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Nicole Jonker and Anneke Kosse

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Central bank and prudential supervisor of financial institutions

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Towards a European payments market: survey results on cross-border payment behaviour of Dutch consumers

Nicole Jonker and Anneke Kosse¹

Abstract:

National noncash retail payment markets in the euro area will gradually migrate to a single euro payments area (SEPA) from 2008 onwards. Within SEPA, citizens will be able to make and receive payments to and from other euro countries as easily and safely, and on the same conditions, as in their own country using one bank account and one set of payment instruments (debit card, credit transfer and direct debit). This study reveals that the Dutch pay differently for their cross-border purchases than for their domestic purchases and that payment behaviour differs per euro country. The limited cross-border acceptance of the debit card hampers its cross-border usage and encourages the usage of cash and credit cards. Furthermore the Dutch most often use electronic transfers, followed by the credit card, for remote cross-border payments. The speed at which the Dutch will switch over to European debit cards and credit transfers will depend heavily on acceptance levels, prices and safety. Migration to the European direct debit may be hardest to achieve. Here, safety is of vital importance.

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I Introduction

The payment system in Europe is going to change over the next few years. The current national payments markets in Europe will be integrated in order to create a single euro payments area (SEPA). From 2008 onwards, European banks will gradually start offering their customers European payment instruments for credit transfer, direct debit and card payments, which can be used all over the euro area. These products will slowly replace the current national payment instruments. Once this process is completed, European citizens will be able to make and receive payments throughout the whole euro area using a single bank account and a single set of payment instruments that are just as secure and efficient as the current national products (DNB 2006, ECB 2006). This will contribute to an internal market for goods and services in Europe. We expect that cross-border consumption will increase in the near future. Due to the fast adoption of Internet and the rising number of retailers offering their goods and services for sale online, European citizens are expected to make more and more remote cross-border purchases. Furthermore, increased wealth and increased mobility of European citizens will stimulate cross-border consumption in other euro countries. The introduction of the SEPA payment instruments may facilitate paying for cross-border purchases and consequently may stimulate cross-border consumption even further. Furthermore it may lead to increased cost efficiency, because of more intense competition among payment services providers in Europe and increasing economies of scale in the processing of payment transactions.

One year before the launch of SEPA the Nederlandsche Bank, in co-operation with CentERdata, conducted a survey among 1,676 households included in the DNB Household Panel, in which over 1,400 panel members took part. The survey was conducted in order to shed light onto the following four research questions:

- What payment instruments do the Dutch use currently, before the launch of SEPA, when they make payments in other euro countries and to other euro countries?
- What do Dutch consumers think about making payments in and to other euro countries before SEPA, with respect to safety, acceptance, ease of use, transaction speed and cost?
- Which factors affect Dutch consumers' behaviour and perceptions regarding cross-border payments?
- What do the Dutch currently think about the possibilities SEPA may offer them?

The survey results show the current cross-border payment habits of the Dutch and provide insight into the motives underlying their current payment behaviour and into the hurdles consumers are currently experiencing. The results of this study may be useful to central bankers and policy makers examining to what extent European consumers may benefit from SEPA, how SEPA may change consumers' payment behaviour and which factors may persuade them to start using the new European payment instruments once SEPA has become a reality. As far as we know, this is one of the first studies focusing on these topics. In March 2007, on behalf of MasterCard, KRC Research conducted a survey across six European countries on current domestic debit card usage and on people's awareness, knowledge and attitudes regarding SEPA. Other recent studies about consumer payment behaviour concerned domestic payments at the point-of-sale (Bounie and François for France, 2006, GfK/Currence, 2007 and Jonker, 2007 for the Netherlands, Hyytinen and Takalo, 2004 for Finland, Van Hove *et al.*, 2005 for Belgium, Stavins, 2001 and VISA 2006, for the USA). These studies also discuss the influence of socio-demographic factors on the willingness to use electronic payment instruments, such as gender, age, income and educational level. Studies on remote payment behaviour seem to be scarce in the existing literature.

One of the first academic studies on the demand for money was conducted by Keynes. In his liquidity preference theory (see e.g. Mishkin, 2000, for a description of Keynes' model) he distinguished three motives for holding money, namely the transaction motive, the precautionary motive and the speculative motive. The transaction motive refers to money needed to make regular, known payments, the precautionary motive to irregular, unplanned payments and the speculation motive to holding money as a store of value. Speculative demand for money is negatively related to the interest rate and seems to be less relevant for this study than the other two motives. Baumol (1952) and Tobin (1956) developed theoretic inventory money demand models and introduced the view that there are opportunity costs involved in holding currency for transactions. The theoretical models and their outcomes provide a useful framework for explaining possible differences in cash usage. Uncertainty about card acceptance may, for instance, result in a higher demand for cash due to precautionary reasons.

Pricing differences may also explain national differences in payment instrument usage. The increasing use of payment cards and, perhaps even more important, a series of antitrust cases involving the cards market, have given rise to a growing number of payment studies on two-sided markets (see e.g. Baxter, 1983 or Rochet and Tirole, 2004). When a purchase is made in a shop, there is one demanding party, the customer, and one supplying party, the merchant. The execution of the payment, when a payment service is actually purchased, has two demanding parties, because both the customer and the merchant request execution of the payment. Markets for such products and services are called *two-sided markets*. Other examples are magazines (readers and advertisers), or the Yellow Pages directory (consumers and businesses). This two-sided nature comes with two prices and the

supplier of the payment services, usually a bank, needs to get both customers and merchants 'on board' by setting prices in such a way that both customers and merchants want to purchase the payment service. Externalities play an important role in setting the prices for both sides of the market. For both consumers and retailers the value of being connected to a card network depends positively on the participation rate at the other side of the market. Consumers are more willing to use payment cards if they are accepted by many retailers, whereas retailers will be more willing to accept them if many consumers want to pay with them. Next to the participation rate in the 'other end-user group', end-user tariffs will also play an important role in the decision whether or not to join a network. Consumers are believed to be more price sensitive than retailers (Bolt and Tieman, 2007), which may have led to skewed pricing behaviour in the payments market, with retailers paying higher tariffs than consumers. However, although skewed pricing is common in most European countries, the extent differs. The Sectoral Inquiry on Retail Banking (European Commission, 2007) revealed that retailer tariffs for debit and credit card payments vary widely across Europe. These price differences on the retail side may have resulted in participation rate differentials, which may in turn have led to differences in card usage by consumers. Yet as far as we know, no study has been conducted examining this issue. There is some evidence that consumers react to tariffs (Bolt *et al.*, 2007, Bolt *et al.*, 2008, Borzekowski *et al.*, 2007), however Bolt *et al.* (2008) show that card acceptance by retailers may be even more important.

Humphrey *et al.* (1996) stressed the importance of safety next to economic motives for holding cash. Using a cross-country study on payment behaviour, they showed that a high violent crime rate was likely to cause reduced reliance on cash and to a corresponding increase in non-cash paper instrument use. The Dutch consider debit cards as safer than cash (Jonker, 2007). However, in the past few years, Dutch media paid a lot of attention to skimming of payment cards at automatic teller machines (ATMs) and point-of-sale (POS) payment terminals. This may have made consumers more aware of the non-violent security risks associated with card payments.

The structure of this study is as follows. Chapter 2 provides a brief overview of the Dutch public's payment behaviour in the Netherlands and in other euro countries and chapter 3 discusses the data. Chapter 4 focuses on the survey results regarding the payment behaviour of Dutch consumers visiting other euro countries, and on their views regarding the usage of payment instruments abroad and in the Netherlands. Furthermore, we examine on what conditions they would use their debit cards more often when abroad. Chapter 5 discusses the survey results on how and why consumers make remote cross-border payments to private people or businesses in the euro area. We show which payment instruments are used and discuss the views of consumers on both cross-border and domestic usage of some payment instruments. Chapter 6 examines the survey results regarding the changes SEPA will bring and the willingness of Dutch consumers to make use of the possi-

bilities SEPA will offer, such as opening a bank account at a foreign bank or using new SEPA payment instruments. Finally, chapter 7 summarises the main results and concludes.

2 Payment behaviour in the euro area

This chapter describes the current payment behaviour of the Dutch in the Netherlands as well as how citizens in other euro countries make point-of-sale (POS) and remote payments. This information will be helpful in interpreting the cross-border payment behaviour of Dutch consumers.

2.1 The Netherlands

In the 1980s Dutch consumers mainly used cash and guaranteed cheques to pay in stores. In the late 1980s the debit card was introduced in the Netherlands. Consumers could use it to withdraw cash from ATMs and to pay in POS situations. From the mid 1990s onwards the debit card became increasingly popular among the Dutch for making POS payments, especially for higher transaction amounts. Recent studies on payment behaviour at the counter in the Netherlands are GfK/Currence (2007), Jonker and Kettenis (2007) and Jonker (2007). They show that the substitution process of cash by the debit card is still ongoing. Cash is still most often used where transaction amounts are low. However, the average value of debit card payments has been declining steadily. With respect to the number of payments, cash definitely outnumbers other payment instruments, although in 2004 it lost its lead on the debit card with respect to the value share in total POS payments (Jonker and Kettenis, 2007).

Payment behaviour differs per retail sector. Most POS payments are made in supermarkets. In 2006, according to GfK/Currence (2007) almost 60% of the payments in supermarkets was made in cash and about 40% was paid with the debit card. The debit card was the dominant payment instrument in the following sectors: petrol stations, clothing & shoes, public transport, home improvement centres, toys, hobbies & sports. In other sectors cash was used relatively more often. Differences in payment behaviour stem at least partly from differences in card acceptance by retailers, which is closely linked to average transaction amounts. In sectors such as specialised food shops, where transaction amounts tend to be low, many retailers only accept cash. Retailers may surcharge the use of certain payment instruments. In 2006 about 22% of debit card accepting retailers charged extra for debit card payments below a certain amount (Bolt *et al.*, 2008). Most Dutch consumers try to avoid the surcharge by paying cash when the transaction amount is

below EUR 10-15. The e-purse and credit card are mainly used in certain niche markets: the e-purse in catering, parking and vending and the credit card in department stores, petrol stations, hotels and restaurants.

The substitution process of paper by electronic payment instruments for making remote payments is in an advanced state. In 2006 there were over 2 billion electronic remote payments (direct debits and electronic credit transfers) against less than 250 million paper based remote payments (paper credit transfers and inpayment transfers). Since 2000, the use of paper payment instruments has halved. More and more households in the Netherlands have Internet access at home and this development has boosted the usage of Internet banking for making electronic credit transfers (see also DNB 2007).

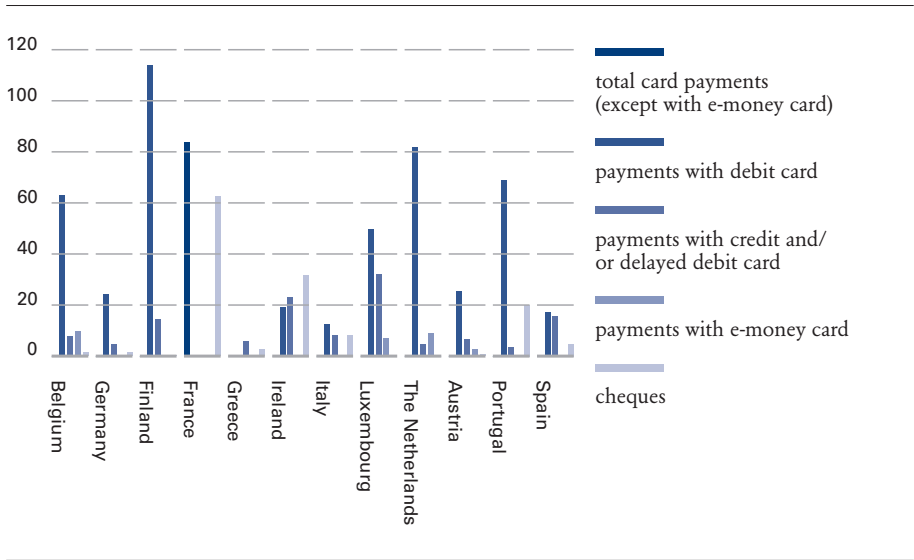
2.2 Cross-country comparisons

Heikkinen (2007) provides an excellent overview of the payment habits of citizens of the European Union, covering both POS and remote payments. Another interesting study has been done by KRC Research (2007) on behalf of MasterCard. KRC Research held a survey among debit card holders in six countries (Belgium, France, Germany, the Netherlands, Poland and the UK). The objective of this study was to examine current debit card usage and the attitudes of consumers, as well as their awareness, knowledge and attitudes regarding SEPA. The information from Heikkinen and KRC Research are relevant to our study, since it may shed light on the question whether the cross-border payment behaviour of the Dutch is closely similar to that in the Netherlands or whether they adapt their payment behaviour to the payment habits of the euro country they visit.

Heikkinen shows that payment habits vary widely across Europe. In some countries people pay frequently with electronic instruments, both at the counter and at home, whereas in other countries paper-based instruments are more commonly used. Charts 1-3 clearly depict the differences. In the majority of countries the number of credit card payments is lower than the number of debit card payments (Chart 1). Furthermore, there seems to be no clear relation between the degree of debit card usage and the degree of credit card usage. To be more specific, the debit card is relatively popular in Finland, followed by the Netherlands, Portugal, the UK, Belgium and Luxembourg. The French figure refers to both credit card and debit card payments. It shows that the French use payment cards as often as the Belgians, Dutch and Portuguese. The credit card is used relatively often in Ireland, Italy, Luxembourg and Spain. In addition cheques and e-purses are only used in a few countries.

