

Payment behaviour in Germany in 2011

An empirical study of the utilisation of cash
and cashless payment instruments



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Deutsche Bundesbank
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■ Preface

Dear reader

What you are holding is the second study on payment behaviour in Germany published by the Deutsche Bundesbank, this time with data gathered in 2011.

This is the Deutsche Bundesbank's second study in three years of how people in Germany pay for their purchases – using cash, cards or other payment instruments. It shows which payment procedures consumers in Germany prefer, and why this is so. The regularity of the study enables the Deutsche Bundesbank to detect trends in consumers' payment behaviour. Amongst other things, this provides important information required by the Bundesbank in order to fulfil its statutory mandate for cash and cashless payments in Germany. However, these results are particularly important for retail trade, the business sector and consumers, too.

It is precisely the highly innovative evolution of payment procedures and technologies which has led some to predict a bleak future for cash. Payment innovations such as contactless card payments or payments by mobile phone, however, have been irrelevant up to now. Internet payment procedures which are being increasingly used as a result of growing online sales could end up being much more successful.

As was already the case in 2008, though, cash is the most-used instrument: banknotes and coins account for half of turnover and more than four-fifths of all transactions.

It is ultimately the consumer, and his or her payment and purchasing habits, who will dictate the significance and decide the future of payment instruments. As the co-existence of cash and cashless payment instruments ensures that consumers



have freedom of choice with regard to their preferred payment instrument, the Deutsche Bundesbank will maintain its neutral stance in this regard.

I wish you an interesting and informative read.

Yours

A handwritten signature in blue ink that reads "Carl-Ludwig Thiele". The signature is written in a cursive, flowing style.

Carl-Ludwig Thiele

Member of the Executive Board of the Deutsche Bundesbank

■ 1. Summary

Has payment behaviour in Germany changed in recent years and, if so, how? This is the question posed in this study, which is based on survey data gathered in the autumn of 2011 in a repeat of the survey on payment behaviour first carried out in 2008. The aim was to identify how payment behaviour has developed since then, taking a number of new aspects into account. The study is based on a questionnaire which has been altered moderately since 2008, and on a slightly modified one-week payments diary. The more than 2,000 respondents used this diary to keep track of their expenditure for a period of one week.

In spite of the increasing popularity of card payments, the study found that cash still plays an important role, especially with regard to day-to-day retail purchases. In total, cash accounted for approximately 53% of turnover. The share of cash payments has therefore fallen by almost 5 percentage points since 2008. Debit cards (in Germany principally the girocard, formerly known as the “ec card”) are now widely available and are a very common means of payment in retail outlets. They account for more than 28% of turnover, which is an increase of almost 3 percentage points. Moreover, one-third of participants now own a credit card, an increase of 6 percentage points compared with 2008. While cashless payments are predominantly used to pay for particularly high-value purchases, cash is still the preferred method of payment for small purchases.

However, the transaction amount is not the only factor that affects payment behaviour. Socio-demographic differences also play a role. The use of payment instruments is heavily dependent on age, level of education and income. In this respect, the results of the 2011 study confirm those of the previous study in 2008. Use of cash increases significantly with age – cash accounts for the highest share of total expenditure in the case of participants aged 65 years and above. By contrast,

individuals with a better education and higher income tend to make greater use of payment cards.

This study not only examines actual documented payments, it also looks at special payment situations and new developments, including online retail activities and payment behaviour. There has been a considerable rise in online payments (e-payment schemes), such as PayPal, since 2008. These are increasingly complementing – and, in some cases, displacing – traditional cashless payment instruments. When travelling abroad, cash is still the most common payment method, followed by debit and credit cards.

The popularity of cashless payments continues to rise steadily. However, this is not an automatic process. Consumer preferences, the acceptance of payment instruments at the point of sale and the portfolio of payment instruments offered by banks and card issuers all determine the extent to which different payment instruments will be used in future. Added to this is the fact that German consumers are conservative when it comes to their payment habits. Almost 60% of respondents said that they intend to continue using the payment instruments that they are familiar with, which is likely to counter any abrupt change in payment behaviour and would suggest that cash is likely to remain a popular method of payment in the years to come.

■ 2. Issue to be discussed and study design

“Cash is likely to remain the most commonly used payment instrument in future”. This was the conclusion reached by the Deutsche Bundesbank based on the data collected in 2008 in its first study of payment behaviour in Germany.¹⁾ This study analysed payments for goods and services made by individuals at the point of sale (POS). The point of sale is the place where goods or services are sold and paid for. It usually refers to a retail outlet, but can also apply to other places, such as when services provided by craftsmen in households are paid in instalments or when mail order or e-commerce purchases are paid for, for example. Despite the increased popularity of card payments, cash was still by far the most frequently used method of payment in 2008 – both in terms of value and number of transactions. According to the forecast at that time, no significant change in this behaviour was expected in the years to come, although the popularity of cash was expected to decline somewhat owing to the increased popularity of cashless payment instruments.

To test this forecast, the Deutsche Bundesbank conducted another study in 2011. Similar in design to the first, this study consisted of two parts – a computer-assisted personal interview (CAPI) and a payments diary to be completed by the respondent. The sample group for the study consisted of German speaking individuals aged 18 years and above, residing in private households in Germany. On the basis of the master sample of the Association of German Market Research Institutes (Arbeitskreis Deutscher Marktforschungsinstitute e.V. - ADM), a representative random sample was taken from this population using a three-stage selection process. All in all, it was possible to carry out 2,195 interviews (2,098 of which with a payments diary), which corresponds to a response rate of approximately 61%.

¹ The data were collected in the spring of 2008 and the results were published in 2009 as part of the study on payment behaviour in Germany.

To correct the random sample, the sample of households was transformed into a sample of individuals, and the unweighted sample structure was adjusted to the official statistics by means of weighting. The interviews were conducted in stages between September and November 2011. After the interview, the respondents were given the choice of keeping the week-long payments diary either electronically (online) or in paper form. Only 17 respondents chose to keep an online diary, while, 2,081 opted to complete the diary in paper form.

While the payments diary was largely unchanged compared with the 2008 study, numerous changes were made to the questionnaire. For example, new questions were included on innovative payment methods at the POS (eg contactless payments via mobile phone). Questions about small coins and rounding rules at the POS were also added. By contrast, questions about which criteria are important to consumers when acquiring new payment instruments were omitted this time round. This reflects the fact that these general attitudes are likely to remain fairly stable over time.

The aim of this study is to provide a comprehensive analysis of current payment habits in Germany and the underlying reasons and – where possible – to compare the results with those of the last study. The study once again focuses on payment habits at the POS.

To reflect the increasing importance of the internet, this study offers a more in-depth analysis of online payment behaviour. It also includes questions on payment behaviour when travelling. To obtain a basic overview of payment habits for regularly recurring payments, which are not usually settled in cash (such as rent and ancillary costs, insurance premiums, telephone bills), respondents were asked to provide an estimated amount for such payments in the payments diary.

