

## 8. *Capita selecta*

This chapter consists of four contributions which discuss their subjects in more depth than the other chapters of this book. Two of these contributions are by authors from outside Statistics Netherlands (Delft University of Technology and NLKabel); one was co-written by an author from *De Nederlandsche Bank* (the Dutch central bank). The four contributions examine the following issues:

- Electronic payments (*De Nederlandsche Bank/Statistics Netherlands*);
- ICT skills (*Statistics Netherlands*);
- Mobile services (*Delft University of Technology*);
- Next-generation broadband internet (*NLKabel*).

Statistics Netherlands hopes to highlight other relevant research in the field of ICT by including these external contributions in this book. As such research may have a very narrow focus, or may be aimed at forecasting of future developments, it falls outside the core business of Statistics Netherlands.

Some figures in this chapter do correspond to those published by Statistics Netherlands. The differences are caused mainly by differences in the population described, the time of data collection, and the research method used.

### 8.1 *From cash to electronic payments: an overview of developments*

*Dutch shoppers are using electronic forms of payment for more and more of their purchases. Debit cards are used particularly often in this respect. Their use will continue to grow in the future, on the one hand because more consumers are using debit cards, and on the other because more and more retailers are accepting them. The increasing use of cards is beneficial from a social point of view: it reduces the total costs of payments for society as a whole, it increases safety for retailers, and it is convenient for consumers.*

*This contribution addresses the following topics: the development of the use of various means of payment, the use of debit cards by consumers, the acceptance of debit cards by retailers, and future developments with respect to retail payments.*

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#### **Introduction**

In the past twenty years, Dutch consumers have increasingly paid for their purchases electronically. While they used to pay mainly with coins, banknotes and cheques, now they more often use a debit card. They are also using e-purses more, mainly for specific purposes such as parking ticket machines, in work canteens and

for vending machines. In 2008, 5 billion payments were done with cash, 1.8 billion using a debit card and 176 million using an e-purse.

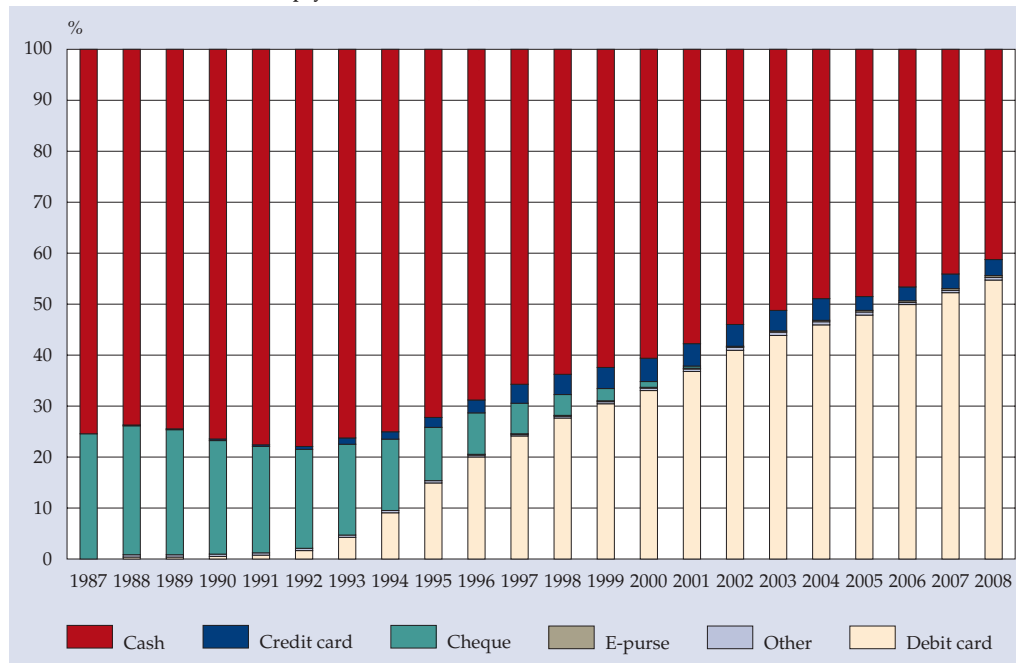
The costs for processing point-of-sale (POS) payments for banks, value carriers, retailers, telecom companies and *De Nederlandsche Bank* amounted to 2.9 billion euro in the Netherlands in 2002 (Brits and Winder, 2005). These costs could be reduced along the whole payment chain if consumers paid more with debit cards and less with cash. Studies have shown (McKinsey & Company, 2006, EIM, 2007) that even for small amounts, the debit card is a cheaper way to pay than cash. A further increase in electronic payments also contributes to safety: retailers are a less attractive target for raiders if they have less cash in the till. Furthermore, debit cards are convenient for consumers. They don't have to go to the bank or an ATM as often to withdraw cash; and they need not worry about having enough cash in the case of a – sometimes unexpected – purchase. This is also favourable for retailers: 6 percent of them reported that customers spend more money in their shops since they have the option of paying with a debit card (Bolt et al., 2008).