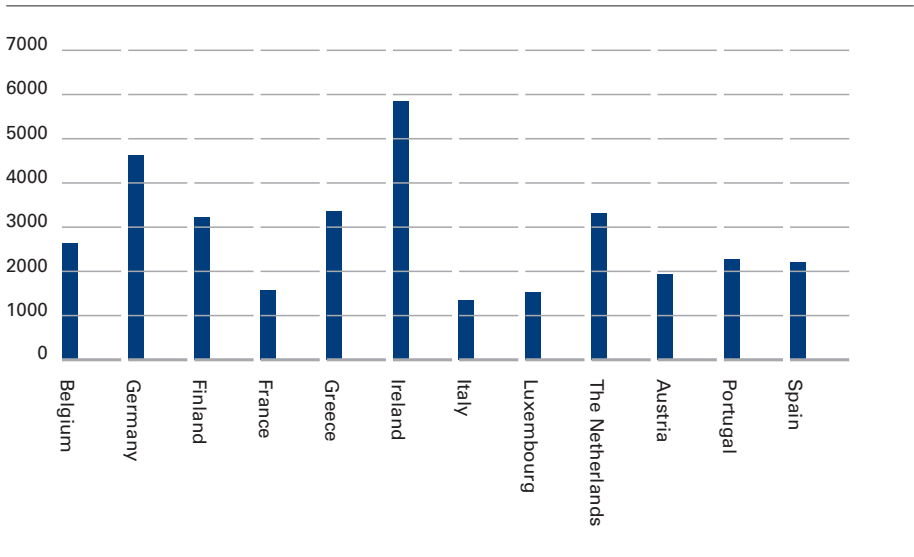
Numbers of cash payments are not registered. Therefore it is hard to make cross-country comparisons for cash usage. A rough indication might be given by the average amount of cash withdrawn from the ATM per capita per year² (Chart 2). In France, Italy and Luxembourg the average amount of cash withdrawn is relatively

Chart 1 Number of point-of-sale transactions per capita by type of payment instrument in the euro area, 2005



Source: ECB (2007) Bluebook.
Numbers include cross-border payments.

Chart 2 Average amounts of cash withdrawn from ATMs per capita in the euro area, 2005 (in euro)



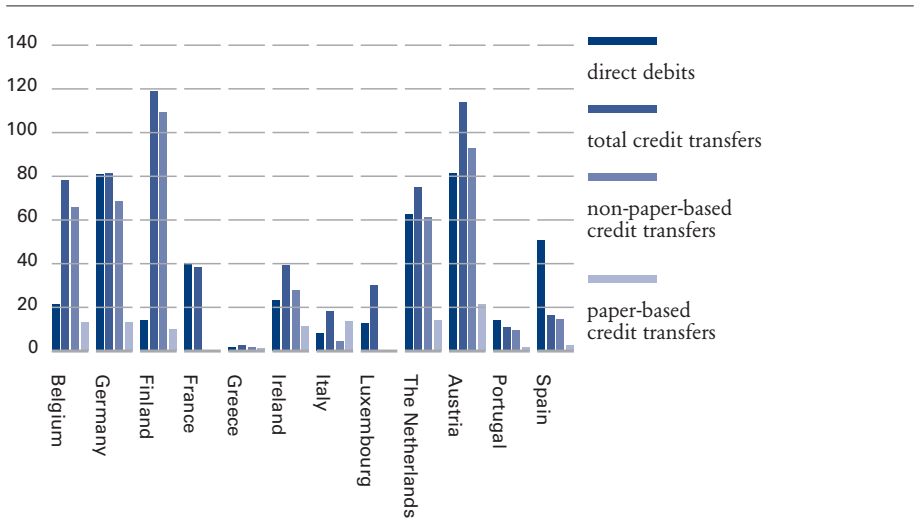
Source: ECB (2007) Bluebook.
Numbers include cross-border ATM withdrawals

low, indicating low cash usage, whereas it is relatively high in Germany and Ireland. The average amount of cash withdrawn in Greece is comparable with the average amounts in Finland and the Netherlands, indicating, once controlled for differences in price levels, high cash usage in Greece. Country studies suggest that the share of cash payments on the total number of pos payments ranges between 62% and 82% (Bounie and François for France, 2006, Bergman *et al.* for Sweden, 2007, HDB, 2002, EIM, 2007 and GfK/Currence 2007 for the Netherlands). In the cash-dominated countries this share may even be higher.

The KRC research also revealed differences in payment preferences across the six countries. Compared to the other nationalities the Belgians, French and Dutch used their debit cards most often, whereas Germans seemed to prefer it least. When asked about ease of use, security and budget monitoring features of the debit card, the six nationalities were about equally satisfied with the ease of use. However, their opinions with respect to the other two features differed. Again in Germany, people were least contented and the French turned out to be most positive.

As with pos payments, there are also large differences in how remote payments are made (Chart 3). The number of credit transfers per capita is highest in Austria and Finland, followed, at some distance, by Belgium, Germany and the Netherlands. Credit transfers are little used in southern Europe. In most countries the electronic credit transfer outnumbers its paper-based counterpart, except for Greece and Italy. The picture is somewhat different for direct debits. This instrument is used relatively often in Austria, Germany and the Netherlands, followed by France and Spain.

Chart 3 Number of remote transactions per capita by type of payment instrument in the euro area, 2005



Source: ECB (2007) Bluebook.
Numbers include cross-border payments

3 Data

The questionnaire on cross-border payments by Dutch consumers was part of the DNB Household Survey (DHS). The DNB Household Survey (formerly known as the CENTER Savings Survey) is a panel survey that started in 1993. Data are collected every year from the so-called CENTERpanel of some 2,000 Dutch households, of whom several household members may participate in the panel. The data contain information about employment, pensions, accommodation, mortgages, income, assets, debts, health and personal characteristics. The DHS data are unique in the sense that they allow studies of both psychological and economic aspects of financial behaviour. CENTERdata³ is responsible for this panel as well as for the data collection. Information about the questionnaire and the sample can be found in appendix A.

The CENTERpanel is an Internet-based panel. Data collection takes place as follows: every week, panel members fill in a questionnaire over the Internet from their home. Thus every year, every respondent answers about fifty questionnaires of up to 30 minutes each. The Internet-based data-collection may have introduced some positive selection bias towards electronic payment instruments (card payments, electronic credit transfers, etc.) in our results. Hence the results of some analyses in this report are less than perfectly representative for the entire Dutch population. However, we think that the results at least provide a clear and accurate indication of what the Dutch think about making cross-border payments, either when abroad or at home by transferring money to accounts elsewhere in the euro area. We also expect the pro-electronic bias in this study to be rather small, for two reasons. First, new panel members do not need to have access to the Internet to enrol in the panel: the selection of new panel members is done by phone. Households without an Internet connection are provided with a so-called Net.Box which enables them to answer the questions on their TV screen. This selection procedure makes the panel more representative of the Dutch population. Second, and more importantly, Internet access is nowadays widespread among the Dutch population, the elderly excepted. However, the share of people aged 55 or higher in our sample does not differ substantially from their share in the Dutch population.

4 Survey results: payments made in other euro countries

This chapter describes and discusses the payment behaviour of Dutch consumers when they visit another euro country. The following topics will be raised: frequency, reasons and destination of visits to other euro countries, payment behaviour at the counter, consumers' perceptions on paying with cash or debit card when abroad, and the prerequisites for more frequent debit card usage when abroad.

4.1 Some background information: possession of payment instruments and travel experience

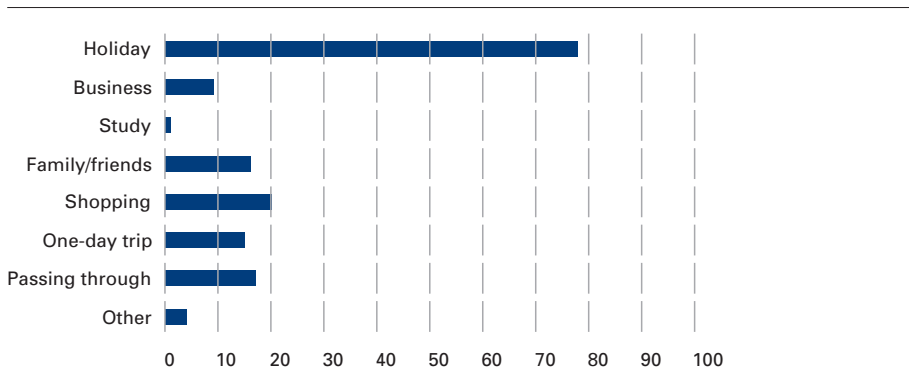
Almost every respondent (94%) in the survey has a Dutch debit card which can also be used outside the Netherlands. Their debit cards are co-branded with the international debit card scheme Maestro. About 14% have debit cards that can only be used in the Netherlands. A small majority (55%) indicated possession of a credit card. We also asked whether respondents had a debit card issued by a bank located in another euro country. About 2% of respondents answered 'Yes'. Furthermore, about 40 respondents (3% of the sample) have a bank account at a bank in one of the other euro countries. The three main reasons for having such a foreign bank account are 1) convenience for making local payments (30%), 2) convenience for receiving money, like salary or a scholarship, from a local party (23%) and 3) past employment or study in that particular country.

With respect to cross-border travelling in the euro area it turns out that about 75% of respondents travelled at least once to another euro country in 2006, most of them not more than 5 times (82%). About 6% visited another euro country more than 15 times. Respondents cited several reasons for their visits (see Chart 4). They visited other euro countries mainly on holiday (78%), and less frequently to go shopping (20%) or to visit friends or family (16%). Long stays, for the purpose of studying or doing business, were rarely mentioned.

We also asked respondents to indicate which country they visited last in 2006 (see Table 1). The neighbouring countries Germany (38%) and Belgium (24%) came in first and second, followed by two popular holiday destinations of the Dutch: France (14%) and Spain (8%). Hardly anyone had last been to Finland (0.4%). The

Chart 4 Reasons for visiting other euro countries in 2006

In percentages, people could give more than one answer



last visited country will be the central point in the remainder of this study. We asked respondents several questions about their payment experiences in that country, such as how they paid in different payment situations, why they did so and how they felt about it, since they were likely to recall their last stay best.

4.2 How the Dutch pay in other euro countries

Payment behaviour in different POS situations

Respondents were asked which payment instrument they tended to use most often in 15 different POS situations during their last stay in another euro country during 2006. Chart 5⁴ shows, for each of the POS situations, the frequency distribution of

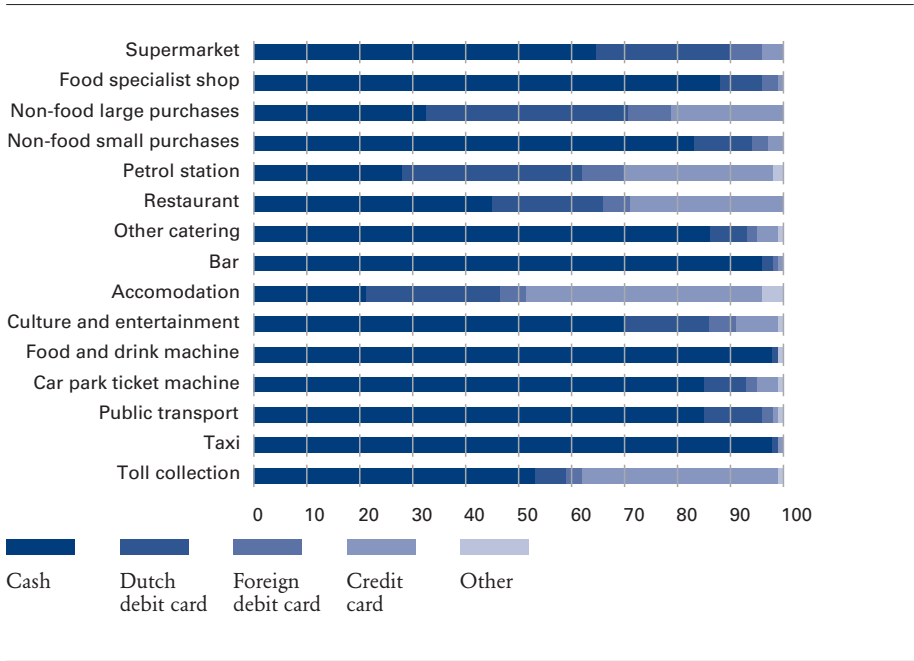
Table 1 Last visited euro country in 2006

In percentages

Austria	4
Belgium	24
Germany	38
Finland	0,4
France	14
Greece	3
Ireland	1
Italy	4
Luxembourg	1
Portugal	2
Spain	8

Chart 5 Payment behaviour by payment instrument and by pos situation in the euro area

In percentages



the four most commonly used payment instruments: cash, Dutch debit card, foreign debit card and credit card. For example, the first bar corresponds to payments made in supermarkets, where 64% of respondents usually paid cash, 25% mostly paid with the Dutch debit card, 6% mainly used a foreign debit card and 4% principally used a credit card. Cash was mentioned most often by the respondents as the most frequently used payment instrument, whereas the foreign debit card was mentioned only a few times. Cash was especially favourite in situations with low transaction amounts (such as food and drink machines). In situations where purchase amounts tend to be high (as at petrol stations or hotels), the Dutch pay more often with debit or credit cards.