Regularly recurring payments

Traditional cashless payment methods, such as credit transfers or direct debits, are the most common payment instruments for settling regularly recurring expenses. Because the aim of this study was to identify payment habits at the POS and online, this aspect of payment behaviour was covered by just one question in the payments diary. Respondents were asked to use their bank statements to determine the amount of monthly payments deducted directly from their accounts, irrespective of whether these were standing orders or direct debits.

42% of respondents said that the amount deducted from their account each month was less than €600, while 53% said it was more than €600. These amounts are probably rather low, as not all deductions are debited monthly. Many are deducted annually or bi-annually.

Broken down by socio-demographic criteria, respondents with higher incomes had higher regularly recurring expenses, as expected. 65% of respondents with household incomes in excess of €3,000 had monthly deductions of more than €600. The difference between western and eastern Germany was particularly marked in this regard. In western Germany, 68% of respondents said that regular deductions of between €400 and €1,100 were made from their bank accounts, while only 36% of respondents in eastern Germany said the same. As well as the lower level of household income generally, this can be attributed primarily to lower living costs.

As far as possible, the study provides a descriptive presentation of the results. To offer a better understanding of the data, section 3 contains an explanation of the categories of payment instruments used in the study. Ownership and the utilisation of various payment instruments are analysed in section 4. Section 5 focuses on certain payment situations (internet and travelling abroad) based on the results of the questionnaire and section 6 provides an insight into innovative payment instruments and an outlook for future payment behaviour in Germany.

■ 3. Categorisation of payment instruments

A general distinction is made between cash and cashless payment instruments. Cash is generally defined as banknotes and coins. In Germany, cash is the only form of legal tender. Creditors are thus required to accept cash where no other form of payment has been explicitly agreed. Cash enables the immediate and final fulfilment of contract at the POS (provision of goods in return for cash). In mid-2012, there were almost 8.5 billion banknotes with a total value of more than €400 billion in circulation in Germany compared with 15 billion banknotes with a value of just under €900 billion in the euro area as a whole.²⁾

In addition to cash, payment cards are another important method of payment at the POS. There are various categories of payment cards, the key differentiating criterion is the date on which the funds are debited from the account. In the case of payment by debit card, the funds are debited from the cardholder's current account straight away. At the same time, the bank that issued the card provides a payment guarantee to the retailer accepting the card. The German banking industry operates a joint card solution for debit cards known as the girocard³⁾ for use in retail outlets and at cash dispensers. International card companies also guarantee the global or Europe-wide use and processing of debit card payments via their own acceptance logos for debit cards, such as Maestro and VPay.

2 Since the introduction of euro banknotes and coins in 2002, there have been no "real" national banknote cycles in the euro area. The amount stated is therefore a mathematical value calculated on the basis of lodgements and withdrawals at the Bundesbank.

3 girocard is the joint acceptance logo for the electronic cash (ec) system for payments at the point of sale and the German ATM system. Over the years, the designation "ec card" has become a synonym for the term "debit card" in the minds of cardholders. While the term girocard is used in the text of the study, respondents were asked about their "ec cards" in the survey, as some may not be familiar with the term girocard.

The electronic direct debit scheme (ELV) has a special position among the payment instruments used in Germany. In this procedure, a direct debit is generated via the use of a debit card, the debiting of which is authorised by the customer by means of his/her signature. Unlike in the case of a “real” debit card transaction using a PIN, however, an electronic direct debit (ELV) payment is not guaranteed by the bank issuing the card, with the result that the retailer runs the risk of a possible payment default, against which he can, for instance, take precautions where necessary by taking out insurance or by consulting black lists. For the purposes of most statistics, ELV payments are generally recorded as “card payments”, as this is what most users consider them to be.⁴⁾

Unlike payments by debit card, the use of a credit card leads, as a rule, to a delayed debit to the account which, in the event of the card having been used several times, is either deducted as a lump sum or in instalments. Hence, only limited use of the actual credit card function – over and above the time delay of the debit – (ie granting a credit line and repayment by instalments) is made with cards issued in Germany. Just as with debit cards, credit card payments are guaranteed for the accepting retailer. Credit cards play a relatively insignificant role at the point of sale in Germany owing to the strong position of the girocard.

If we take a look at the number of transactions (debit cards: 2.4 billion, credit cards: 543 million) and the transaction volume in 2011 (debit cards: €139 billion, credit cards: €48 billion), it is clear that debit card transactions are the dominant form of card payment.⁵⁾ There has been a marked increase in the total number of card payments in recent years. In 2008, 1.8 billion debit card transactions and 435 million credit card transactions were made amounting to a transaction volume of €111 billion and €40 billion, respectively. The number of transactions has therefore

⁴ This applies to the above-mentioned EHI statistics and the Bundesbank statistics.

⁵ See Deutsche Bundesbank, Payment and securities settlement statistics in Germany 2007 – 2011: August 2012, Tables 6 and 7.

risen by 28% in the case of debit cards and 24.8% in the case of credit cards, and the respective transaction volumes have increased by 24.9% and 21.9%.

A further particularity is retailer cards and bonus cards with a payment function issued by retailers, which have become increasingly widespread in recent years. These are payment cards which enable customers to use them both as a payment instrument (by generating a direct debit or credit card payment), and to collect bonus points. Bonus points are credited to customers depending on the card transaction amount, and can later be converted into premiums. Some 0.7% of turnover in German retail trade was generated via customer cards in 2011.

Another form of payment is the prepaid card, the most prominent example of which is card-based electronic money (GeldKarte in Germany). This electronic wallet is available as an additional function on the chip of most girocards. Once the card has been topped up at an ATM, special terminals or online, these prepaid cards are especially suited to making payments at ticket, cigarette or parking machines. The GeldKarte has been available on the market in its current form since 1996, but has failed to catch on. Other types of prepaid cards exist, such as those issued by international card companies. However, these currently play only a negligible role on the market.

In addition to cash and the above-mentioned types of payment cards, new and innovative payment methods are playing an increasingly important role at the POS. In particular, increasing use is being made of "near field communication" (NFC) technology in connection with various media.⁶ This technology enables the contactless transfer of data over short distances and can, for example, be used for the contactless transfer of payment data from the chip of a debit or credit card to the

⁶ For instance, girogo from the Sparkassenfinanzgruppe and People's banks and Raiffeisen banks, MasterCard PayPass, VISA PayWave.