#### *Development in various means of payment*

Dutch banks introduced the debit card in 1988. Initially consumers mainly used these cards, which are secured by a personal identification number (PIN), to withdraw cash from ATMs. At the end of the 1980s, oil company Shell and supermarket chain Albert Heijn were the first companies in the Netherlands to enable payments with debit cards by installing POS terminals at their petrol stations and their supermarkets respectively (Out et al., 1995). The acceptance of debit cards by these two major players contributed substantially to the adoption of debit cards by the public. In the mid-1990s, banks also introduced the e-purse, which was mainly intended to replace cash for small-amount transactions. The introduction of these new debit cards resulted in significant shifts in the way consumers paid for their shop purchases.

Figure 8.1.1 shows the value shares of various forms of payment in total POS sales (shops, hotels, restaurants, petrol stations, etc.) in the Netherlands. The figure clearly shows the growing significance of debit cards as a method of payment, and also the corresponding decrease in the use of cash and the complete disappearance of cheques. With the introduction of debit cards, cheques became less popular for purchases involving large amounts. In 2002, banks stopped supplying cheques – a relatively expensive form of payment – as a means of payment on the domestic market. Consumers could also easily use debit cards to withdraw cash. They no longer had to go to the bank during business hours, but could use their debit cards to withdraw money from an ATM twenty four hours a day, seven days a week. Initially, therefore, the introduction of debit cards did not result in a decrease in the share of cash in the turnover of shops; on the contrary, it coincided with a rise, from 74 percent in 1988 to 78 percent in 1992. As debit cards facilitated the withdrawal

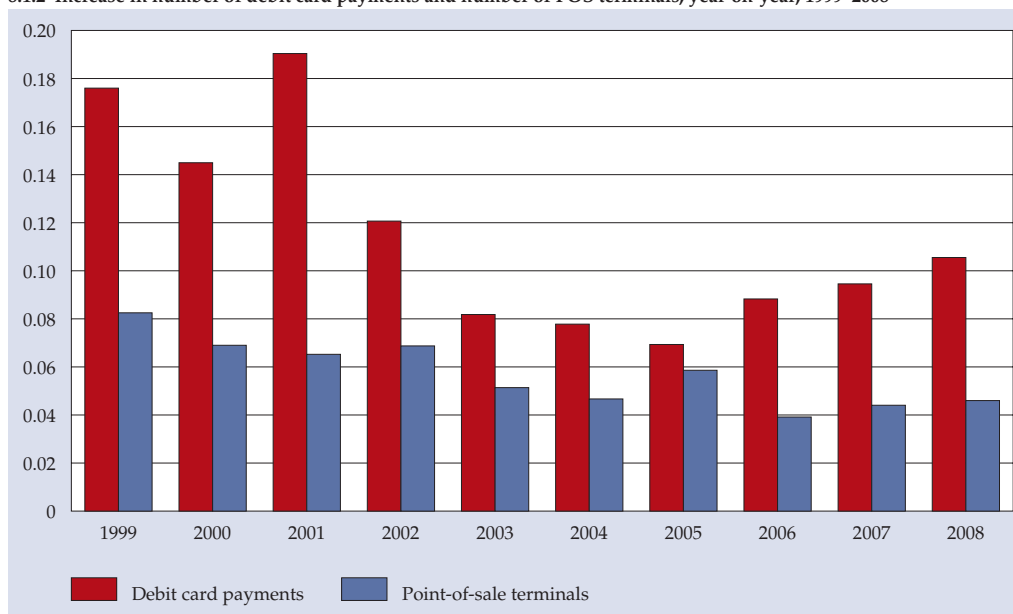
8.1.1 Value shares of methods of payment in POS sales, 1987–2008