In order to examine whether the Dutch pay differently when abroad or at home, we compare the results of Chart 5 with the survey results on payment behaviour in the Netherlands by Jonker (2007). The results are presented in Table 2. In every payment situation, the Dutch use cash and credit cards more often when in another euro country than at home. More specifically, they tend to use the credit card more often instead of the debit card in places such as petrol stations, non-food shops and restaurants, where purchase amounts are relatively high and they prefer cash in situations where transaction amounts are typically low. However, when abroad, cash not only serves as a substitute for the debit card but also for the e-purse that the

Table 2 Payment behaviour of Dutch consumers in the Netherlands and in other euro countries

In percentages

	The Netherlands ¹ (<i>n</i> = 2019)			Other euro countries ² (<i>n</i> = 1054)		
	Cash	Debit card	Credit card	Cash	Debit card	Credit card
Supermarket	31	67	0.1	64	25	4
Specialty food	79	19	0.2	88	8	1
<i>Non-food purchases</i>						
Large purchases	13	83	3	32	38	21
Small purchases				84	11	3
Petrol station	11	66	7	28	34	28
Pub/Bar				96	2	1
Restaurant/ Other catering	61	27	12	45	21	23
Food & drink machines	87	3	-	97	1	1
Car park ticket machines	59	4	1	85	8	4
Public transport	46	48	0.2	85	11	1

¹ Respondents could choose cash, Dutch debit card, e-purse, credit card or tank/loyalty card (e-purse and tank card usage are not presented in this table).

² Respondents could choose cash, Dutch debit card, foreign debit card, credit card or cheque (foreign debit card and check usage are not presented in this table).

Dutch often use in the Netherlands to pay for parking tickets or candy/drinks from vending machines.

The cross-border payment behaviour of the Dutch depends strongly on the country⁵ visited (see tables BI-BII in appendix B). The payment behaviour of the Dutch in Belgium, Germany, Luxembourg and, to a lesser extent, Austria, turns out to resemble most closely that in the Netherlands, with relatively high cash and debit card usage. When in France, Italy or Spain, the Dutch use credit cards relatively often compared to when visiting other euro countries. Cash usage is also relatively high in Spain and especially in Greece. In Portugal cash is also dominant at points-of-sale where transaction amounts are relatively high. However, a large minority of 20-30% indicated to use their debit or credit cards as well in these situations. Although it is hard to compare the payment behaviour of the Dutch in other euro countries with the common payment behaviour in those countries, the results indicate that the Dutch copy the countries' payment habits. The next sec-

tion will shed some light into the reasons underlying the payment behaviour of Dutch consumers in cross-border pos situations.

Reasons for payment behaviour

Respondents were asked to explain their favourite choice of payment instrument in particular pos situations. They could mention their two most important reasons. Their answers are summarised in Table 3. When abroad, the most often cited reason for paying in cash is the small size of the transaction amount (59%). Respondents also used cash because it was the most convenient (46%) or the quickest (45%) way to pay. Only a few respondents indicated that they used cash because they were not sure whether the retailer accepted debit cards (13%) or because the debit card was not accepted (5%). This result was somewhat surprising, as we expected the limited cross-border debit card acceptance to be an important reason for the low cross-border usage of the debit card.

The main reason to use the debit card was that it was the quickest way to pay (49%), followed by its ‘cash saving’ aspect (40%). Respondents also stated that they believed it is the safest payment instrument of all (30%). This motivation was first put forward by Humphrey et al. (1996).

Two of the three main reasons for paying with the debit card, saving cash and speed, were also mentioned for using the credit card. Another often cited reason is the possibility to delay the payment (32%). As with cash, we thought that people might have used the credit card because the debit card was not accepted or because of uncertainty about its acceptance by retailers. However, these reasons were mentioned by only 6% and 8%, respectively, of the respondents. The large share of people that use payment cards in order to save cash is also a rather striking result. It suggests that people partly use payment cards because of precautionary reasons: some travellers pay with a payment card just in case these cards may not be accepted

Table 3 Most-cited reasons for using cash, Dutch debit cards or credit cards

In percentages

	Cash		Debit card		Credit card	
Reason 1	Small amount	59	Fast	49	Save cash	37
Reason 2	Convenient	46	Save cash	40	Fast	33
Reason 3	Fast	45	Safe	30	Delay payment	32

Explanation: The reasons given were cited by at least 10 panel members. Percentages represent respondents citing the reason given as a share of total respondents who usually pay with a particular payment instrument at a particular location.

in future situations where cash turns out to be the only accepted means of payment. A (perceived) low ATM density in foreign countries may play a role here too, as well as the uncertainty about where to find an ATM in an unknown environment.

Who pays how?

Personal characteristics, the country in question and the type of point-of-sale may influence the way the Dutch pay at home and abroad. We have used some standard background characteristics of the respondents, together with the sector in which the payments were made and country dummies, to examine what factors influence people's cross-border payment behaviour, using probit regression models (see e.g. Greene, 1993 for a discussion of binary choice models). The results, together with earlier results on payment choice in the Netherlands (Jonker, 2007), can be helpful in understanding the payment preferences of the Dutch when abroad. We distinguish three groups of payers: (1) cash payers, (2) frequent debit card users and (3) frequent credit card users⁶. In the sample there are 227 respondents who usually paid cash in every POS situation, 292 frequent debit card users and 175 frequent credit card users. 26 respondents were both frequent credit card and frequent debit card users. Three probit regressions were estimated, one for each group of payers. Table C.1 in appendix C shows both estimated coefficients as well as marginal effects dF/dx ⁷. Note that some differences between Jonker (2007) and this study may stem from selection effects: we can only observe the cross-border payment behaviour of people who stayed in another euro country in 2006, whereas all respondents can report their payment habits at home.

The estimation results show that when abroad, women tend to pay more frequently by debit card than men, whereas men use credit cards relatively often. The debit card results are in line with the findings for card usage in the Netherlands. The difference in credit card usage is much more pronounced in other euro countries than in the Netherlands. This may stem from people frequenting other POS locations when abroad than when at home (they pay more often in hotels and restaurants, at toll booths etc.) and probably also because of higher credit card acceptance abroad. Remarkably, there are no significant gender effects for cross-border use of cash, whereas at home men turned out to pay in cash relatively more often.

Age also has a significant effect on how people pay abroad. People aged 34 or younger have a lower probability of being 'cash-only payers' than people aged 54 or over. The size of this effect is comparable with the domestic effect. However, cross-border and domestic effects on card usage differ. When abroad young people use the debit card significantly more often, whereas in the Netherlands, age does not have an impact on debit card usage. Furthermore, age seems to play no significant role regarding cross-border usage of credit cards, whereas it positively affects domestic usage.

Income does affect cross-border payment behaviour. It has a positive effect on credit card usage and a negative impact on cash usage. The magnitude of the former effect is quite large: it is three times as large as the domestic marginal effect. Educa-

tional effects on the other hand are less pronounced. In the Netherlands, cash usage is relatively high among people of relatively low educational levels whereas frequent debit card users often have a high educational level. These patterns are not visible in cross-border usage. They may be picked up by the income variable, which has a stronger impact abroad than domestically. Note also that the results for education only hold under the assumption that income is fixed. However, income generally rises with educational level.

There are some significant country effects, as well as ‘reason for stay’ effects. The estimation results clearly confirm the picture emerging in Chapter 2. France is a typical card country. With respect to cash, the results clearly confirm that cash is the dominant payment instrument in Greece. Respondents who visited it have a 28 percentage points higher probability of being classified as an ‘always cash payer’ than those who had been to Germany. With respect to the debit card, people who stayed in Belgium had a significantly high chance of being classified as a frequent debit card user. This is a plausible result since the Belgians themselves use the debit card much more often than the Germans.

People’s cross-border payment behaviour may also be related to the reason why they went abroad. Unfortunately, the individual effects may be somewhat clouded, because respondents could state more than one reason. For instance, they may have combined a business trip with a one-day trip or a family visit. The estimation results indicate that people on holiday are significantly less often ‘cash-only payers’ than business travellers. An explanation might be that the former group has plenty of opportunities to spend money in all kinds of payment situations (recreation, toll, restaurant, food and non food shops, supermarkets, etc). As a result, they have a higher probability of paying some other way than cash in at least one payment situation. In addition, they generally spend more time abroad than business travellers. Like those who went on a one-day trip, holidaymakers turn out to be less often classified as frequent credit card users than business travellers. The explanation for this finding also lies in the limited number of POS situations that people visit when travelling for work. Business travellers often only pay for a hotel room, dinners and transport, and perhaps for some additional purchases at airports, train or petrol stations. The majority of these POS locations are typical credit card locations. In addition, the possession of a company credit card might play an important role here as well. Finally, the results suggest that respondents who went shopping in or who were just passing through another euro country are more frequent debit card users than people on a business trip.

4.3 Appreciation of different payment instruments

Knowledge about consumers’ appreciation of the different payment instruments (both when used abroad and at home) might help policymakers to define suitable policies to encourage the use of the SEPA debit card. This section discusses consum-

ers' appreciation of cash (the dominant payment instrument) and the debit card, in terms of acceptance, ease of use and safety. In addition, we will discuss the aversions of dissatisfied consumers. Respondents indicated their appreciation on a 7-point scale (see Table 4). On this ordinal scale, a score of 1 indicates 'not satisfied', 4 stands for a neutral position or 'sufficient' and 7 means 'highly satisfied'. The aspects acceptance, ease of use and safety⁸ were selected, as they determine to a large extent whether and how frequently consumers use a particular means of payment when abroad.

Consumers gave (very) high ratings to both cash and the debit card for usage in the Netherlands and elsewhere in the euro area. The average ratings are all significantly above 4. The debit card received significantly higher ratings for usage at home than when used in other euro countries. The difference was largest for card acceptance (6.3 versus 5.4). The respondents rated cash usage in the Netherlands and in the other euro countries almost equally. Remarkably, however, they seem to be slightly more satisfied with the safety and ease of use of cash outside the Netherlands than at home. Perhaps because they perceived the cross-border usage of payment cards as more cumbersome or less safe.

Table 5 shows the ratings for debit card usage in individual euro countries. Again all ratings lie significantly above 4, except those for Finland (caused by the small number of respondents that visited this country) and for card acceptance in Greece. The ratings for the Netherlands are higher than for the other euro countries. The differences between the different euro countries are limited, except for Greece, which received considerably lower ratings. The intensity of debit card usage in a country and its ratings correlate mildly: the southern European countries where debit card usage is relatively low were given fairly low ratings compared to the other countries.

In addition to average appreciation, we also paid attention to the share of panel members who gave negative scores (see Chart 6). The share of dissatisfied respondents varies from 1.4% (debit card's safety and ease of use at home) to 12.4% (debit

Table 4 Average appreciation of cash and the Dutch debit card

	Paying in cash in...		Paying with the Dutch debit card in...	
	the Netherlands	other euro countries	the Netherlands	other euro countries
Safety	5.7 (1.3)	5.8 (1.2)	6.1 (1.0)	5.9 (1.1)
Acceptance	6.3 (1.0)	6.3 (1.0)	6.3 (0.9)	5.4 (1.5)
Ease of use	5.8 (1.3)	6.0 (1.2)	6.4 (0.9)	5.8 (1.2)

Standard deviations are in brackets

Table 5 Average appreciation of the Dutch debit card by euro country

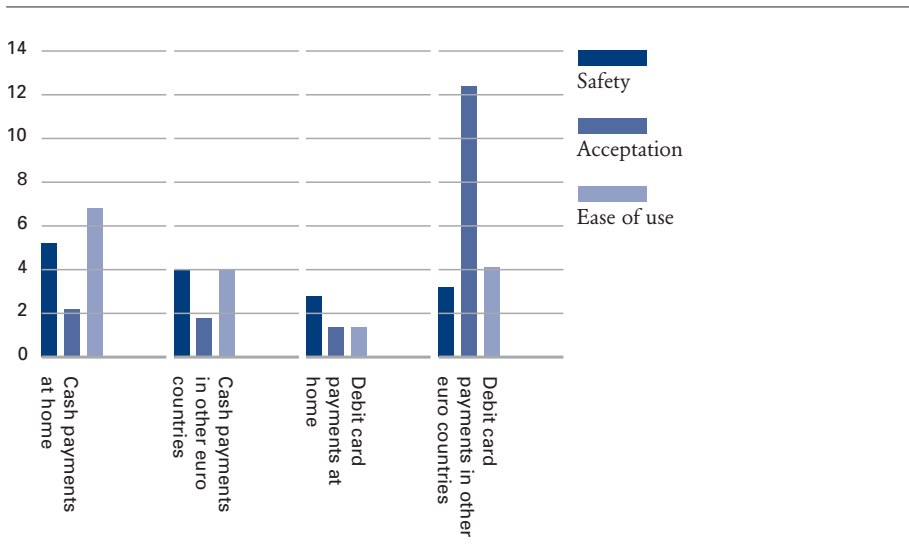
Country	Safety	Acceptance	Ease of use	Frequency
The Netherlands	6.1* (1.0)	6.2* (1.0)	6.3* (0.9)	1407
Belgium	5.8* (1.1)	5.4* (1.4)	5.9* (1.2)	254
Germany	6.0* (1.0)	5.3* (1.5)	5.8* (1.2)	403
Finland	6.0 (1.4)	6.0 (1.4)	6.5 (0.7)	4
France	6.0* (1.0)	5.5* (1.4)	6.0* (1.0)	142
Greece	5.1* (1.5)	4.7 (1.9)	5.0* (1.8)	32
Ireland	5.9* (0.8)	6.3* (1.1)	5.3* (1.0)	10
Italy	5.9* (1.1)	5.4* (1.7)	5.8* (1.4)	45
Luxembourg	6.1* (0.9)	5.7* (1.6)	6.1* (1.1)	15
Austria	5.8* (1.4)	5.4* (1.6)	5.6* (1.3)	44
Portugal	5.6* (1.1)	5.0* (1.6)	5.5* (1.3)	17
Spain	5.7* (1.1)	5.4* (1.4)	5.6* (1.4)	89

* significantly higher than 4 at a significance level of 1%

card’s acceptance in other euro countries), indicating that the Dutch are least satisfied with the acceptance of the debit card in other euro countries. About 60% of the respondents who gave an insufficient rating on this aspect did so because their debit

Chart 6 Dissatisfaction with cash and debit card usage at home and in other euro countries

In percentages



card was not accepted by many retailers or because it was not clear to them whether the retailer would accept it. A third problem concerned the language barrier. 14% of respondents found it difficult to ask retailers whether they would accept the Dutch debit card. This problem might be easily solved, for example with logo stickers on shop windows indicating which card brands are accepted.