Overview of cash and cashless payment instruments

Table 1

Payment instrument	Brief description	Possible uses
Cash	Banknotes and coins	Universal: POS, payment of goods and services before or after delivery (cash on delivery also possible with online purchases), P2P ¹⁾
Debit card	Immediate debiting of payment account after card is used at the POS (eg girocard, Maestro, V PAY)	POS, ATM
Electronic direct debit (ELV)	Debit card is used to generate a direct debit which the customer authorises with his/her signature	POS
Credit card	Delayed debiting of payment account (eg Mastercard, VISA)	POS, e-commerce, ATMs
<i>GeldKarte</i>	Prepaid card function stored on the EMV chip of a <i>girocard</i>	POS (esp public transport, car parks)
Prepaid credit card	Credit cards that function on the basis of prepayments	POS, e-commerce
Retailer and bonus cards	The card is used to collect bonus points. The actual payment is processed as a direct debit or credit card payment.	POS
Innovative payment instruments at the POS	Card and mobile payment instruments based, among other things, on near field communication technology	POS
Credit transfer	Credit transfer to the payment recipient's account which is initiated by the payer	Payment of goods and services before or after delivery (also possible with online purchases), P2P
Direct debit	Payment recipient initiates transaction to debit the payer's account with his/her consent	POS (mainly using electronic direct debit), payment of goods and services (also possible with online purchases)

E-payment schemes	Procedures based on online banking transfers by the payer (eg Giro pay, SOFORT Überweisung) and special electronic payment schemes which enable processing within the own network (eg PayPal)	e-commerce, P2P
<p>1 P2P (person-to-person) is the term used to describe a payment from one consumer to another by means of a suitable payment instrument.</p> <p>Deutsche Bundesbank</p>		

merchant terminal. This makes payment transactions faster and more convenient. It is not only possible to use NFC in connection with a physical payment card. It can also be integrated into mobile phones, for instance. In such cases, the actual payment process can still take place in the form of a conventional direct debit or card payment.

Cashless payment instruments also include instruments that are not processed at the point of sale, such as credit transfers, direct debits and various online payment schemes.⁷⁾ Credit transfers (mainly in the form of standing orders) and direct debits play a major role in the settlement of regular obligations. The expenses associated with such payments generally account for a significant share of monthly income.

An analysis of online shopping was conducted due to its increasingly important status as a distribution channel. Cashless payment instruments are used almost exclusively for online purchases. In addition to “traditional” cashless payment instruments, such as credit cards, credit transfers and direct debits, new payment processes provided by both banks and non-banks are playing an ever-greater role in this growth market. For the purposes of this study, these are defined collectively as “e-payment schemes”. They include not only server-based electronic money

⁷ The cheque is not taken into account, as so few consumers now use cheques at the POS.

schemes, such as PayPal, but also procedures launched recently in Germany which are based on online bank transfers from the payer's account. The most popular of these is Giropay, a scheme set up and maintained by German credit institutions, which directs customers directly from the internet retailer's website to their own online banking application for payment. Another procedure, "SOFORT Überweisung", allows a technical service provider (non-bank) to set up a credit transfer for the payer in his/her online banking application.

■ 4. Empirical study of payment behaviour

As the previous section shows, consumers have a wide variety of payment alternatives to choose from. In essence, they have to choose between the possibilities of cash or use of a payment card. With this in mind, the study aims to determine

- what payment instruments (cash/cards) the public owns,
- how the various payment instruments are used and
- what factors determine which payment instrument is used.

For one week, respondents entered their transactions in a payments diary. This helped establish their actual behaviour. During the interview, they were also asked further questions about their card ownership and card usage with a view to collecting information above and beyond the one-week diary recording phase. Questions on factors influencing the choice of payment instrument at the point of sale were also included in the interview. Taken in its entirety – ie specific behaviour during the week plus additional information on the ownership, use and selection of payment instruments – the study therefore provides a comprehensive overview of payment habits in Germany.

■ 4.1 Ownership of payment instruments

We started by asking respondents which payment instruments they own. With regard to cash, respondents were asked how much they carry in their wallets and purses. With regard to cards, they were asked whether they carry payment cards with them and, if so, which, and how many.

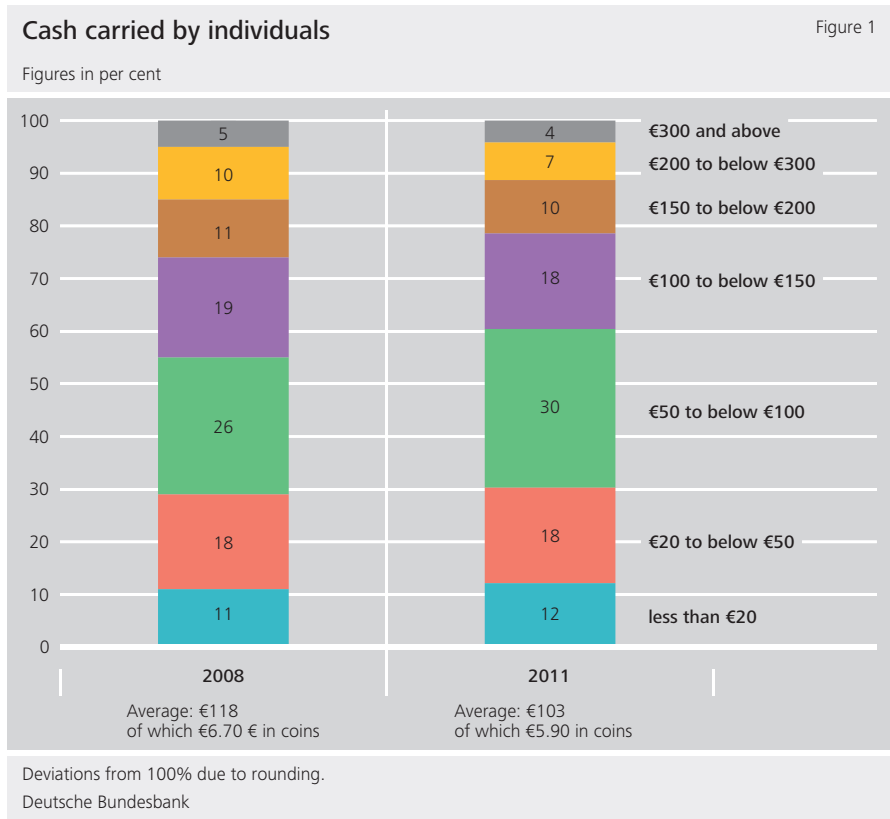
4.1.1 Cash carried by individuals

At the beginning of the diary recording week, the respondents calculated how much cash they had in their wallets or purses (for transaction purposes). On average, they carried approximately €103 on them, including € 5.90 in coins. This is €15 less than in the previous study. The share of those with between €50 and €100 on their person rose slightly, while the share of those with €100 and more declined slightly.

The amount of cash that people carry on them differs depending on various socio-demographic characteristics. For example, women carry an average of €96 in banknotes and coins, which is considerably less than the average of €110 carried by men. This is due to the fact that both the total value of all transactions and the total value of all cash transactions are lower on average for women than for men. Women also make slightly fewer transactions than men. This is all the more remarkable given that far more women claim to be responsible for day-to-day household purchases.