Source: Statistics Netherlands, Currence.

of cash, cheques became less popular. From 1992 onwards, consumers could increasingly use debit cards to pay at the counter, as many retailers installed POS terminals. Turnover from debit card payments increased spectacularly between 1992 and 1995 (figure 8.1.1), although compared with total POS turnover its volume was still modest. After 1995, more and more retailers and service providers accepted debit card payments. In the space of twenty years, the share of this method of payment in total turnover at points-of-sale increased to nearly 55 percent in 2008. The rise was at the expense of payments by cash and cheques. In 2008, the share of cash was 41 percent, down from 78 percent in 1992. Fewer consumers used an e-purse, however. These cards have developed into a method of payment for specific purposes where debit cards cannot be used, or fast transactions are desirable: for example parking meters, vending machines, and in work canteens and cafeterias. E-purses have a number of disadvantages compared with debit cards: users have to charge them beforehand, the balance is not visible on the card, and there are relatively few charging points. Also, fewer shopkeepers accept e-purses, and the number continues to fall as only few consumers use them to pay (Jonker, 2007).

8.1.2 Increase in number of debit card payments and number of POS terminals, year-on-year, 1999–2008



Source: Currence.

The increase in the use of debit cards is based on the broad acceptance by businesses that accept debit card payments as well as consumers who use the card to pay for their purchases (figure 8.1.2). From 1999 the number of POS terminals increased by 4 to 8 percent yearly, but the number of debit card payments increased by much more: 7 to as much as 19 percent in 2001. The growth in the number of debit card payments was more than twice as high on average as the growth in the number of point-of-sale terminals. This not only indicates that increased acceptance at points-of-sale contributed to the increased use of debit cards, but also that more consumers pay their for purchases with a debit card, and/or consumers pay for a larger share of their purchases by debit card.

#### *Use of debit cards by consumers*

Almost all adults in the Netherlands have a debit card linked to a bank account. In 2008, some 86 percent of Dutch people aged fifteen or older used the card for both cash withdrawals and payments. The more a purchase costs, the more likely it will be paid for with a debit card (Currence/GfK, 2008, Bolt et al, 2008b). One in eight Dutch consumers do not use a debit card to withdraw cash, but do use it to pay for purchases. Only one in sixteen consumers use a debit card to withdraw cash, but not for payments. The latter group includes relatively many men, people with a low education level, young people, and elderly people. A small minority of Dutch people do not use a debit card at all. Several studies show that the younger and

more educated consumers are, and the more they earn, the more likely they are to use electronic means of payment (Stavins, 2001, Van Hove et al., 2005; Borzekowski et al., 2008). On the other hand, another study shows that age has only a limited impact on the use of debit cards in the Netherlands (Jonker, 2007).

In 2004, Dutch consumers said they wanted to pay by debit card more often, but did not do so for a number of reasons. Sometimes they paid cash because that was the only form of payment accepted, but many also opted to pay cash when a surcharge was charged for electronic payment of amounts below a certain threshold. These surcharges were still regularly being charged at the end of 2007: 20 percent of all retailers who accepted debit card payments charged customers on average 0.24 euro extra for debit card payments below a certain threshold (Bolt et al., 2008). Faced with this extra charge, two-thirds of consumers opted to pay cash in 2006. More than one in five (22 percent) used a debit card and paid the surcharge. A smaller proportion shopped elsewhere (5 percent), or paid by e-purse (4 percent).