The findings regarding the perception of cross-border debit card acceptance emphasise the importance of network effects. The Dutch are limited in their cross-border card usage because many retailers do not accept the Maestro scheme. Here SEPA might bring improvement for consumers if retailers are going to accept *all* major card brands or if Dutch consumers take cross-border brand acceptance into account when choosing a payment package. Limited card acceptance really seems to be a problem. People sometimes even use their payment cards in order to save cash (section 4.2). Moreover, as will be discussed in section 4.4, large amounts of cash are brought along from home. This indicates that the precautionary motive of holding cash and of using payment cards plays an important role in cross-border payment behaviour. It also suggests that the opportunity costs of holding large amounts of cash outweigh the payment problems experienced when abroad.

4.4 Bringing along cash from home

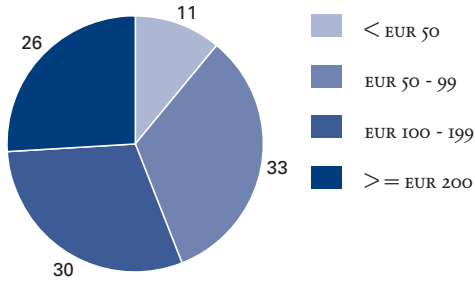
The average amount of cash that the Dutch bring along when visiting another euro country shows that they leave home well prepared. About 1,000 of the 1,407 respondents who went to another euro country in 2006, indicated to have mostly paid in cash in at least one POS situation. 70% of them had brought along cash from the Netherlands and a similar percentage had withdrawn money from a foreign ATM. Other possibilities to get cash, such as borrowing from family members or going to a bank, were hardly mentioned. The amount of cash that these 707 respondents had brought from the Netherlands was quite substantial. About 26% had taken more than EUR 200, whereas only one-ninth had less than EUR 50 in their purses when crossing the border (see Chart 7).

The 707 respondents who had brought cash with them were asked to indicate the two most important reasons for doing so. About 72% of them had brought cash in order to have enough during the first days of their stay without having to look for an ATM. 21% wanted to have enough cash for their entire stay. About 49% had brought cash in case other payment instruments would not be accepted. Bringing cash in order to be sure one has enough and paying with payment cards in order to save cash, seem to share the same background: many Dutch consumers feel a bit uneasy about whether they will be able to get cash easily when abroad and are not sure about the cross-border acceptance of their Dutch debit card.

In order to examine which people take a lot of cash with them, we have estimated an ordered probit model explaining the amount of cash taken from home (regression results can be found in table C.2 in appendix C). It turns out that people

Chart 7 The amount of cash brought from the Netherlands

In percentages



aged 35 and over bring along significantly more cash than younger people. This finding is in accordance with the age results found in section 4.2 with respect to cash and debit card usage. People who have a partner also take significantly more money with them than singles. Probably because they bring along cash for two or more. Furthermore, people who went abroad for holiday purposes and people who were en route to a non-euro country took along more cash compared to people on a business trip. Probably because they were going away for a longer period, because their travelling time was longer or because they spent relatively more money compared to business people. Finally, the country of destination seems to matter. People who went to Spain or to one of the four least visited countries (Finland, Italy, Luxembourg or Ireland) brought along relatively large amounts of cash compared to those visiting Germany. Remarkably, despite the high cash usage in this country, people who went to Greece did not take along significantly more cash.

4.5 Encouraging debit card usage in the euro area

The way people pay affects the social costs of the retail payment system. This holds for both domestic and cross-border payments. Several cost studies show that an increase in the number of debit card payments at the expense of cash will increase the cost efficiency of the payment system. Brits and Winder (2005) revealed that social welfare would be improved if all cash transactions of EUR 11.63 and more were substituted by debit card transactions. For Belgium a break-even point of EUR 10.24 (NBB, 2005) has been found whereas Bergman *et al.* (2007) using 2002 cost data for Sweden including both social *and* private costs, found a break-even point at EUR 8. Currently, these break-even points may be even lower due to the declining processing costs of debit card payments. These results are also likely to hold for cross-border POS payments, although the break even-point will be higher: the costs of domestic and cross-border cash payments may be similar, but cross-border debit card

payments are likely to be more costly than domestic card payments because of higher processing costs. However, with the introduction of SEPA, the processing costs of cross-border debit card payments are expected to decline as a result of increased competition and scale economies.

To gain more insight into how the Dutch could be encouraged to pay more often by debit card (rather than cash or by credit card) in other euro countries respondents were asked under what conditions they would be willing to do so. Respondents could rate several conditions on a 7-point scale (1= totally disagree, 4= neutral, 7= totally agree). Table 6 presents the average ratings for each condition, ordered by average rating. The most cited condition for using the debit card more often is an increase in acceptance by foreign retailers. Almost two-third of respondents agreed with this condition. This indicates that if the introduction of SEPA debit cards leads to a higher acceptance by foreign retailers, cross-border debit card usage might sharply rise. Also safety measures, such as replacement of the magnetic strip by a chip or an easier way to block the card when abroad, might encourage Dutch travellers to use their debit card more often. Some of these safety conditions will be fulfilled in a few years' time when the EMV chip has replaced the magnetic strip on debit cards and when the signature has been replaced by a personal identification code. However, to what extent the Dutch will in fact increase debit card usage is uncertain: section 4.3 showed that the respondents are already well-satisfied with the safety of cross-border debit card usage, indicating that at present, safety is not a hurdle at all. The high rating for the safety conditions may merely reflect the high value respondents attach to safety levels. At the bottom of the list we find 'surcharging credit card payments' with an average rating of 3.3. Only 26% believed that they would use their debit card more often if credit card payments were surcharged. In reality credit card surcharges might have a higher impact than these

Table 6 How to encourage cross-border debit card usage?

I would use the Dutch debit card more often in other euro countries if...	Avg. rating (sd)	% agree (>4)
... I could use the debit card in more shops	5.2 (1.8)	62
... the magnetic strip were replaced by the safer chip	5.0 (1.9)	58
... it became easier to put a stop on my debit card when abroad	4.8 (2.0)	53
... the signature were replaced by a PIN code	4.8 (2.0)	46
... it became more difficult to copy the PIN code at shops	4.6 (2.0)	51
... I travelled abroad more often	4.4 (2.1)	46
... the text on the payment terminal were in Dutch	3.8 (2.0)	34
... the retailer surcharged credit card payments	3.3 (2.1)	26

results suggest. In the Netherlands some retailers surcharge debit card payments below transaction amounts of EUR 10-15. This practice seems to have a clear steering effect on consumers' payment preference. Results from a consumer survey (Bolt *et al.*, 2008) show that many consumers pay cash instead of by debit card where retailers surcharge debit card payments.

5 Survey results: remote payments made from the Netherlands to other euro countries

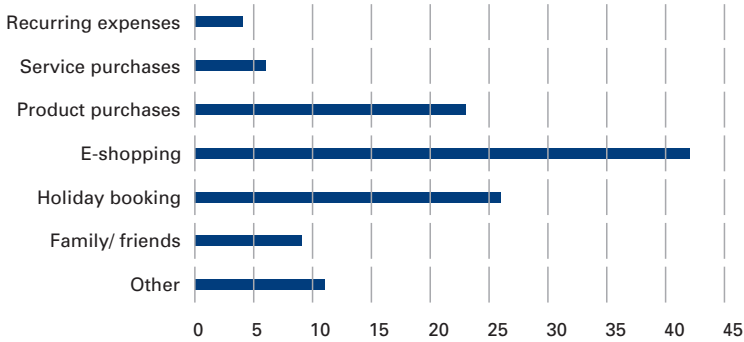
In addition to point-of-sale payments made abroad, money can also be transferred to other euro countries through remote payments. Remote payments are transactions where the payer and payee are in different locations. This chapter presents the results with respect to Dutch consumers' behaviour and perceptions regarding remote payments to other euro countries. We start by drawing the general picture regarding remote payments made by Dutch consumers to other euro countries in 2006, discussing how often Dutch consumers transferred money to other euro countries and why, which countries money was transferred to and some characteristics of the consumers who made these payments. Next, we analyse the payment behaviour in more detail: what payment instruments are used for making cross-border euro payments, and why? Finally, we take a look at people's appreciation of the safety, ease of use, cost and speed level of Internet banking, paper credit transfers and direct debits. The chapter concludes by discussing possible ways in which the use of Internet banking and direct debits for cross-border payments may be encouraged further.

5.1 Transferring money to other euro countries: how much, where to, why and who?

The results reveal that fund transfers to other euro countries by Dutch consumers remained very limited in 2006. About 25% of the 1,407 respondents made at least one remote payment to another euro country in 2006. The main reasons for making such payments are presented in Chart 8. It shows that more than 40% of the remote payments were made in connection with Internet purchases, followed by holiday bookings and post-payments of product purchases. In the majority of cases, money was transferred to one of our neighbouring countries Germany or Belgium: more than half the respondents, 52%, indicated they made their last cross-border euro payment to Germany, followed by Belgium (22%), France (11%) and Austria (6%). The personal characteristics of those who made cross-border remote payments were examined through a probit regression analysis (see e.g. Greene, 1993 for a discussion of binary choice models). This could be helpful in understanding consumers' pay-

Chart 8 Main reasons for transferring money to other euro countries

Percentages respondents



Note: Because respondents were able to indicate more than one reason, the total sum exceeds 100%.

ment behaviour and might shed light on which consumer segments will be directly affected by the realisation of SEPA. The results of the regression are summarised in Table c.3. It shows the estimated coefficients as well as the marginal effects (dF/dx). First, gender seems to play an important role. The marginal effects show that women have a 12% point lower probability of making remote payments to other euro countries than men. In addition, the negative signs and relatively high significance of the income variables indicate that consumers in the highest income category tend to transfer money abroad more often. Educational levels also have a significant impact on the probability that one will make cross-border remote payments: the higher a person's level of education, the higher the probability they will transfer money abroad. Finally, consumers living in border regions tend to transfer funds more often to bank accounts outside the Netherlands.

In sum, men in the highest income and education categories who live in a border region have the highest probability of making remote payments to other countries within the euro area. This particular group of consumers is therefore most likely to be the first to be affected by the introduction of the SEPA direct debit and SEPA credit transfer.

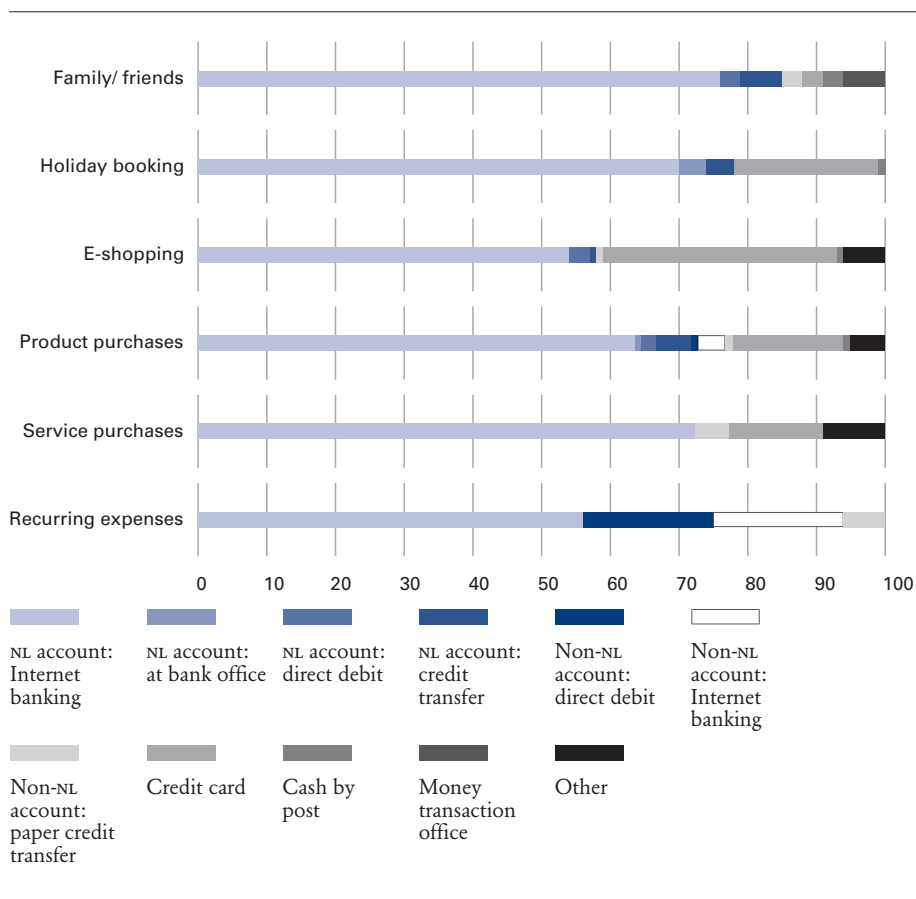
5.2 Transferring money to other euro countries: how and why?