Other socio-demographic factors, such as income, also play a significant role. Respondents with a monthly net household income of less than €1,500 carry an average of €78. This increases to €118 when income rises to €3,000 or more. However, this is not due to a preference for cash. It is because respondents with a higher income tend to spend more. While those with a net household income of less than €1,500 spent an average of €171 in the diary week, the €3,000-plus income group spent an average of €446. The lower propensity of higher earners to pay in cash (see section 4.3.3) is therefore more than offset by higher spending, which leads them to carry more cash.

Age also influences the amount of cash in people's wallets and purses. 18 to 24 year-olds carry €52 with them, 25 to 34 year-olds €80, and all other age groups



carry approx. €114. In the case of 35 to 64 year-olds, this behaviour can most likely be explained by higher income, and in the 65 and over age group by an increased preference for cash. Almost half of all respondents over the age of 65 who own payment cards said that they pay exclusively in cash.

Overall, the results largely tally with those of the 2008 study. Women, younger people and people on lower incomes carry less cash than men, older people and people on higher incomes. However, the absolute level of cash carried in people's wallets and purses has fallen.

Public opinion of small coins and commercial rounding

Following the studies on “the development of coin circulation in Germany” (Münzgeldentwicklung in Deutschland) and “Payment behaviour in Germany”, respondents were asked to answer specific questions on coins in this survey. Specifically, they were asked to give their opinion of small coins (1 and 2 euro cents) and commercial rounding at the point of sale. The questions followed a predefined pattern, starting with a strong declaration in favour of small coins (“take care of the pennies and the pounds will take care of themselves”) and ending by asking whether they could be withdrawn from circulation altogether (see Figure 2).

The questions about commercial rounding and whether small coins could potentially be withdrawn from circulation were asked against the backdrop of the ongoing discussions – particularly abroad – about the cost of the denominational structure of coins. In the Netherlands, for example, commercial rounding was introduced in shops in 2004. When paying cash, the final amount at the point of sale is either rounded up or rounded down to the nearest five cents. When using cashless payment instruments, the exact amount is paid. In Finland, commercial rounding is regulated by law. The aim is to reduce the number of small coins in circulation and to cut costs for cash handlers.⁸⁾ The European Commission is also addressing the topic of small coins. It is carrying out an impact assessment of the continued issuance of 1 and 2 euro cent coins by analysing the actual cost of producing 1 and 2 euro cent coins in relation to their value and benefits.⁹⁾

⁸ For a detailed discussion on the costs and benefits of small coins, see Canadian Senate, The costs and benefits of Canada’s one cent coin to Canadian taxpayers and the overall Canadian economy, 2010.

⁹ See European Parliament, Report on the proposal for a regulation of the European Parliament and of the Council on the issuance of euro coins, 2012.

In Germany, consumers still pay the exact amount to the cent. The exception is the “Deutschland rundet auf” initiative, where, from 1 March 2012, customers in certain shops have been able to choose whether they wish to round up the final amount at the point of sale to the next 10 cents.¹⁰⁾ The difference is then donated to charitable projects. But what do Germans think of small coins and commercial rounding when no charitable causes are involved?

As Figure 2 shows, Germans clearly see small coins in a positive light. Most subscribe to the philosophy of “take care of the pennies and the pounds take care of themselves” and many regularly use small coins as a form of payment. Moreover, the majority of respondents are not in favour of their complete withdrawal from circulation. The general public seems to have become accustomed to handling small coins, possibly as a result of the unrounded prices charged by supermarkets.

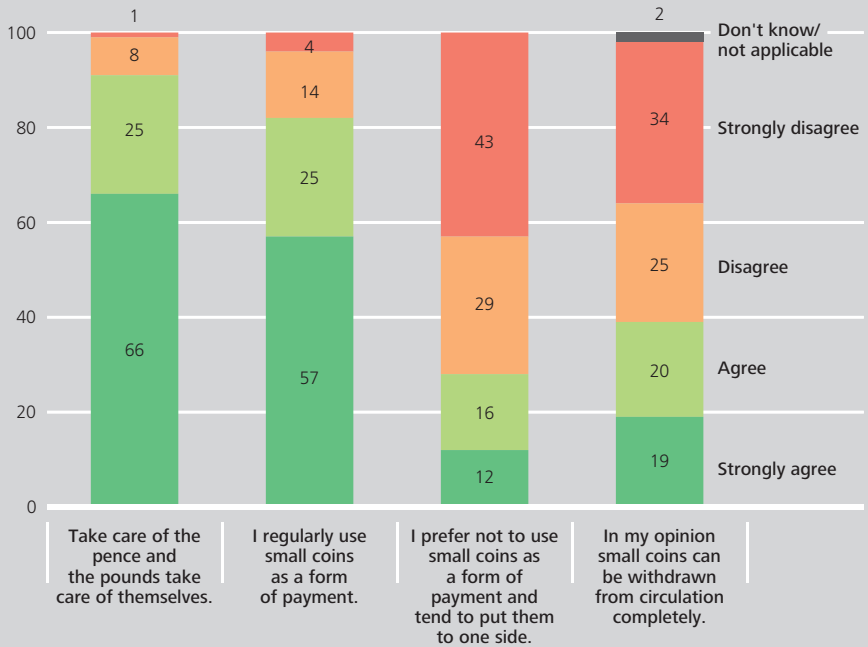
As to whether the final amount at the point of sale should be rounded up or down to the nearest five cents, opinion was divided. 44% were in favour, 48% against, although the most popular individual answer, accounting for 28%, was “definitely not”. 9% of respondents were indifferent with regard to commercial rounding. This is why no clear trend can be identified based on the interview questions.

10 See DEUTSCHLAND RUNDET AUF Partner GmbH, <http://www.deutschland-rundet-auf.de>, viewed on 6 September 2012.

Public opinion of small coins (1 and 2 euro cent coins)

Figure 2

2011, figures in per cent



4.1.2 Ownership of and familiarity with payment cards

The market for payment cards in Germany is dominated by the German banking industry's girocard debit card system. Normally, everyone with a current account in Germany is provided with a girocard. However, the actual number of cards in circulation does not necessarily correspond with perceived card ownership, as many people may not be sure which cards they actually have in their wallet or purse. Nevertheless, 94% of respondents said they own a girocard (2008: 91%).

The sharp rise in young card owners is particularly striking. 84% of 18 to 24 year-olds owned a girocard in 2008. In 2011, this figure had risen to 92%. This may be due to the increased availability of accounts for young people in this period. These are current accounts with no overdraft facility, ie they must have a positive balance. It could also be due to the fact that pupils now attend grammar schools (Gymnasien) for only eight years. After all, young people often become part of the cashless payment system – ie open their own current account – when they leave school or start working. This tallies with the information provided by people in gainful employment, 98% of whom own a girocard, compared with 89% in the case of those who are not in gainful employment.

