. The interest rate is 10%. I pay € 104.17 per month (repayment and interest), totalling € 6,250 over 5 years. I give this bank permission to view the details of my payment account(s) at my own bank(s).
Choice 3 Personal loan from **a technology company**. [*if frandom=1:* The interest rate is 8.5%. I pay € 101.04 per month (repayment and interest), totalling € 6,062 over 5 years. */if frandom=2:* The interest rate is 7%. I pay € 97.92 per month (repayment and interest), totalling € 5,875 over 5 years. */if frandom=3:* The interest rate is 5.5%. I pay € 94.79 per month (repayment and interest), totalling € 5,687 over 5 years. */if frandom=4:* The interest rate is 4%. I pay € 91.67 per month(repayment and interest), totalling € 5,500 over 5 years.] I give this company permission to view the details of my payment account(s) at my own bank(s).

Vignette A.3. Payment Initiation Services

Under PSD2, you can also permit a company to make a payment from your payment account. For example, if you buy a product at a webshop this company can issue a payment order to your bank to pay the webshop on your behalf. The bank then processes the payment order. This new electronic payments method, which can be regarded as an alternative for e.g. iDEAL, credit card and PayPal payments, is referred to as a payment initiation service. It involves a transfer of money from your account.

[4 random groups]
Paying for your groceries at the supermarket

Say [*if grandom=1*: your own bank / *if grandom=2*: a bank of which you are not a customer / *if grandom=3*: a technology company / *if grandom=4*: a supermarket offers you the option of [*if grandom= 2, 3 of 4*: ordering your bank on your behalf] to pay for your groceries at [*if grandom=1, 2 of 3*: a supermarket / *if grandom=4*: this supermarket] quickly and easily. The money is then transferred directly to the supermarket from your payment account.

[*if grandom=1*: Would you use this new payment option? / *if grandom=2, 3 of 4*: Would you give your permission to this company to issue a payment order to your bank on your behalf?

1   Definitely not
2   Probably not
3   Neutral
4   Probably
5   Definitely

[4 random groups]
Making person-to-person (P2P) payments

Say [*if hrandom=1*: your own bank / *if hrandom=2*: a bank of which you are not a customer / *if hrandom=3*: a technology company / *if hrandom=4*: a social media company] offers you a way of making P2P payments to e.g. friends and family more quickly and easily. [*if hrandom=2, 3 of 4:* This company issues a payment order to your bank on your behalf and the money is then transferred directly to your friend or family member from your payment account.

[*if hrandom=1*: Would you use this new payment option? / *if hrandom=2, 3 of 4*:
Would you give your permission to this company to issue a payment order to your bank on your behalf?

1   Definitely not
2   Probably not
3   Neutral
4   Probably
5   Definitely

[4 random groups]
Making payments to a webshop

Say [*if irandom=1*: your own bank / *if irandom=2*: a bank of which you are not a customer / *if irandom=3*: a technology company / *if irandom=4*: a webshop] offers you the option of [*if irandom=2, 3 of 4*: ordering your bank on your behalf] to pay for your shopping at [*if grandom=1, 2 of 3*: a webshop / *if grandom=4*: this webshop] quickly and easily. The money is then transferred directly to the webshop from your payment account.

[*if irandom=1*: Would you use this new payment option? / *if irandom=2, 3 of 4*: Would you give your permission to this company to issue a payment order to your bank on your behalf?

1   Definitely not
2   Probably not
3   Neutral
4   Probably
5   Definitely

Appendix B. Summary statistics

Table B.1. Summary statistics explanatory variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Male	2,627	0.51	0.50	0	1
34 and younger	2,627	0.14	0.35	0	1
Between 35-44	2,627	0.13	0.34	0	1
Between 45-54	2,627	0.17	0.37	0	1
Between 55-64	2,627	0.20	0.40	0	1
65 and older	2,627	0.36	0.48	0	1
Education: BA degree and higher	2,627	0.37	0.48	0	1
High knowledge on PSD2	2,627	0.20	0.40	0	1
Household income: EUR 1150 or less	2,627	0.09	0.29	0	1
Household income: between EUR 1150 - EUR 1800	2,627	0.15	0.36	0	1
Household income: between EUR 1800 - EUR 2600	2,627	0.25	0.43	0	1
Household income: EUR 2600 and more	2,627	0.51	0.50	0	1
Homeowner	2,627	0.72	0.45	0	1
Degree of urbanisation	2,627	3.03	1.32	1	5
Region north	2,627	0.11	0.32	0	1
Region east	2,627	0.22	0.42	0	1
Region south	2,627	0.24	0.43	0	1
Region west	2,627	0.42	0.49	0	1
Trust in other people	2,627	0.54	0.50	0	1
Trust in one's own most important bank	2,627	3.41	0.72	1	5
Trust in another own bank	1,221	3.27	0.68	1	5
Trust in other banks	2,627	2.76	0.72	1	5
Trust in technology companies	2,627	1.88	0.72	1	5
Trust in supermarket	2,627	2.53	0.81	1	5
Trust in online stores	2,627	2.29	0.77	1	5

Source: CentERpanel, August 2019:

Notes: Descriptive statistics of the explanatory variables used in the regression analyses, based on the information from 2,627 respondents from whom we have information on all explanatory variables. Information on trust in another own bank is only available for respondents who have more than own bank.