Last year, fewer and fewer retailers charged extra for debit card payments; by mid 2009 this had fallen to only 8 percent of small and medium-sized businesses (Currence, 2009). At the end of 2007, Currence launched a public campaign encouraging consumers to use debit cards for small amounts, and as a result many shops have ceased to demand a surcharge. Furthermore, the average amount paid with a debit card had been decreasing for some time, but after the start of the campaign it fell faster, from 43.07 euro in the first half of 2008 to 39.48 euro in the first half of 2009 (Currence/DNB). In supermarkets, the sector targeted by the first series of commercials, the number of debit card payments rose by 13 percent. This is 3 percent points more than the increase in other sectors. New campaigns were launched in May and August 2009, concentrating on chemists and shops selling alcoholic beverages. Just as in supermarkets, the number of transactions below 10 euro paid by debit card has increased in these branches since the start of the campaigns.

#### *Acceptance of the debit card*

Although more and more retailers accept payments by debit card, there are large differences between the various retail branches. On average, 70 percent of shops, hotels, restaurants, cafes etc., and service providers accept payments by debit card (table 8.1.1). Acceptance of the debit card is relatively high in sectors with large purchase amounts, such as clothes and shoe shops, chemists and perfumeries, petrol stations and travel agencies. Relatively few businesses in the hotel and restaurant sector accept debit card payments. In addition to the sector, the size of the business also plays a role: consumers can use debit cards at only half of one-man businesses, while nearly all businesses with 50 and more employees accept debit cards.

Retailers who do not accept debit card payments often do not do so for financial reasons. In 2007, more than half of businesses that accepted only cash payments said the investment costs were too high; for nearly 40 percent the bank charges for debit card payments were an obstacle. Many retailers also said it was too much hassle to introduce the option of debit card payments. Other reasons for retailers not to accept debit card payments were the low transaction speed, and the fear of fraud with POS terminals.

Recent developments have shown that the acceptance of debit cards can rise significantly in a relatively short time as a result of technological developments or specific campaigns. In the late 1990s, for example, mobile POS terminals were introduced. These devices enable the seller to go the customer, instead of vice versa, and the customer can then pay by debit card on the spot. Some years after its introduction, this innovation was successful in the Dutch hotel and restaurant sector and on street markets. While the total number of fixed and mobile payment terminals increased by 6.5 percent between late 2004 and late 2005, the number of terminals in the hotel and restaurant sector rose by 14 percent. Furthermore, the growth in the number of payment terminals in this sector was more than twice as high as in other sectors in 2006.

**Table 8.1.1**  
Acceptance of debit cards, by branch and business size, October 2007

	<i>% of total number of businesses</i>
<b>Total</b>	70
<b>Sector</b>	
Food	76
Garden centres, florists	73
Clothes and shoe shops	89
Builder's merchants and DIY stores	80
Hotels and restaurants	56
Department stores, shops for household items and furniture	73
Media (books, DVDs, CDs)	84
Chemists, perfumeries	85
Other shops and markets	75
Petrol stations, travel agents, etc.	81
Other services	44
<b>Business size</b>	
1 employed person	50
2-4 employed persons	75
5-9 employed persons	89
10-19 employed persons	93
20-49 employed persons	92
50 and more employed persons	97

Source: DNB, 2008.

### *2005 Payment Covenant and Additional Agreement of 2009*

In order to promote the use of debit cards and thus reduce costs, banks and retailers drew up the Payment Covenant in November 2005. Under this agreement banks offer retailers a discount of at least 0.01 euro on their tariffs for debit card payments. Furthermore, in cooperation with retail organisations, banks set up a foundation for the promotion of efficient payment (*Stichting Bevorderen Efficiënt Betalen*), which supports projects designed to improve safety and efficiency of payments. On 27 May 2009 banks and retailers agreed on the Additional Agreement, which is valid up to and including 2012.