Respondents were asked which payment instrument they tended to use for each of the reasons listed in Chart 8. Whereas the possibility of a cross-border direct debit does not exist to date, it was presented in the survey as a possible answer, because in practice consumers are sometimes offered a possibility closely akin to cross-border direct debits. These are domestic direct debits to a Dutch bank account from

which the money is transferred across the border by a credit transfer. Because these payments are looked upon by consumers as cross-border direct debits, they will in this study be treated as cross-border direct debits. The results are presented in Chart 9. More than half of all remote payments were made from Dutch bank accounts through Internet banking. So irrespective of why a remote payment is made, the electronic credit transfer seems to be the most favoured payment instrument. This strong preference is not typical for cross-border payments, but is also visible in domestic payment behaviour. The share of electronic payments in the total number of remote payments in the Netherlands continued to increase in 2006, especially because of the growing usage of Internet banking. In 2006, more than 65% of the Dutch population between 12 and 74 years of age with an Internet connection settled (some of) their remote payments through Internet banking. A 2006 study by DNB on payment preferences and behaviour of Dutch consumers regarding Internet

Chart 9 Payment instruments used by reason

Percentages of remote payments



purchases revealed that the Dutch preferably pay their Internet purchases via Internet banking (DNB, 2007). Secondly, a large share of the remote payments to other euro countries were made by credit card. For recurring expenses, such as rent, gas, water and electricity of a second home abroad, people appear to use non-Dutch bank accounts, using direct debits, Internet banking or paper credit transfers. Other instruments, such as paper credit transfers or direct debits from a Dutch bank account, bank cheques or sending cash in the post, are rarely used.

People can have different reasons for choosing a particular payment instrument. Therefore, respondents were asked to explain their preferences. The main reasons for making electronic transfers using Internet banking, paper credit transfers or credit cards are summarised in Table 7. Many respondents indicated that they preferred Internet banking because of the speed of the payment process. Another frequently cited reason was that respondents invariably used Internet banking when transferring money to other accounts. Also, those who still use the paper credit transfer seem to do so mainly out of habit. Another reason why respondents used paper credit transfers relates to the perceived safety of this instrument; a large share of the paper credit transfer users regarded this instrument to be the safest payment means. The most often cited reasons for using the credit card are its perceived safety and the fact that it was the only payment instrument accepted. This illustrates the special nature of the market for payments: it is a two-sided market in which the actual payment behaviour is determined not only by the choice of the consumer, but also to a large extent by that of the creditor. Irrespective of the needs and preferences of the consumer, actual payment behaviour is limited by the possibilities offered by the creditor.

5.3 Appreciation of different payment instruments

The respondents were asked to indicate their appreciation of direct debits, Internet banking and paper credit transfers with respect to safety, ease of use, cost and speed. These aspects are seen as important considerations in deciding what instrument to

Table 7 Most-cited reasons for using Internet banking, paper credit transfers and the credit card

Percentages of respondents that agree

	Electronic credit transfer		Paper credit transfer		Credit card	
Reason 1	Speed of payment process	52	Habit	47	Speed of payment process	44
Reason 2	Habit	49	Safety	41	Only accepted means of payment	33

use. In order to examine whether there is a difference between domestic and cross-border payments, the respondents had to indicate their appreciation of domestic remote payments as well as of remote payments to other euro countries. They were asked to score the different aspects on a seven-point scale (1 for very dissatisfied, 4 for neutral and 7 for very satisfied).

Table 8 shows that on average, consumers are satisfied with the use of direct debits, Internet banking and paper credit transfers on all counts, both domestically and for making payments to other euro countries. For each payment instrument paired t-tests were performed in order to examine whether the appreciation of the various instruments differs significantly between domestic and cross-border use. These tests showed that there are no significant differences in appreciation between domestic and cross-border direct debits. With respect to electronic credit transfers and paper credit transfers consumers do seem to perceive a difference in the levels of safety, ease of use, cost and speed: in general, respondents were more satisfied with electronic credit transfers and paper credit transfers when used for domestic payments than when used for payments to other euro countries. Regarding the speed of the payment process, cross-border euro payments do, in fact, reach the payee around 2 or 3 days later than domestic payments. Nor did the fact that cross-border payments score worse on ease of use come as a surprise to us. When transferring money abroad, the payee's International Bank Account Number and Bank Identifier Code need to be reported, which requires an additional effort from the payer. The perceived safety level, however, does not vary between domestic and cross-border payments. The same holds for the cost of electronic credit transfers and paper credit transfers: cross-border payments can be made at no additional costs, provided the payer indicates explicitly that the costs of the payment should be allocated on a shared basis. Given the results, not all consumers seem to be aware of this possibility and therefore perceive cross-border payments as being more expensive.

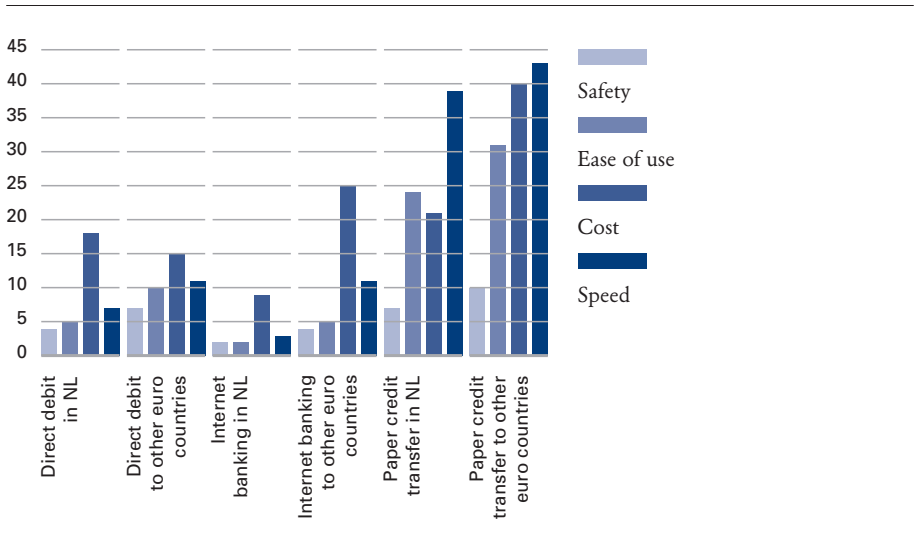
Table 8 Appreciation of payment instruments by factor and by situation

Averages and standard deviations between brackets

	Direct debit		Electronic credit transfer ¹		Paper credit transfer ¹	
	domestic	cross-border	domestic	cross-border	domestic	cross-border
Safety	6.0 (0.9)	5.7 (1.2)	6.1 (1.2)	5.8 (1.3)	5.6 (1.4)	5.3 (1.5)
Ease of use	5.8 (1.4)	5.6 (1.4)	6.3 (1.0)	5.8 (1.3)	4.7 (1.7)	4.4 (1.8)
Cost	5.2 (1.6)	5.3 (1.7)	5.6 (1.5)	4.8 (1.8)	4.8 (1.7)	4.1 (1.9)
Speed	5.4 (1.7)	5.4 (1.6)	6.2 (1.1)	5.4 (1.5)	4.2 (1.8)	3.9 (1.9)

¹ All average ratings are significantly different from each other at a 1% level.

Chart 10 Dissatisfied consumers by perception factor and payment instrument



Paired t-tests were also performed to detect differences between the remote payment instruments. Compared to the other two instruments, the electronic credit transfer is perceived as being the safest, most user-friendly, cheapest and fastest payment instrument for making payments within the Netherlands. For cross-border payments, there are no significant differences between the appreciation of electronic transfers and that of direct debits with respect to safety, ease of use, cost and speed. Compared to electronic credit transfers and direct debits, respondents were less satisfied with the paper credit transfer when used for cross-border euro payments. Apparently, this is perceived as being relatively less safe, less user-friendly, more expensive and slower.

An alternative way to detect differences in appreciation between domestic and cross-border usage is to compare the share of dissatisfied consumers by payment instrument and by factor. Chart 10 reveals that relatively many respondents are not satisfied with the ease of use, cost and speed of paper credit transfers, whether used for domestic or for cross-border payments. The dissatisfaction with respect to direct debits and electronic credit transfers centres on the costs involved. This is a remarkable finding because in reality, as has been explained, euro payments made via Internet banking do not need to involve any costs, irrespective of the country to which this money is transferred. Apparently, many consumers are not aware of this. The perception that Internet banking, especially when used for cross-border euro payments, is costly might be taken away by clear communication towards consumers about the meaning and consequences of the different cost allocation possibilities.

5.4 Encouraging the use of Internet banking and direct debits for cross-border payments

The use of paper credit transfers involves relatively high processing and transaction costs, for both consumers and banks. Therefore, the efficiency of the payment system could be improved if the use of paper credit transfers were to be further reduced in favour of electronic transfers made via the Internet. With this in mind, respondents were asked on what conditions they would use Internet banking more often for their money transfers to other euro countries. The same question was asked for direct debits. Although it is currently unclear whether cross-border use of direct debits can make a positive contribution to the efficiency of the payment system, this question could be relevant for policymakers given the expected introduction of the SEPA direct debit.

The results to these questions are summarised in Table 9. The respondents would like to use electronic transfers more often to transfer money to other euro countries if there were no charge for either the payer or the payee, if they had to make more cross-border payments and if the safety level improved. From this it can be concluded that safety and, especially, costs are important factors. Since Dutch consumers can already make cross-border electronic payments without any additional cost to either the payer or the payee when using the so-called ‘shared costs’ option, the use of Internet banking could be further encouraged relatively easily, by better informing consumers about the cost allocation options.

The majority of respondents stated they would use direct debits more frequently for their cross-border payments if the safety of this product were guaranteed and if the safety and protection levels equalled those of domestic direct debits. Easy reversal of recurring direct debit orders seems to be an important factor too. Contrary to Internet banking, costs appear to be less relevant here: an increase in the cost of paper credit transfers or credit card payments would not be a reason for people to use direct debits more often. Although, like explained in section 5.2, it is currently

Table 9 Most-cited conditions for more frequent use of electronic credit transfers and direct debits to transfer money to other euro countries

Percentages of respondents that agree

	Electronic credit transfer		Direct debit	
Condition 1	No charges for either payer or payee	65	Guaranteed safety level	63
Condition 2	Increased cross-border obligations	57	Same safety level as domestic direct debits	63
Condition 3	Improved safety level	50	Easy reversal of recurring orders	60

not possible to make use of cross-border direct debits, these results give an indication of the desires of consumers with respect to the characteristics of a cross-border direct debit. This might be helpful in view of the future SEPA payment instruments.

It is remarkable that the three main conditions on which the respondents would use direct debits more often for cross-border payments all relate to safety, since earlier results showed that on average, consumers are satisfied with the current safety level of cross-border direct debits. The same holds for Internet banking. This implies that safety plays an important role in the decision-making process of consumers. Although they positively value the current levels of safety, they believe that every effort should be made in order to eliminate any possible safety risk.

6 Towards a single euro payments area

This chapter presents the survey results regarding the expected payment behaviour of Dutch consumers once SEPA has been realised. The knowledge and preferences regarding the International Bank Account Number and the Bank Identifier Code are discussed and we take a closer look at whether and on what conditions Dutch consumers would migrate to the new SEPA payment instruments. Knowledge of consumers' perceptions and desires might help policymakers in defining effective policies to encourage a smooth and successful SEPA migration.

6.1 IBAN and BIC: knowledge and preferences

When transferring money abroad, either via a paper or an electronic credit transfer, the International Bank Account Number (IBAN) and the Bank Identifier Code (BIC) have to be used. From 2008 onwards these codes will have to be used for domestic payments as well. The survey results show that the majority (58%) of the respondents appeared not to know the meaning and purpose of these codes. Once they were informed about it, more than 67% indicated they had no idea where to find them. One third would like to find the codes on the Internet banking site of their bank, 25% on the bank statements, 13% on their debit card and 17% answered they would call and ask their bank. These results emphasise that specific communication is needed to inform Dutch consumers about the meaning and purpose of the IBAN and BIC, since they will play an important role in the near future when SEPA is a reality.

6.2 Termination and opening of foreign euro bank accounts

Within the euro area it will no longer be necessary to have bank accounts at different banks in different euro countries. Since national differences will disappear, a single euro bank account will be sufficient for making and receiving payments all over the euro area in the same way and on the same conditions as in the home country. This implies that consumers could terminate their current foreign euro accounts or could decide to close their current Dutch account and open a new one at a local bank in another euro country. It is interesting in this context to analyse

Table 10 Most-cited reasons for opening a new bank account in another euro country

Percentages of respondents that agree

Reason 1	Higher interest rates on saving account	51
Reason 2	Long stay abroad	34
Reason 3	Interest rates on current account	27
Reason 4	Lower bank fees	25

what factors play a role in deciding whether to terminate and/or open a new bank account. The respondents who had a foreign euro bank account were therefore asked whether SEPA would be a reason for them to terminate these accounts. Only a small share (10%) answered affirmatively. The majority stated they would not give up their current accounts or that they were not clear about the matter. In addition, the respondents were invited to indicate their main reasons for opening a new bank account in another euro country. The results show that behaviour on this point is mainly determined by price factors. More than half the respondents indicated they were willing to open a euro account with a non-Dutch bank if it offered higher interest rates on its saving accounts. In addition, a quarter of the respondents would consider such a move if interest rates were paid into their current accounts or if bank fees were lower. Next to price related factors, one other important stated reason was a longer stay in the other country.