Appendix C. Trust in payment service providers

Table C.1. Ordered probit estimates explaining respondents' trust in PSPs

	Own most important bank	Other own bank	Other banks	Technology companies	Online stores	Supermarkets
Victim financial crime	-0.131	-0.088	-0.021	-0.119	-0.129	-0.090
	(0.074)	(0.109)	(0.074)	(0.074)	(0.073)	(0.072)
Trust in other people	0.342***	0.505***	0.597***	0.424***	0.551***	0.510***
	(0.046)	(0.0708)	(0.047)	(0.046)	(0.045)	(0.045)
High knowledge in PSD2	-0.013	-0.082	0.108	-0.077	0.085	-0.087
	(0.056)	(0.079)	(0.057)	(0.056)	(0.0552)	(0.055)
Male	0.069	0.134*	0.058	-0.026	-0.013	-0.017
	(0.045)	(0.068)	(0.045)	(0.045)	(0.044)	(0.044)
Between 35 and 44	-0.0305	-0.101	-0.029	-0.054	0.012	0.015
	(0.084)	(0.140)	(0.086)	(0.083)	(0.084)	(0.083)
Between 45 and 54	-0.248**	-0.163	-0.155	-0.237**	-0.246**	-0.165*
	(0.080)	(0.136)	(0.082)	(0.079)	(0.079)	(0.079)
Between 55 and 64	-0.125	-0.174	-0.263***	-0.352***	-0.392***	-0.247**
	(0.077)	(0.130)	(0.078)	(0.076)	(0.076)	(0.076)
65 and above	-0.019	-0.073	-0.471***	-0.498***	-0.623***	-0.379***
	(0.070)	(0.120)	(0.026)	(0.070)	(0.070)	(0.069)
Education: bachelor or higher	-0.068	-0.097	-0.018	-0.151**	0.033	0.040
	(0.048)	(0.071)	(0.049)	(0.048)	(0.048)	(0.047)
Income: EUR 1151-1800	0.179	0.135	0.042	0.025	0.042	-0.051
	(0.092)	(0.159)	(0.092)	(0.092)	(0.091)	(0.090)
Income: EUR 1801-2600	0.162	0.112	0.235**	-0.020	0.040	-0.076
	(0.086)	(0.143)	(0.0861)	(0.086)	(0.085)	(0.084)
Income: more than EUR 2600	0.139	0.176	0.206*	0.036	0.085	-0.018
	(0.083)	(0.138)	(0.083)	(0.082)	(0.082)	(0.081)
Homeowner	-0.043	-0.012	0.088	-0.008	-0.096	-0.123*
	(0.055)	(0.090)	(0.055)	(0.055)	(0.054)	(0.054)
Degree of urbanisation	-0.021	-0.044	-0.037*	-0.002	-0.013	-0.040*
	(0.018)	(0.028)	(0.018)	(0.018)	(0.018)	(0.018)
Region north	-0.053	-0.049	-0.083	0.0290	0.003	-0.051
	(0.077)	(0.118)	(0.078)	(0.076)	(0.076)	(0.075)
Region east	0.001	-0.021	-0.134*	-0.044	-0.085	-0.053
	(0.059)	(0.091)	(0.060)	(0.059)	(0.059)	(0.058)
Region south	-0.024	-0.129	-0.119*	-0.028	-0.029	-0.075
	(0.058)	(0.086)	(0.058)	(0.058)	(0.057)	(0.056)
Observations	2627	1221	2627	2627	2627	2627
Pseudo R^2	0.02	0.03	0.06	0.03	0.06	0.03
Log Likelihood	-2711.1	-1175.3	-2606.0	-2693.4	-2818.5	-2968.8

Note: The number of observations ranges between 1221 for other bansk and 2627 for the other PSPs. The table reports parameter estimates for ordered probit regressions in all columns with *Trust in PSP j* as dependent variable. This variable ranges from 1(very little trust) to 5 (very much trust). Robust clustered standard errors on household level are between parentheses. * $p<0.05$, ** $p<0.01$, *** $p<0.001$. Marginal effects are available on request.