As in the 2008 study, the second most commonly owned payment card, albeit quite some way behind, is the credit card. 33% of respondents said that they own a credit card. However, the growth rate of 6 percentage points is remarkably high (2008: 27%). This may be due to increased demand resulting from the ease with which credit cards can be used for online purchases. However, credit card issuers have undoubtedly also played a part in the increase by acquiring new cooperation partners (eg airlines and department stores). A further 64% of respondents said that they are familiar with the functions of credit cards or have at least heard of them. Familiarity with the credit card has therefore risen considerably by 18 percentage points since 2008, when it stood at 46%.

Payment card ownership in 2011 and changes since 2008

Figure 3



Ownership in 2011 is calculated from the ownership figure in 2008 in per cent plus the change in percentage points. **1** Total ownership in 2011 across all age groups. **2** Total ownership in 2008 across all age groups.

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Broken down by age, it is evident that, contrary to the development of the girocard, credit card ownership is stagnating among young card users between the ages of 18 and 24, but increasing in all other age groups. This is due to the risk management policies of banks when issuing credit cards. The majority of young people do not have a regular income. The age group as a whole therefore falls into a higher risk category with a greater risk of defaulting on payment. With a share of 36% to 44%, the credit card is most popular in the middle age category. With re-

gard to gender, considerably more men than women own credit cards. Employment status plays a significant role overall. Double as many people in gainful employment own a credit card as those not in gainful employment (43% compared with 20%).

In line with the results of the 2008 study, credit card ownership rises with income and level of education, although the gap seems to be widening. Only 10% of people with a household income of up to €1,500 own a credit card compared with 28% for those in the €1,500 to €3,000 category and as much as 52% for people with a household income of €3,000 or more. Because the girocard is so popular in Germany – and also free of charge from the customer’s perspective – the credit card, with its limited acceptance in Germany, is a more appealing option for target groups who travel extensively or spend more in general. Credit cards are often coupled with bonus programmes which reward higher sales. Many credit cards are also subject to an annual fee. All of these factors may help explain why credit card ownership increases in line with income.

Contrary to the development of the girocard and the credit card, perceived ownership of the GeldKarte is stagnating. As in 2008, just 21% of respondents said that they own this instrument. However, respondents’ subjective perception contradicts the continued increase in the prevalence of the GeldKarte. In the last three years, the number of cards had increased steadily to over 89 million by mid-2011.¹¹⁾ This shows that most owners of a girocard are still unaware of the GeldKarte function which is integrated in their card. The lack of effort on the part of the banking industry to promote the Geldkarte since it was first introduced in 1996 may help explain the lack of awareness of this function among users and acceptance points.

11 See EURO Kartensysteme GmbH, Die GeldKarte in Zahlen, https://www.geldkarte.de/_www/de/pub/geldkarte/presse/hintergrund-informationen/daten_zahlen_fakten/geldkarte_in_zahlen.php, viewed on 1 August 2012.

As in the 2008 study, prepaid credit cards, ie cards issued by the international credit card systems that have to be topped up prior to use, play only a minor role. Ownership of these cards decreased from 5% to 3%. Ownership of retailer cards with a payment function fell even more sharply. In 2008, 19% of respondents owned such a card compared with just 12% in 2011. Given the widespread availability of the girocard and increased acceptance of credit cards, most respondents believe that these cards offer little added advantage, as most stores also accept other payment cards. The discount incentives often associated with the cards are clearly not enough to compensate the disadvantages.

4.2 Customers' choice of payment instrument at the point of sale

As a result of the increased popularity of payment cards, as outlined above, the majority of consumers can choose between various payment instruments at the point of sale. But what factors influence the choice of payment instrument and determine whether cash or payment cards are used at the point of sale? As in 2008, study participants were asked this question in the interview.

When asked what criteria influence their choice of payment instrument at the point of sale, 21% of respondents in the last study said that they pay exclusively in cash. In the 2011 study, this question was broken down into two parts. The first question assessed whether respondents even wish to have a choice between various payment instruments at the point of sale. Respondents were able to choose between three possible answers – “I use only cash”, “I mainly use cashless payment instruments”¹² or “I use both cash and cashless payment instruments”. The second question aimed to establish the reasons for selecting a specific payment instrument and was answered by only those who said they used both cash and cards, thus ensuring that only those who actually wish to choose between cash and cashless payment instruments were asked to state their reasons.

In response to the first question, 28% of participants said that they pay only in cash, although only people who actually own cards were asked.¹³ This group will henceforth be known as “cash-only payers”, although the diaries show that they do not always adhere to this behaviour and also use cashless payment instruments.

¹² The wording “exclusively” use cashless payment instruments was purposely avoided as some shops, such as bakeries and kiosks, often only accept cash.

¹³ This could be seen as an increase compared with the 2008 study (21%). However, this interpretation calls for prudence due to the above-mentioned methodical changes in the study design.

12% of respondents said that they mainly use cashless payment instruments. The following table compares cash-only payers with predominantly cashless payers:

Characteristics of cash and predominantly cashless payers	
Cash-only payers tend to be...	Predominantly cashless payers tend to be...
very young or very old	middle-aged
on a lower income	higher earners
female	male
not in gainful employment	resident in eastern Germany

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These socio-demographic trends were observed on the basis of the self-assessments completed by the respondents and are also reflected in the actual payment behaviour recorded in the payment diaries. Section 4.3.3 provides a detailed analysis of socio-demographic characteristics.

Overall, 40% of respondents who possess both cash and cards said that they generally use just one payment method. By contrast, 60% of respondents do not decide how they are going to pay until they arrive at the point of sale. This group were then asked to specify the criteria which determine their choice of payment instrument at the POS.

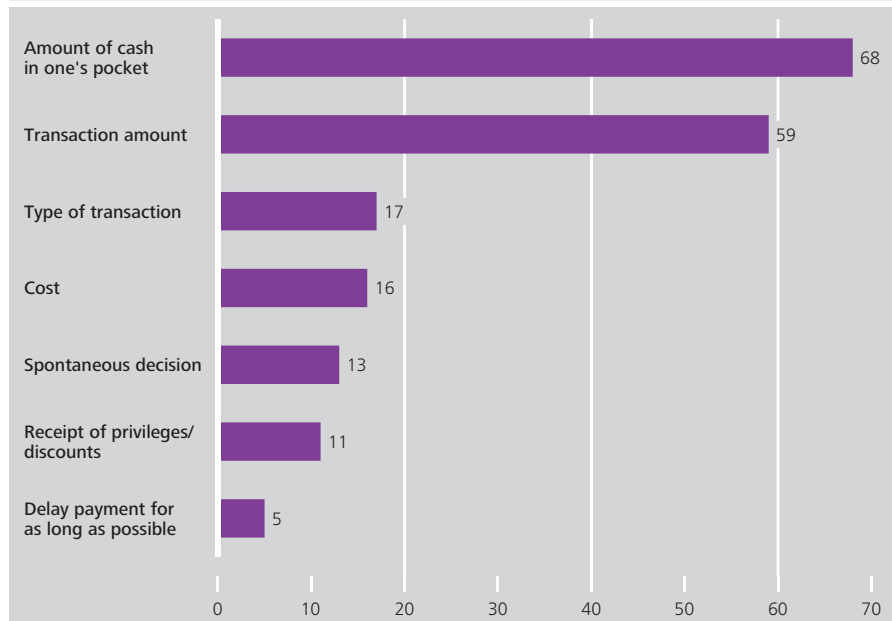
As in 2008, the amount of cash in one's pocket is the decisive factor when deciding how to pay. This would appear to be due to liquidity reasons. On the one hand, the amount of cash in one's pocket may not be enough to pay for the purchase.