6.3 Migration to the SEPA debit card

Once the Single Euro Payments Area has taken shape, European consumers will be offered so-called ‘SEPA-compliant debit cards’, with which they will be able to make payments and cash withdrawals all over the euro area. Respondents were asked about their interest in the SEPA debit card. The results show that if consumers had to choose between their current PIN debit card and the SEPA debit card, various factors would play a role (see Table 11). First, the annual card fee. Almost half the respondents stated they would switch to the SEPA debit card if the annual card fees were lower. Annual fees are currently relatively low compared to other European

Table 11 Most-cited reasons for switching over to the SEPA debit card

Percentages of respondents that agree

Reason 1	Lower annual card fee	47
Reason 2	Higher acceptance abroad	37
Reason 3	Lower sensitivity to fraud	35

countries (CapGemini/ING/EFMA, 2005). However, they have been rising during the past three years. This might explain the respondents' price-consciousness with respect to payment services. Another relevant factor seems to be cross-border acceptance of the debit card. 37% of the respondents would switch to the SEPA debit card if it could be used at more foreign points-of-sale than is currently the case with the Dutch co-branded PIN-Maestro card. Sensitivity to fraud seems to count as well. A relatively large share would trade in their current debit card if the SEPA version were less sensitive to fraud. The results show that for a demand-driven migration towards SEPA debit cards to take off, unaccountable price increases should be avoided. The desired increased foreign card acceptance and lower risk of fraud are issues that banks are already working on as part of their current SEPA preparations. All over Europe, banks have started to migrate to EMV standards by replacing the magnetic stripe based payment cards by cards that have a chip. In addition, within SEPA all debit card payments will have to be made using a personal identification code. Putting a signature when using your debit card abroad will belong to the past. Since the personal information stored on the chip is relatively hard to copy, the risk of fraud will be considerably reduced by the new EMV payment cards. Clear communication on the reduced risk of fraud and on the intended acceptance improvement of the new SEPA debit cards might, in combination with reasonable prices, contribute to a successful demand-driven migration towards SEPA debit cards⁹. These results correspond with the conclusions drawn in the MasterCard SEPA Consumer Survey by KRC Research (2007). This study revealed that 70% of Dutch debit card holders would think of replacing their existing debit card for a pan-European debit card with which they could pay in Europe as easily and as inexpensively as at home.

6.4 Migration to the SEPA credit transfer

The results presented in Table 12 show that price factors will play an important role in the migration towards the SEPA credit transfer. 45% of the respondents would move to SEPA credit transfers, for both cross-border and domestic payments, if no additional fees were to be charged. Lower annual bank fees and the possibility to make SEPA credit transfers via the Internet would be important motives as well. However, more than one third of the panel members would only move over to the SEPA credit transfer if the current Dutch credit transfer were no longer offered.

Table 12 Most-cited reasons for switching over to the SEPA credit transfer

Percentages of respondents that agree

Reason 1	No additional administration costs	45
Reason 2	SEPA credit transfer could be used via Internet banking	40
Reason 3	Lower annual bank fees	39

There is reason to conclude that in order for the migration to SEPA credit transfers on a demand-driven basis to succeed, current price levels will have to be maintained or even lowered, while it must remain possible to use the Internet as a payment vehicle. However, if the SEPA credit transfer does not distinguish itself from the current credit transfer, as by its functionalities or safety level, a large share of Dutch consumers is likely to stick initially to the current products.

6.5 Migration to the SEPA direct debit

In comparison with the SEPA credit transfer and the SEPA debit card, demand-driven migration towards the SEPA direct debit might be most difficult to achieve. Almost half the respondents (46%) stated that they would not move over to the SEPA direct debit, for either domestic or cross-border payments, until the current direct debit versions were discontinued (see Table 13). As in fact it will most likely be up to the collector to decide to move over to European direct debits, these results indicate that there might be a chance that Dutch consumers in that case would start switching over to other alternatives, such as paper or electronic credit transfers. Apparently, the respondents have strong reservations towards the European version of the direct debit. Despite the earlier results which pointed up considerable interest in using direct debits more frequently for cross-border remote payments, provided the current safety and protection levels are guaranteed. A possible reason for this could be that they have their doubts about the safety and protection levels of the future SEPA direct debit. In that case careful communication is required in order to convince Dutch consumers of the advantages of this European instrument. Although at a distance, the next two main reasons mentioned for switching over to the European direct debit are easier reversal of incorrect direct debits and a stop put to incorrect direct debits.

6.6 Reservations regarding the SEPA payment instruments

Although there seem to be various reasons for Dutch consumers to switch to the SEPA debit card and the SEPA credit transfer, one third of the respondents said they would not switch to these European products until the existing instruments would

Table 13 Most-cited reasons for switching over to the SEPA direct debit

Percentages of respondents that agree

Reason 1	When current direct debits are no longer offered	46
Reason 2	Easier reversal of incorrect direct debits	28
Reason 3	Stop put to incorrect direct debits	25

be discontinued. The resistance is highest as regards the SEPA direct debit. This negative attitude towards the pan-European payment instruments emphasises the need for purposive communication. In this light, probit regression analyses were performed to investigate what type of consumers are most likely not to switch to the SEPA products while the current Dutch versions are still offered. The results of the regression are summarized in table c.4, c.5 and c.6.

First, gender seems to play a significant role. The marginal effects show that women are significantly less inclined to move over to the SEPA debit card, the SEPA credit transfer or the SEPA direct debit than men. In addition, persons aged 55 and over tend to be more resistant to the SEPA payment instruments compared to persons aged 35 years and under. Income and educational level also have a significant impact. Consumers with a moderately low income and consumers with only elementary education will be more inclined to reject the SEPA debit card and the SEPA credit transfer compared to consumers with high incomes and educational backgrounds. Conversely, consumers with a university degree seem to have a more positive attitude towards the new European payment instruments. However, as expected, the more 'European-oriented' consumers who frequently visited or transferred money to other euro countries and who have a foreign euro bank account, are the ones that tend to have the keenest interest in the new SEPA products. Moreover, the border dummy seems to play a significant role in the attitude towards the SEPA direct debit as well. Consumers living in the border regions tend to be significantly more likely to switch over to this instrument. The fact that this factor only plays a significant role in the case of the SEPA direct debit may be explained by the fact that the SEPA direct debit is more than just a European version of an existing domestic product. Contrary to the perception of many consumers, it has never been possible to make cross-border payments by direct debit. The new SEPA direct debit thus offers a completely new possibility. Since consumers living in the border region already use their Dutch debit cards and credit transfers relatively often for cross-border payments, this SEPA direct debit is really something new for them. This might explain their relatively strong interest in this new pan-European instrument.

7 Conclusions

The present research study provides insight into the current payment patterns of Dutch consumers, their underlying preferences and the obstacles they perceive regarding payments made in and to other euro countries. In light of the approaching SEPA and the current efficiency discussions, it provides policymakers and market parties with handles to steer consumers towards more efficient payment behaviour and to encourage a smooth and successful SEPA migration.

The survey results show that Dutch consumers make more payments within other euro countries than towards other euro countries. When abroad, they seem to show significantly different payment behaviour from when at home. Cross the border, they use cash and credit cards more often whereas the debit card is less frequently used. Moreover, their payment behaviour strongly depends on the country visited and on the payment situation. In Belgium the Dutch pay relatively often with their debit cards whereas in Greece they mainly use cash. In France and Italy the credit card is most often used. On average, Dutch consumers seem to be satisfied with the acceptance, ease of use and safety of cash and the debit card, whether at home or abroad. Nevertheless, the Dutch value debit card usage in the Netherlands more highly than elsewhere in the euro area. The limited cross-border acceptance of the debit card is perceived as being the most important obstacle for Dutch consumers, implying that cross-border debit card usage could be encouraged if acceptance at points-of-sale in the euro area increased. This illustrates the two-sided nature of the market for payments: irrespective of the needs and preferences of the consumer, the actual payment behaviour may also be limited by the possibilities offered by the creditor.

When transferring money to other euro countries, Dutch consumers mostly use electronic transfers, followed by the credit card. For recurring expenses, however, they hold a non-Dutch bank account and use direct debits, electronic credit transfers or paper credit transfers. In general, Dutch consumers are satisfied with the cross-border use of electronic transfers and paper credit transfers. However, they perceive domestic usage of these payment instruments as being safer, user-friendlier, less costly and faster than cross-border usage. In addition, dissatisfaction with the cross-border use of paper credit transfers is relatively high. This instrument is perceived as being the least safe, least user-friendly, slowest and most expensive instrument of the three. As the use of paper credit transfers involves relatively high costs for both consumers and banks, the efficiency of the payment system could be

improved if the use of paper credit transfers were reduced further in favour of electronic transfers made via the Internet. The survey results show that safety and especially costs are key factors in promoting the use of Internet banking for cross-border payments. Since Dutch consumers can already make cross-border electronic payments without any additional costs to either the payer or the payee, provided the so-called 'shared' option is used, the use of Internet banking could be further encouraged relatively easily through improvement of consumer awareness of the different cost allocation possibilities. In addition, the results show that Dutch consumers attach great importance to safety and protection when it comes to cross-border direct debits. Unlike in the case of cross-border Internet banking, costs appear to be of less importance.

Given the important role the IBAN and BIC codes will play in the prospective SEPA, the survey results stress the need for clear communication towards Dutch consumers about the meaning and purpose of these still little known codes. Another interesting point is that Dutch consumers would consider opening a new bank account at a local bank in another euro country if the interest rates on the savings and current account were higher and/or annual bank fees were lower.

Regarding the migration to the new SEPA payment instruments, the results emphasise the need for purposive communication towards consumers. The survey results suggest considerable resistance towards the new pan-European products, especially with respect to the SEPA credit transfer and direct debit. A large share of the consumers does not see themselves switching over to these instruments until the current Dutch versions are no longer offered. Consumers who frequently travel or transfer money abroad, and consumers who live in the border regions or hold a non-Dutch bank account, seem to be most keenly interested in the new SEPA instruments. They are willing to move to a SEPA debit card if annual card fees are lower, if cross-border acceptance increases, and if the new SEPA card is less sensitive to fraud. This implies that for a demand-driven migration to SEPA debit cards to succeed, unaccountable price increases should be avoided. Furthermore, consumers should be made aware of the reduced fraud risk associated with the new EMV-based SEPA debit cards and their prospective higher cross-border acceptance. Price factors will also play an important role in the migration to the SEPA credit transfer. In order for a demand-driven migration to SEPA credit transfers to succeed, current price levels should be maintained or lowered while the possibility to use the Internet as a payment vehicle remains. However, if the SEPA credit transfer does not provide any added value compared to the current credit transfer, a large share of the Dutch consumers is likely to stick initially to the current familiar products. In comparison with the SEPA credit transfer and the SEPA debit card, a demand-driven migration to the SEPA direct debit may be most difficult to achieve. Almost half the consumers intend not to move over to the SEPA direct debit until the current direct debit is no longer available.

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Appendix A Survey and sample

The questionnaire of the survey on cross-border payment behaviour was distributed to the CENTERpanel members aged 18 or above who were responsible for the finances of their household. The questionnaire was sent to them for completion during the weekend of 23-27 February 2007. Of the 1,676 members qualifying for participation in the present survey, 1,407 respondents answered the questionnaire in full, corresponding to an 84% response rate.

The questionnaire consisted of three parts. The first part concentrated on point-of-sale payments made in the euro area, the second part on remote payments from the Netherlands towards other euro countries, and the third part focussed on the Single Euro Payments Area (SEPA) and the SEPA payment instruments direct debit, credit transfer and debit card. In the first two parts participants were asked about their usage of different means of payment in different payment situations and about their appreciation of the payment instruments in terms of acceptance, safety, speed, ease of use and the costs associated with each payment instrument, both at home and abroad. Respondents who were dissatisfied with cross-border usage were asked to indicate why. Finally, panel members were asked on what conditions they would use their debit cards more when abroad and what would induce them to use direct debits or electronic credit transfers for remote cross-border payments.

Table A.1 presents descriptive statistics on some demographic key variables for the respondents in the sample, as well as for the Dutch population as a whole. Overall, the sample represents the Dutch population fairly well, although there are some differences. Part of these differences (relatively many men, a relatively high educational level) may stem from the fact that we explicitly asked the financial head of the household to participate in the survey. The reason for this is that we expect this person to be the one who makes most cross-border payments and who usually makes the decisions about banking. Therefore, (s)he may be the first in the household to be confronted with the changes caused by SEPA.

There are 1,407 respondents in the sample, of which 54% male and 46% female. About 1.5% of the respondents are aged between 15-24, indicating a strong underrepresentation of this age cohort in the sample. However, this is as expected, since only adults (age 18 and up) could take part in this survey. As a consequence, the higher age categories are a bit larger for our respondents compared to the Dutch population. Also the average educational level of the respondents is slightly higher

Table A.1 Descriptive statistics Dutch population and survey respondents

Percentages

Variable	Population	Survey
Male	49.5	54.1
Female	50.5	45.9
Age 15-24	14.7	0.5
25-34	15.9	17.3
35-44	19.6	19.3
45-54	17.5	21.7
55-64	14.9	20.3
65 and over	17.4	20.9
Education	9.3	3.4
Primary education		
Lower vocational education	24.3	24.4
General secondary education	10.4	13.1
Intermediate vocational education	30.8	20.2
Higher vocational education	15.8	25.6
University	9.4	13.4

than that of the whole population. The sample has relatively few respondents with no more than primary or intermediate vocational education, whereas it has relatively many graduates from higher vocational education or university.