Among other things, the foundation for the promotion of efficient payments aims to promote the acceptance of debit card payments in small and medium-sized businesses. Various studies have shown that the number of debit card payments correlates positively with the number of locations where consumers can use these cards (Bolt et al., 2008a; Jonker and Kettenis, 2007). The foundation called on banks, telecom companies and terminal suppliers to develop cheap and simple all-in-one 'debit card packages'. These consist of at least one payment terminal and a telecom contract, but also often include a bank contract. The packages are also attractive for businesses who receive small amounts by debit card: they can receive payments by debit card for a fixed monthly charge. Businesses applying for such 'smart debit card packages' were also entitled to a 100 euro grant from the foundation. This campaign persuaded many smaller businesses to accept debit card payments; not only retailers, and hotels and restaurants, but also taxi companies, traditional craft businesses and market traders. At the end of January 2009, over 16 thousand businesses had registered with the foundation for the promotion of efficient payments for a smart debit card package. The foundation is also involved in a campaign promoting the use of debit cards for small amounts developed by Currence (brand owner of PIN, the Dutch debit card system). They provided promotional material to businesses, and the first TV commercials were broadcast at the end of 2007. The first campaign, for supermarkets, was launched in September 2008, and was followed in 2009 by campaigns aimed at chemists and shops selling alcoholic beverages.

### *The future of electronic payment*

The use of cash is expected to decrease further in the future. Both parties on the demand side of payments by debit card – consumers and retailers – are eager to increase use of debit cards further. And the supplying parties – the banks – also want to stimulate further use, for efficiency reasons. The abolition of surcharges and public campaigns have encouraged consumers to use debit cards for smaller amounts, and they are actually doing so. The acceptance of debit cards continues to increase, also among small and medium-sized businesses, which have benefited from the introduction of debit card packages specially tailored to the needs of busi-

nesses who receive few or mainly small payments. In the coming years, banks and retailers will continue to introduce plans to reduce the use of cash in favour of electronic payment. This was officially agreed on 27 May 2009, in the so-called Additional Agreement to the 2005 Payment Covenant.

Looking further ahead, cash payments, but perhaps also debit card payments, could be replaced by new electronic options, for example through mobile phones. A few years ago, financial institutions and telecom companies started to develop the technology needed for this. At the moment (2010), consumers in the Netherlands can pay for parking tickets using their mobile phone. The final payment in this method is done by a money transfer order or a credit card. Consumers can also transfer money to each other via SMS text messages. In other countries, such as Belgium and South Korea, consumers can even use their mobile phone to pay in certain shops. In the Netherlands, two supermarket chains have tested methods of payment via mobile phones.

An important development in this context is the introduction of the European payments market (Single Euro Payments Area, SEPA). SEPA could, albeit to a limited extent, contribute to an increased use of debit cards. The aim of SEPA is to transform the national payment markets in Europe, which are focused on domestic methods of payment, into a European payment market with methods of payment that allow consumers and businesses across Europe to pay in the same way, with the same charges and under the same conditions. Under SEPA, banks will offer payment services, both to consumers and businesses, which are in principle suitable for use throughout Europe. SEPA could contribute to an increase of the number of debit card payments in two ways. On the one hand because Dutch consumers will use debit cards more in other European countries, and also because other Europeans will be able to use debit cards more in the Netherlands. At the moment, Dutch consumers pay more in cash or by credit card elsewhere in Europe than in the Netherlands (Jonker and Kosse, 2008). They would like to pay more by debit card, but cannot do so because the acceptance of debit cards abroad is generally lower than in the Netherlands. SEPA will change this. European retailers will eventually accept debit card payments from networks that can be used throughout Europe and not just at a national level.

Cash payments will not disappear in the foreseeable future. In some situations, consumers or retailers will prefer cash instead of electronic payment because of security or convenience. This will certainly remain the case as long as there is no widely accepted option for electronic transfers between consumers, as cash is fast and easy to transfer. Cash also has the advantage that it can be used if the electronic payment system malfunctions. And lastly: unlike electronic payments, cash is completely anonymous.