On the other, the buyer may have enough cash, but would rather keep a certain cash reserve for other, possibly unexpected transactions which can potentially only be settled in cash (back-up reserve and liquidity motive). For this reason, people use cashless payment instruments above a certain subjective threshold so as not to further reduce the amount of cash they carry on them. The amount of cash available in one's wallet is of significant importance for younger respondents between 18 and 24 years of age. With regard to level of education, people with a college or university degree attach less importance to the amount of cash they have on them than those respondents with other school-leaving qualifications.

Criteria for selecting a particular payment instrument at the point of sale

Figure 4

2011, figures in per cent¹, multiple answers possible



¹ Only individuals who use both cash and cashless payment instruments when making payments.

As in 2008, the transaction amount was the second most important criterion when deciding which payment instrument to use. Cash tends to be used for small transaction amounts, while cards are used for larger amounts (section 4.3.2). This factor becomes increasingly important with age. For respondents with a college or university degree, the transaction amount often plays a greater role in their decision. Additionally, this criterion was particularly significant for German citizens compared with those persons living in Germany as foreign nationals.

The other criteria for the selection of a payment instrument followed some way behind – type of transaction, cost of using the payment instrument, spontaneous decision, receipt of privileges/discounts and delaying payment for as long as possible. Because not all retail outlets are equipped with processing terminals for cashless transactions, the selection decision is inevitably affected by the shop in which the purchase is made. The relative insignificance of the receipt of privileges/discounts and delaying payment for as long as possible reflects the low level of utilisation of payment instruments which feature such characteristics (eg credit cards). 13% of respondents say that they spontaneously decide which payment instrument to use. People who are generally part of the workforce, but not currently in gainful employment (eg because they are on parental leave) are least likely to make spontaneous decisions and are more likely to look out for privileges/discounts when shopping.

The ranking of the criteria for choosing a particular payment instrument at the point of sale has not changed since 2008.¹⁴⁾ This shows that preferences for the selection of cash or cashless payment instruments are relatively stable. At the same time, the market environment (acceptance of cashless payment instruments, cost of payment instruments or receipt of privileges/discounts) has essentially remained unchanged and therefore has not influenced consumer decision-making.

¹⁴ See Deutsche Bundesbank, Payment behaviour in Germany – an empirical study of the selection and utilisation of payment instruments in the Federal Republic of Germany, 2009, pp 37-39.

4.3 Payment behaviour recorded in the payment diaries

While the previous sections analysed ownership of payment instruments and the selection criteria for or against certain payment instruments based on the respondents' self-assessments, the following sections now look at the findings recorded in the payments diaries. These will also be evaluated according to socio-demographic criteria and place of payment. The analyses are rounded off with information on respondents' payment behaviour which go beyond a single diary recording week.

4.3.1 General trends and overviews

As in 2008, respondents in 2011 were asked to keep a payments diary for a seven-day period. For every transaction they made, they were asked to state where, or for what reason, they used one of the 14 specified payment instruments. They were also asked to make a note of the transaction amount. With regard to place or reason, respondents were able to choose between a variety of options, from retail trade for day-to-day needs (eg supermarkets) and online and mail order trade to payments effected between individuals. The aim was to record all payment transactions, with the exception of regularly recurring payments, such as rent, that are normally settled on a cashless basis. Payment instruments or technologies which were still classified as exotic at the time of the survey, such as contactless card payments and prepaid credit cards, were also available for selection. This allowed the Bundesbank to ascertain how prevalent these payment instruments actually are.

The payments diary was completed by 2,098 individuals who, in seven days, made a total of 19,870 transactions worth almost €600,000 (see Table 3).¹⁵⁾ It should be noted that only transactions where a payment method was specified were taken into account. Transactions including only an amount and/or place were not factored into the analysis. Some very large transaction amounts (€9,000 and over) were also excluded from the evaluation, as they would have distorted the calculations. The recorded transactions range from a few euro cents to several thousand euro. The average transaction value was €30, whereas the median, at €15, was half as much. This indicates that there were many smaller payments and only a few large payments.

The evaluation of spending revealed that cash is still the most popular payment instrument, accounting for a 53% share of turnover. Compared with the previous study on payment behaviour, the cash share has declined by almost 5 percentage points. By contrast, the use of payment cards is on the increase. The girocard was the second most frequently used payment instrument in the week under review, accounting for over 28% of turnover, almost 3 percentage points more than in 2008. Credit card transactions also rose by the same amount and now account for a share of 7.4%.¹⁶⁾ It is therefore the “classic” cards, which are already well established on the market, that are partly displacing cash. By contrast, the acceptance of certain instruments which were once thought to be innovative, such as the GeldKarte, is declining (turnover share 0.1%), whereas today’s innovative payment instruments and technologies (contactless cards, payment instruments based on mobile phone technology) are still in their infancy and are either rarely used or not used at all.

¹⁵ Weighted, there were 2,103 payment diaries. The number and value of transactions relates to the weighted payment diaries.

¹⁶ However, the proportion of turnover accounted for by credit cards is influenced by a small number of large credit card transactions. Based on the number of transactions, credit card usage has increased only moderately.

Share of payment instruments broken down by turnover and number of transactions in 2011 and 2008 Table 3

Note: The figures refer to the transactions made by the respondents (2,098 persons) during the diary recording week and are representative of Germany as a whole.

Payment instrument	Breakdown by turnover			Breakdown by number of transactions		
	Turnover in euro	Percentage share	Percentage share (2008)	Number of transactions	Percentage share	Percentage share (2008)
Cash payment	317,137	53.1	57.9	16,285	82.0	82.5
<i>girocard</i> with PIN	124,946	20.9	25.5	2,004	10.1	11.9
<i>girocard</i> with signature	44,147	7.4		665	3.3	
Credit card	44,369	7.4	3.6	360	1.8	1.4
Prepaid credit card	33	0.0	0.1	4	0.0	0.2
<i>GeldKarte</i>	782	0.1	0.5	48	0.2	0.5
E-payment scheme	10,115	1.7	0.3	148	0.7	0.1
Retailer card with payment function	715	0.1	0.2	11	0.1	0.1
Direct debit	4,268	0.7	1.9	58	0.3	0.6
Credit transfer	49,181	8.2	8.9	259	1.3	1,8
Contactless payment with a card	318	0.1	---	7	0.0	---
Other	1,269	0.2	0.4	21	0.1	0.2
Contactless payment via mobile phone	0	0.0	---	0	0.0	---
Other payment schemes via mobile phone	0	0.0	---	0	0.0	---
Total	597,280	100	99	19,870	100	99

Percentage share (2008): Missing percentage point to 100%: payment instrument not stated.