Appendix B Country tables

Table B.1 Usage pos payment instruments by pos situation in Austria

Austria (<i>n</i> =44)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	26 (63%)	27 (87%)	8 (26%)	34 (92%)	9 (26%)	17 (46%)	41 (98%)	38 (97%)	10 (27%)	20 (69%)	28 (97%)	26 (87%)	21 (84%)	16 (100%)	18 (62%)	
NL debit card	13 (32%)	4 (13%)	16 (52%)	2 (5%)	13 (37%)	12 (32%)	1 (3%)	1 (3%)	10 (27%)	5 (17%)	1 (3%)	3 (10%)	4 (16%)	1 (3%)		
Non-NL debit card	1 (2%)		2 (6%)		1 (3%)				1 (3%)	1 (3%)						
Credit card	1 (2%)		5 (16%)	1 (3%)	12 (34%)	8 (22%)	1 (2%)	14 (38%)	3 (10%)	3 (10%)	1 (3%)	1 (3%)	1 (3%)	9 (31%)	1 (3%)	
Cheque																
Other									2 (5%)							
No purchases (n)	3	13	13	7	9	7	2	5	7	15	15	14	19	28	15	

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.2 Usage pos payment instruments by pos situation in Belgium

Belgium (n=254)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	113 (61%)	140 (85%)	54 (32%)	128 (85%)	43 (24%)	86 (43%)	195 (88%)	183 (95%)	26 (17%)	96 (66%)	119 (97%)	133 (77%)	91 (83%)	63 (98%)	57 (54%)	
NL debit card	52 (28%)	18 (11%)	68 (40%)	17 (10%)	68 (38%)	47 (23%)	16 (7%)	4 (2%)	45 (30%)	31 (21%)	1 (1%)	17 (10%)	11 (10%)	8 (8%)		
Non-NL debit card	15 (8%)	6 (4%)	22 (13%)	7 (4%)	23 (13%)	15 (7%)	5 (2%)	4 (2%)	10 (7%)	9 (6%)		4 (2%)	2 (2%)	3 (3%)		
Credit card	5 (3%)		27 (16%)	3 (2%)	39 (22%)	53 (26%)	4 (2%)	1 (1%)	63 (41%)	7 (5%)		13 (8%)	2 (2%)	1 (2%)	35 (33%)	
Cheque										1 (1%)						
Other					4 (2%)		1 (0%)		7 (5%)	2 (1%)	2 (2%)	5 (3%)	3 (3%)	2 (2%)		
No purchases (n)	3	13	13	7	9	7	2	5	7	15	15	14	19	28	149	

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.3 Usage pos payment instruments by pos situation in Finland

Finland (<i>n</i> =4)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	2 (67%)	2 (100%)	1 (100%)	2 (100%)	1 (50%)	1 (50%)	1 (50%)	2 (100%)	3 (100%)		2 (100%)	2 (100%)	2 (100%)	2 (100%)	2 (100%)	1 (100%)
NL debit card	1 (33%)				1 (50%)											
Non-NL debit card																
Credit card							1 (50%)			2 (100%)						
Cheque																
Other																
No purchases (n)	1	2	3	2	2	2	2	2	1	2	2	2	2	2	2	3

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.4 Usage POS payment instruments by pos situation in France

France (n=142)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	58 (46%)	108 (89%)	29 (31%)	96 (81%)	23 (18%)	46 (37%)	113 (84%)	113 (96%)	16 (14%)	60 (64%)	84 (97%)	88 (90%)	51 (86%)	36 (97%)	53 (46%)	
NL debit card	36 (29%)	8 (7%)	29 (31%)	14 (12%)	44 (35%)	18 (14%)	7 (5%)	1 (1%)	21 (18%)	13 (14%)	4 (4%)	2 (3%)	2 (3%)	6 (5%)		
Non-NL debit card	10 (8%)	2 (2%)	4 (4%)	3 (3%)	8 (6%)	4 (3%)	1 (1%)	1 (1%)	5 (4%)	6 (6%)	1 (1%)	3 (3%)	3 (5%)	2 (2%)		
Credit card	20 (16%)	3 (2%)	31 (33%)	6 (5%)	48 (38%)	55 (44%)	13 (10%)	2 (2%)	69 (61%)	14 (15%)	1 (1%)	3 (3%)	3 (5%)	1 (3%)	53 (46%)	
Cheque	1 (1%)		1 (1%)		1 (1%)	2 (2%)										
Other																
No purchases (n)	17	21	48	23	17	17	7	25	28	48	55	44	83	105	26	

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.5 Usage pos payment instruments by pos situation in Germany

Germany (<i>n</i> =403)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	227 (65%)	237 (88%)	78 (30%)	235 (85%)	91 (28%)	128 (43%)	303 (87%)	269 (96%)	56 (22%)	166 (73%)	194 (97%)	232 (90%)	135 (82%)	117 (97%)	77 (51%)	
NL debit card	95 (27%)	22 (8%)	110 (43%)	31 (11%)	117 (36%)	73 (25%)	31 (9%)	7 (3%)	72 (28%)	35 (15%)	4 (2%)	19 (7%)	26 (16%)	2 (2%)	10 (7%)	
Non-NL debit card	17 (5%)	8 (3%)	18 (7%)	6 (2%)	22 (7%)	15 (5%)	5 (1%)	1 (0%)	12 (5%)	8 (4%)	1 (1%)	2 (1%)	2 (1%)	2 (1%)	5 (3%)	
Credit card	9 (3%)	2 (1%)	50 (20%)	3 (1%)	93 (28%)	78 (26%)	8 (2%)	3 (1%)	103 (40%)	16 (7%)	2 (1%)	2 (1%)	1 (1%)	1 (1%)	58 (38%)	
Cheque	1 (0%)				2 (1%)				1 (0%)							
Other				1 (0%)	6 (2%)		2 (1%)		11 (4%)	2 (1%)	2 (1%)	4 (2%)	1 (1%)	1 (1%)		
No purchases (n)	1	2	3	2	2	2	2	2	1	2	2	2	2	2	2	3

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.6 Usage POS payment instruments by pos situation in Greece

Greece (n=31)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash		24 (86%)	25 (96%)	12 (55%)	24 (86%)	13 (65%)	17 (59%)	23 (79%)	26 (96%)	12 (55%)	17 (81%)	18 (95%)	14 (88%)	17 (81%)	20 (95%)	11 (92%)
NL debit card		2 (7%)	6 (27%)	2 (7%)	2 (7%)	3 (15%)	5 (17%)	3 (10%)	1 (4%)	4 (18%)	3 (14%)	1 (6%)	1 (6%)	2 (10%)		
Non-NL debit card		2 (7%)	1 (5%)	1 (4%)	1 (4%)	1 (5%)				1 (5%)	1 (5%)		1 (6%)	1 (5%)		
Credit card			1 (4%)	3 (14%)	1 (4%)	2 (10%)	7 (24%)	2 (7%)		4 (18%)		1 (5%)			1 (5%)	1 (8%)
Cheque						1 (5%)		1 (3%)		1 (5%)				1 (5%)		
Other						1 (5%)										
No purchases (n)		3	5	9	3	11	2	2	4	9	10	12	15	10	10	19

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.7 Usage POS payment instruments by pos situation in Ireland

Ireland (n=10)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash		4 (50%)	1 (20%)	2 (29%)	3 (38%)		3 (43%)	7 (88%)	8 (100%)	1 (13%)	4 (50%)	6 (100%)	3 (60%)	5 (83%)	5 (100%)	1 (25%)
NL debit card		1 (13%)		2 (29%)	1 (13%)	3 (60%)	1 (14%)			1 (13%)	2 (25%)			1 (17%)		
Non-NL debit card		3 (38%)	3 (60%)	2 (29%)	2 (25%)	2 (40%)	1 (14%)	1 (13%)		2 (25%)	2 (25%)					2 (50%)
Credit card				1 (14%)	1 (13%)		2 (29%)			3 (38%)			2 (40%)			1 (25%)
Cheque																
Other			1 (20%)		1 (13%)					1 (13%)						
No purchases (n)		2	5	3	2	5	3	2	2	2	2	4	5	4	5	6

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.8 Usage POS payment instruments by POS situation in Italy

Italy (n=254)		Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	24 (65%)	28 (85%)	9 (24%)	30 (75%)	9 (25%)	23 (55%)	34 (76%)	41 (98%)	6 (17%)	25 (66%)	28 (100%)	27 (87%)	25 (89%)	20 (100%)	15 (48%)	
NL debit card	9 (24%)	3 (9%)	10 (27%)	6 (15%)	9 (25%)	2 (5%)	4 (9%)	4 (2%)	8 (22%)	3 (8%)	2 (6%)	2 (6%)	1 (4%)	2 (6%)		
Non-NL debit card	2 (5%)	2 (6%)	3 (8%)	2 (5%)	2 (6%)	3 (7%)	4 (9%)	1 (2%)	1 (3%)	3 (8%)	1 (4%)	1 (4%)	1 (4%)	1 (4%)		
Credit card	2 (5%)	15 (41%)	2 (5%)	2 (5%)	16 (44%)	14 (33%)	3 (7%)	3 (7%)	20 (56%)	7 (18%)	2 (6%)	2 (6%)	1 (4%)	14 (45%)		
Cheque																
Other									1 (3%)							
No purchases (n)	8	12	8	5	9	3	3	3	9	7	17	14	17	25	14	

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.9 Usage POS payment instruments by pos situation in Luxembourg

Luxembourg (n=15)	Supermarket		Food specialised		Non-food large purchases		Non-food small purchases		Petrol station		Restaurant		Other catering		Bar		Accommodation		Culture and recreation		Food & drink machines		Parking ticket machine		Public transport		Taxi		Toll						
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%					
Cash	9	(64%)	11	(92%)	4	(36%)	7	(58%)	9	(64%)	8	(80%)	12	(92%)	12	(100%)	7	(54%)	6	(86%)	6	(100%)	6	(78%)	7	(83%)	5	(100%)	3	(100%)	6	(100%)			
NL debit card	4	(29%)	1	(8%)	7	(64%)	5	(42%)	3	(21%)	2	(20%)	1	(8%)			4	(31%)					1	(11%)											
Non-NL debit card																	1	(8%)	1	(14%)			1	(11%)			1	(17%)							
Credit card	1	(7%)						2	(14%)								1	(8%)																	
Cheque																																			
Other																																			
No purchases (n)	1		3		4		3		1		5		2		3		2		8		9		6		9		9		12		9				

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.10 Usage pos payment instruments by pos situation in Portugal

Portugal (n=17)	Supermarket	Food specialised	Non-food large purchases	Non-food small purchases	Petrol station	Restaurant	Other catering	Bar	Accommodation	Culture and recreation	Food & drink machines	Parking ticket machine	Public transport	Taxi	Toll
Cash	13 (87%)	13 (93%)	6 (55%)	17 (100%)	5 (50%)	9 (60%)	16 (94%)	14 (93%)	3 (25%)	11 (92%)	12 (100%)	9 (100%)	9 (100%)	11 (100%)	3 (75%)
NL debit card	2 (13%)	1 (7%)	4 (36%)		3 (30%)	3 (20%)	1 (6%)	1 (7%)	1 (8%)						1 (25%)
Non-NL debit card															
Credit card			1 (9%)		2 (20%)	3 (20%)			6 (50%)	1 (8%)					
Cheque															
Other									2 (17%)						
No purchases (n)	2	3	6	-	7	2	-	2	5	5	5	8	8	6	13

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular pos situation. The percentages are based on the number of respondents that bought something in that particular pos situation.

Table B.II Usage POS payment instruments by POS situation in Spain

Spain (n=89)	Supermarket		Food specialised		Non-food large purchases		Non-food small purchases		Petrol station		Restaurant		Other catering		Bar		Accommodation		Culture and recreation		Food & drink machines		Parking ticket machine		Public transport		Taxi		Toll	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Cash	69	(87%)	67	(92%)	23	(33%)	71	(87%)	22	(38%)	41	(49%)	77	(89%)	79	(98%)	15	(21%)	52	(75%)	69	(99%)	44	(80%)	56	(89%)	50	(94%)	23	(53%)
NL debit card	7	(9%)	3	(4%)	20	(29%)	7	(9%)	14	(24%)	15	(18%)	2	(2%)	1	(1%)	14	(19%)	12	(17%)	1	(1%)	5	(9%)	5	(8%)	2	(4%)	4	(9%)
Non-NL debit card	2	(3%)	1	(1%)	7	(10%)	1	(1%)	7	(12%)	2	(2%)	1	(1%)	1	(1%)	6	(8%)	3	(4%)	2	(2%)	2	(4%)	2	(3%)	2	(4%)	3	(7%)
Credit card	1	(1%)	2	(3%)	19	(27%)	3	(4%)	15	(26%)	26	(31%)	7	(8%)	7	(8%)	36	(50%)	2	(3%)	2	(3%)	3	(5%)	3	(5%)	1	(2%)	13	(30%)
Cheque																														
Other					1	(1%)											1	(1%)					1	(2%)						
No purchases (n)	10		16		19		7		31		5		2		8		17		20		19		34		26		36		46	

Each cell shows both the frequency and the percentage of respondents who mostly used a particular payment instrument in a particular POS situation. The percentages are based on the number of respondents that bought something in that particular POS situation.