It is not just the share of cash payments that has fallen, however. Direct debits (0.7%) and credit transfers (8.2%) are also being used less frequently than in the past. Instead, the popularity of e-payment schemes (such as PayPal, Giropay and SOFORT Überweisung) has increased. They now account for a turnover share of 1.7%, which is not surprising given the dynamic growth in e-commerce.¹⁷⁾ As covered in section 5.1.3, respondents said in the questionnaire that they now make greater use of e-payment schemes and less use of the option of transferring the payment amount in advance. This payment behaviour is confirmed by the data recorded in the diaries.

Similar results can also be seen if the shares accounted for by the individual payment instruments are examined based on the number of transactions instead of the turnover share. While the share of cash payments measured in terms of transaction volume is significantly higher than when measured in terms of turnover share (82% compared with 53%), the opposite holds true for virtually all other payment instruments. This implies that, in many cases, cash is used for small payment amounts, but only rarely for settling large payment amounts. Other payment instruments are generally used for payments above a certain amount.

Table 4 provides an overview of the use of certain payment instruments broken down into various transaction categories. Cash is mainly used for small amounts, but is also the most common payment method in the middle transaction amount categories. The very high level of usage for transaction amounts below €20 is certainly also connected with the fact that it is often not possible to pay by card in shops where transaction amounts tend to be smaller (eg in bakeries). Some retailers also set a minimum transaction amount below which debit cards are not accepted. It would appear that consumers also set themselves certain transaction limits before resorting to paying by card. When asked from what amount they usually use cards

¹⁷ See Bundesverband des Deutschen Versandhandels e.V., <http://www.bvh.info/zahlen-und-fakten/allgemeines/>, viewed on 7 September 2012..

and other cashless payment instruments, less than 5% of respondents said they use these instruments for amounts under €20. It is therefore not surprising that the girocard is only regularly used for amounts above €20, but also for amounts up to €500 and more. Credit transfers and credit cards play a more significant role for amounts above €100. These latter two payment instruments are therefore used for certain transaction amounts or transaction types (eg when travelling, see section 5.2), whereas the girocard has almost become an “all-purpose” payment instrument.

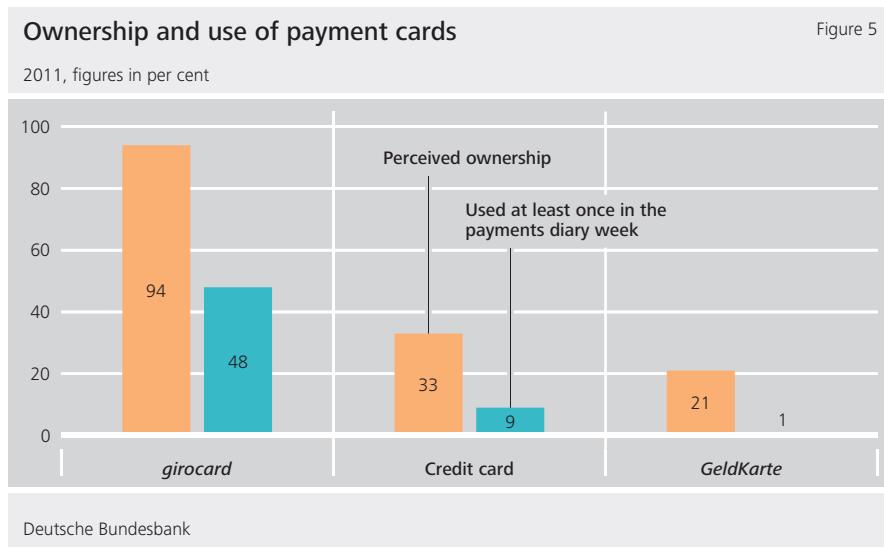
Compared with the data from 2008, cash is used more rarely in the upper amount categories. By contrast, there has been a noticeable rise in girocard and credit card usage. Those who pay larger amounts in cash are therefore increasingly in the minority.

Share of payment instruments broken down into various transaction amount categories

Table 4

Note: The table shows the shares of the payment instruments used in the respective transaction amount category, measured in terms of the total transaction volume. This means, for instance, that 98.3% of all payments up to a value of €5 were settled in cash.

	below €5	€5 to €20	€20 to €50	€50 to €100	€100 to €500	€500 and above
Cash payment	98.3%	94.5%	73.8%	46.0%	26.0%	11.2%
<i>girocard</i>	0.6%	4.1%	21.4%	41.9%	43.1%	30.7%
Credit card	0.2%	0.2%	2.2%	6.0%	12.3%	23.8%
E-payment scheme	0.0%	0.6%	0.8%	1.7%	3.4%	2.9%
Credit transfer	0.0%	0.3%	1.3%	2.9%	12.4%	31.4%
Other cashless payment instruments	0.9%	0.4%	0.5%	1.4%	2.8%	0.0%
Total	100%	100%	100%	100%	100%	100%



4.3.2 Use of payment cards

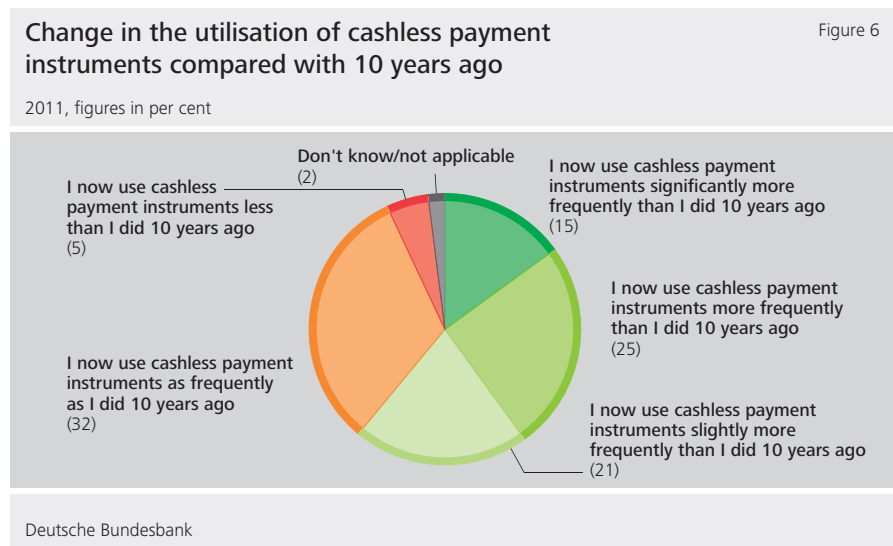
Use within a one-week period

Cash continues to be the most popular payment instrument. 95% of respondents made at least one cash transaction in the course of the week, which in turn means that 5% of all respondents used only cashless payment instruments during the seven-day period. The share of respondents who used a card at least once during this period has stagnated compared with 2008, despite a general upward trend.