Appendix c Estimation results

Table c.1 Probit Model: Explaining payment behaviour at the counter

Explanatory variable	Always cash= yes			Frequent debit card= yes			Frequent credit card= yes		
	Coef	p-value	dy/dx	Coef	p-value	dy/dx	Coef	p-value	dy/dx
Gender (m =1, f = 0)	0.061*	0.525	0.017	-0.294*	0.001	-0.096	0.425*	0.000	0.146
Ages 35 - 54	0.255	0.062	0.072	-0.259*	0.035	-0.083	0.021	0.869	0.007
Ages 55 and over	0.270	0.054	0.076	-0.309*	0.015	-0.099	0.112	0.394	0.039
Primary education	-0.069	0.810	-0.019	0.248	0.316	0.086	-0.380	0.160	-0.119
Lower vocational education	0.261	0.059	0.076	0.116	0.359	0.039	-0.306*	0.018	-0.102
General secondary education	0.278	0.070	0.084	-0.076	0.605	-0.024	-0.071	0.615	-0.025
Intermediate vocational education	0.163	0.245	0.047	0.096	0.448	0.032	-0.213	0.093	-0.072
University	0.258	0.098	0.077	-0.452*	0.004	-0.131	-0.206	0.136	-0.069
partner=yes	-0.218	0.061	-0.063	0.203	0.081	0.064	-0.019	0.874	-0.007
Net income EUR 0-1150	0.372	0.052	0.116	0.029	0.877	0.010	-0.565*	0.005	-0.169
EUR 1151-1800	0.380*	0.006	0.114	0.115	0.378	0.038	-0.770*	0.000	-0.233
EUR 1801-2600	0.220	0.064	0.063	-0.007	0.950	-0.002	-0.212	0.043	-0.072
City	-0.049	0.742	-0.013	0.111	0.451	0.037	0.216	0.124	0.078
Town	-0.126	0.353	-0.034	0.066	0.607	0.022	0.164	0.190	0.058
Village	0.039	0.768	0.011	0.245*	0.050	0.083	-0.071	0.577	-0.025
Countryside	-0.198	0.186	-0.052	0.115	0.402	0.038	0.172	0.210	0.062
Residence near border	-0.031	0.784	-0.008	0.164	0.111	0.054	-0.110	0.300	-0.038
Belgium	-0.034	0.778	-0.009	0.239*	0.031	0.081	-0.070	0.545	-0.024
France	-0.424*	0.015	-0.102	-0.049	0.747	-0.016	0.508	0.000	0.190
Greece	0.799*	0.001	0.278	-0.077	0.785	-0.024	-0.375	0.198	-0.117
Italy	-0.152	0.550	-0.039	-0.086	0.729	-0.027	0.373	0.083	0.139
Austria	0.169	0.48	0.050	0.327	0.135	0.115	-0.019	0.932	-0.007
Spain	0.114	0.524	0.033	-0.163	0.376	-0.051	0.255	0.125	0.093
Fi/Lu/Pt/Ie	0.114	0.611	0.033	0.256	0.240	0.089	-0.229	0.335	-0.075
Holiday	-0.385*	0.004	-0.109	-0.135	0.279	-0.044	0.107	0.386	0.037
Visit family/friends	-0.070	0.638	-0.019	0.112	0.426	0.037	-0.015	0.916	-0.005
Shopping	-0.109	0.458	-0.029	0.172	0.210	0.058	0.061	0.663	0.022
Passing through	-0.223	0.234	-0.057	0.236	0.164	0.081	-0.061	0.719	-0.021
One day trip	-0.095	0.535	-0.025	0.138	0.333	0.046	0.060	0.687	0.021
Other	0.468	0.096	0.152	0.071	0.800	0.024	-0.238	0.451	-0.078
Constant	-0.975*	0.000		-0.607	0.006		-0.529*	0.020	
no obs.	1054			1054			1054		
log likelihood	-505.82			-579.5			-590.82		
Pseudo R ²	0.08			0.07			0.11		

* significant at the 95% confidence level

Table c.2 Ordered probit model: Explaining amount of cash taken on foreign visit

Explanatory variable	coefficient	p-value
Gender (m =1, f = 0)	0.161	0.068
Ages 35 – 54	0.657*	0.000
Ages 55 and over	0.744*	0.000
Primary education	-0.017	0.948
Lower vocational education	0.033	0.790
General secondary education.	0.268	0.063
Intermediate vocational education	0.213	0.090
University	0.238	0.088
partner=yes	0.272*	0.011
Net income in EUR		
0-1150	0.331	0.083
1151-1800	-0.063	0.618
1801-2600	0.012	0.912
City	-0.044	0.752
Town	-0.001	0.995
Village	0.035	0.777
Countryside	0.036	0.787
Residence near border	-0.137	0.183
Belgium	-0.024	0.817
France	0.166	0.268
Greece	0.357	0.168
Italy	0.217	0.372
Austria	0.195	0.371
Spain	0.395*	0.029
Fi/Lu/Pt/Ie	0.472*	0.031
Holiday	0.684*	0.000
Visit family/friends	0.039	0.778
Shopping	-0.034	0.792
Passing through	0.438*	0.012
One day trip	0.065	0.624
Other	-0.062	0.820
cut1	0.031	
cut2	1.297	
cut3	2.192	
Number of obs.	707	
Log likelihood	-847.98	
Pseudo R ²	0.09	

* significant at the 95% confidence level

Table c.3 Probit model: Explaining what type of consumers tend to make cross-border payments towards other euro countries

Dependent variable

Did you make a cross-border payment to another euro country in 2006?

(No = 0, yes = 1)

Explanatory variable	coefficient	Std. dev.	P-value	dF/dx
Constant	-0.337	0.239	0.239	0.239
Gender (m = 0, f = 1)	-0.377*	0.081	0.081	0.081
Size of household	0.035	0.042	0.042	0.042
Partner (no = 0, yes = 1)	0.131	0.122	0.122	0.122
Paid job (no = 0, yes = 1)	0.092	0.106	0.106	0.106
Study (no = 0, yes = 1)	0.603	0.395	0.395	0.395
Age				
15 - 24	0.154	0.568	0.568	0.568
25 - 34	0.004	0.126	0.126	0.126
35 - 44	0.055	0.116	0.116	0.116
55 - 64	0.145	0.126	0.126	0.126
65 and over	0.017	0.152	0.152	0.152
Net income in EUR				
0 - 1150	-0.033	0.159	0.159	0.159
1151 - 1800	-0.261*	0.114	0.114	0.114
1801 - 2600	-0.148	0.096	0.096	0.096
Education				
Primary education	-0.067	0.226	0.226	0.226
Lower vocational education	-0.286*	0.113	0.113	0.113
General secondary education	0.138	0.125	0.125	0.125
Intermediate vocational education	0.091	0.111	0.111	0.111
University	0.121	0.124	0.124	0.124
Residence; degree of urbanisation				
Highly urbanised	0.046	0.141	0.141	0.141
Moderately urbanised	-0.089	0.113	0.113	0.113
Little urbanised	0.006	0.113	0.113	0.113
Not urbanised	0.106	0.120	0.120	0.120
Residence in Randstad (no=0, yes=1)	0.010	0.134	0.134	0.134
Residence near border (no=0, yes=1)	0.140	0.089	0.089	0.089
Nr. obs.	1407			
LR χ^2 (22)	80.03			
Prob(χ^2)	0.0000			
Log likelihood	757.98			
Pseudo R ²	0.050			

* significant at the 95% confidence level

Table c.4 Probit model: Explaining what type of consumers are most likely not to switch over to the SEPA Debit Card

Dependent variable
Resistance to SEPA Debit Card
(No = 0, yes = 1)

Explanatory variable	coefficient	Std. dev.	P-value	dF/dx
Gender (m = 0, f = 1)	0.273*	0.075	0.000	0.097
Age				
35 - 54	0.053	0.062	0.621	0.018
55 and over	0.381*	0.108	0.000	0.136
Education				
Primary education	0.254	0.204	0.213	0.095
Lower vocational education	-0.100	0.102	0.331	-0.035
General secondary education	-0.159	0.122	0.193	-0.055
Intermediate vocational education	-0.057	0.109	0.599	-0.020
University	-0.333*	0.128	0.009	-0.111
Net income in EUR				
0-1150	0.180	0.133	0.178	0.066
1151-1800	0.191*	0.097	0.050	0.069
1801-2600	0.110	0.093	0.238	0.039
Border dummy	0.101	0.089	0.256	0.036
Frequency X-border remote paym.				
1 - 2 times	-0.392*	0.096	0.000	-0.131
3 - 5 times	-0.161	0.295	0.584	-0.055
more than 5 times	-0.213	0.308	0.489	-0.072
Frequency X-border visit				
1 - 5 times	-0.257*	0.085	0.003	-0.092
6 - 10 times	-0.172	0.167	0.303	-0.059
11 - 15 times	-0.534*	0.254	0.035	-0.162
more than 15 times	-0.618*	0.225	0.006	-0.183
Foreign euro bank account (yes = 1)	-0.933*	0.363	0.010	-0.242
constant	-0.761*	0.181	0.000	

Number of obs = 1407
LR chi2(20) = 123.39
Prob > chi2 = 0.0000
Log likelihood = -831.78
Pseudo R² = 0.069

Table c.5 Probit model: Explaining what type of consumers are most likely not to switch over to the SEPA Credit Transfer

Dependent variable Resistance to SEPA Credit Transfer (No = 0, yes = 1)				
Explanatory variable	coefficient	Std. dev.	P-value	dF/dx
Gender (m = 0, f = 1)	0.336*	0.074	0.000	0.125
Age				
35 - 54	0.155	0.104	0.136	0.057
55 and over	0.360*	0.106	0.001	0.135
Education				
Primary education	0.362	0.202	0.073	0.141
Lower vocational education	-0.015	0.101	0.880	-0.006
General secondary education	-0.061	0.120	0.608	-0.023
Intermediate vocational education	-0.059	0.107	0.583	-0.022
University	-0.159	0.121	0.191	-0.058
Net income in EUR				
0-1150	-0.040	0.132	0.763	-0.015
1151-1800	-0.000	0.096	0.997	-0.000
1801-2600	-0.071	0.091	0.433	-0.026
Border dummy	-0.020	0.088	0.818	-0.008
Frequency Xborder remote paym.				
1 - 2 times	-0.393*	0.092	0.000	-0.139
3 - 5 times	-0.191	0.277	0.490	-0.068
more than 5 times	-0.715*	0.343	0.037	-0.218
Frequency Xborder visit				
1 - 5 times	-0.116	0.085	0.172	-0.043
6 - 10 times	-0.096	0.163	0.556	-0.035
11 - 15 times	-0.247	0.239	0.301	-0.087
More than 15 times	-0.606*	0.227	0.007	-0.194
Foreign euro bank account (yes = 1)	-0.434	0.277	0.117	-0.146
Constant	-0.787	0.180	0.000	
Number of obs = 1407				
LR chi2(20) = 100.58				
Prob > chi2 = 0.00				
Log likelihood = -872.73				
Pseudo R ² = 0.055				

Table c.6 Probit model: Explaining what type of consumers are most likely not to switch over to the SEPA Direct Debit

Dependent variable
Resistance to SEPA Direct Debit
(No = 0, yes = 1)

Explanatory variable	coefficient	Std. dev.	P-value	dF/dx
Gender (m = 0, f = 1)	0.369*	0.073	0.000	0.146
Age				
35 - 45	0.071	0.101	0.484	0.028
55 and over	0.273*	0.104	0.008	0.108
Education				
Primary education	0.045	0.203	0.824	0.018
Lower vocational education	-0.026	0.100	0.794	-0.010
General secondary education	-0.033	0.117	0.781	-0.013
Intermediate vocational education	-0.168	0.106	0.113	-0.066
University	-0.234*	0.119	0.049	-0.091
Net income in EUR				
0-1150	0.153	0.130	0.241	0.061
1151-1800	-0.026	0.095	0.779	-0.011
1801-2600	0.088	0.089	0.321	0.034
Border dummy	-0.138	0.0872	0.110	-0.055
Frequency Xborder remote paym.				
1 - 2 times	-0.449*	0.089	0.000	-0.172
3 - 5 times	-0.168	0.275	0.540	-0.066
Frequency Xborder visit				
more than 5 times	-0.473	0.298	0.113	-0.175
1 - 5 times	-0.188*	0.084	0.026	-0.074
6 - 10 times	-0.205	0.162	0.204	-0.080
11 - 15 times	-0.173	0.232	0.456	-0.067
More than 15 times	-0.440*	0.210	0.036	-0.165
Foreign euro bank account (yes = 1)	-0.930*	0.303	0.002	-0.308
Constant	-0.447*	0.177	0.011	

Number of obs = 1407
LR chi2(20) = 134.89
Prob > chi2 = 0.00
Log likelihood = -902.26
Pseudo R² = 0.070

Notes

1 De Nederlandsche Bank, Payments Policy Division. Comments made by Hans Brits, Rein Kieviet and members of the ECB SEPA Team are gratefully acknowledged as well as comments made by an anonymous referee. We would especially like to thank Chantal Hartog and Melanie van Kempen for excellent research assistance.

2 In countries where people use cash that is not withdrawn from ATMs (but withdrawn from bank accounts at a bank counter, unbanked (illegally earned) money, etc.) relative cash usage may be higher than is represented by Chart 2.

3 Centerdata is an institute for applied economic research and survey research for social sciences. It is affiliated with Tilburg University.

4 Chart 5 does not distinguish between payment behaviour in different euro countries. Appendix B contains country tables, listing the payment behaviour of the Dutch in each euro country separately.

5 Ireland and Finland were mentioned as last visited euro country by fewer than 10 respondents. Therefore the reported payment behaviour in these countries may not provide a representative picture of the true payment behaviour of Dutch visitors.

6 We define cash payers as people who usually paid with cash in every POS situation. Frequent debit card users are considered to have paid with a debit card at one-third or more of the POS locations they visited. A similar definition applies to frequent credit card users. These relative thresholds take into account that the number of visited POS situations may differ per trip (differences in length of stay, visited country and reason for stay). The thresholds for membership of one of these three groups are chosen in such a way that group membership is neither too restrictive (high threshold) nor too general (low threshold). The threshold for the cash user group used in this study differs from Jonker (2007). The main reason is that in the Netherlands at some POS situations, like vending machines or parking ticket machines, one has to use the e-purse whereas in other countries one can use cash. We have also estimated probit models using a different group definition, with frequent credit card payers defined as people who use their credit card at three or more different POS locations. However, this hardly affected the estimation results, indicating that they are quite robust.

7 For a discrete change in case of a dummy variable x , dF/dx refers to the change from 0 to 1 of x .

8 The safety of an instrument should be read as the absence of perceived physical danger and financial risk in using the instrument.

9 At least from a consumer perspective. In order for the SEPA debit card to succeed, retailers will also have to be convinced of its advantages.

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