Almost half of all respondents (48%) used a girocard at least once during the diary recording week compared with the just under one-tenth (9%) who used a credit card and only 1% who used a GeldKarte (see Figure 5). Compared with 2008, this is a moderate rise of 2 percentage points for the girocard and one percentage point for the credit card, while use of the GeldKarte fell by 2 percentage points. Based on the respective cards actually owned by respondents, 51% of girocard owners and 33% of credit card owners used their card in the diary week.¹⁸⁾

Utilisation over a ten-year period

To evaluate how the utilisation of cashless payment instruments has changed over the last 10 years, respondents were asked to state to what extent they now use cashless payment instruments more frequently than they did 10 years ago.¹⁹ This was the first time this question had been included in the interview. A clear majority – 60% of respondents – said that they now use cashless payment instruments more frequently than they did in the past. 15% said “significantly more frequently”, 25% said “more frequently” and 21% said “slightly more frequently”. While 32% reported no change in their payment behaviour, 5% indicated an increase in cash usage. These results confirm the increased significance of cashless payment instruments as a long-term trend.



18 94% of girocard owners and 93% of credit card owners also said that they had used their card within the last year.

19 Only those over the age of 18 ten years ago were asked this question.

4.3.3 Socio-demographic evaluation of payment behaviour

The previous section focused on the general indicators for the utilisation of various payment instruments. Little reference was made to socio-demographic considerations. This section will now analyse the use of payment instruments in connection with personal factors relating to respondents. The analysis will focus on age, education and net household income. The relationship between the use of various payment instruments and gender, origin (western and eastern Germany) and employment status is also investigated. The impact that individual characteristics have on the intensity of usage of the individual payment instruments are generally analysed separately. There is, however, sometimes a correlation between the individual socio-demographic characteristics.²⁰⁾ Unless otherwise stated, all percentages refer to the share of turnover accounted for by the individual payment instruments in the respective groups.

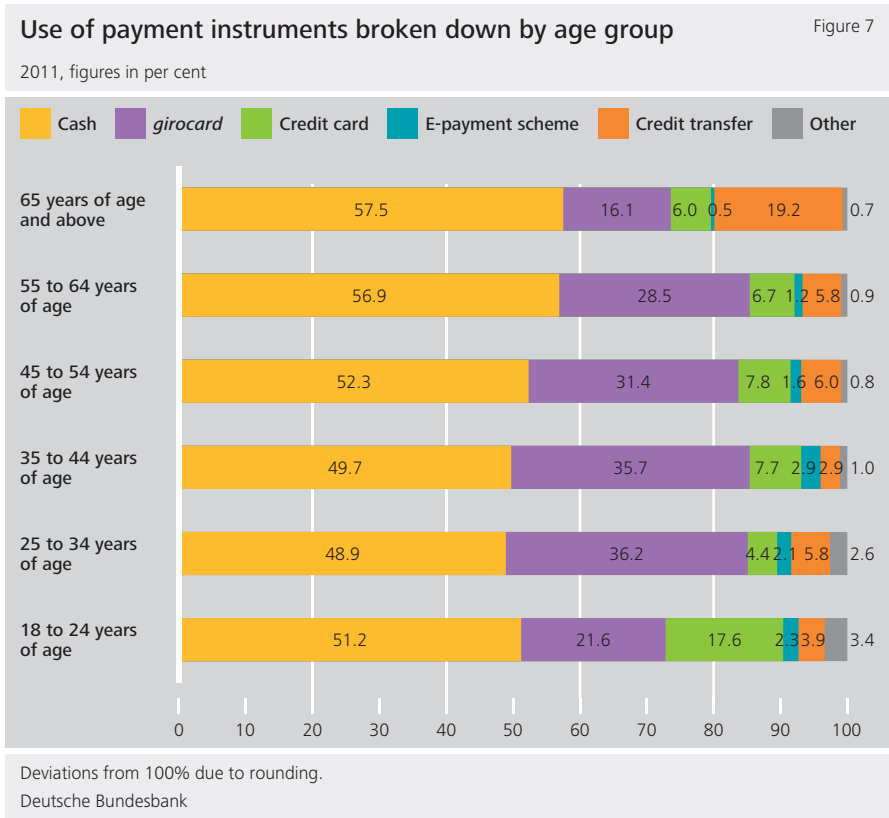
Age

Essentially, cash is by far the most popular payment instrument across all age groups. The picture is relatively clear-cut in the case of cashless payment instruments, too. The girocard is the preferred cashless payment instrument.²¹⁾ However, the utilisation of cash and cashless payment instruments varies across the age groups. Younger (18 to 24 year-olds) and older respondents (55 years and above) use cash more frequently than other age groups.²²⁾ This can be explained by the

20 While there is a measurable correlation between a person's age and level of education and between a person's level of education and income, the connection between age and income tends to be loose.

21 Only in the over-65s category is the credit transfer the most commonly used cashless payment instrument. However, this can be explained by the fact that people in this age group have fewer larger items of expenditure.

22 At first glance, the younger age group does not seem to make much more use of cash than the middle age groups. However, this view is skewed by a few very high credit card transactions. When seen in conjunction with the number of transactions, the percentage of cash transactions is much higher than in the 25 to 54 age group. Accordingly, cash accounts for around 83% of transactions by 18 to 24 year-olds compared with around 77% for 35 to 44 year-olds, while over-65s use cash for more than 89% of transactions.



many small payment amounts that lend themselves to the use of cash. Only 8% of all transactions made by 18 to 24 year-olds have a value of over €50. Respondents aged 65 or older paid for 12% of purchases in cash. In the other age categories, transactions of this amount account for between 15% and 19% of all transactions. The fact that payment cards are slightly less prevalent in these age groups also goes some way to explaining the increased use of cash. While the middle age groups own a disproportionately high number of payment cards, older persons in particular own far fewer payment cards than would be expected on the basis

of a proportional distribution across the population.²³⁾ A smaller selection of payment instruments is therefore available to this age group, which facilitates the use of cash. However, it is not just the high proportion of small transactions and the low prevalence of payment cards that cause older respondents to use cash more frequently. Older respondents feel that cash fulfils the characteristics they consider important for a payment instrument, such as convenience and familiarity of use, particularly well.²⁴⁾

Education

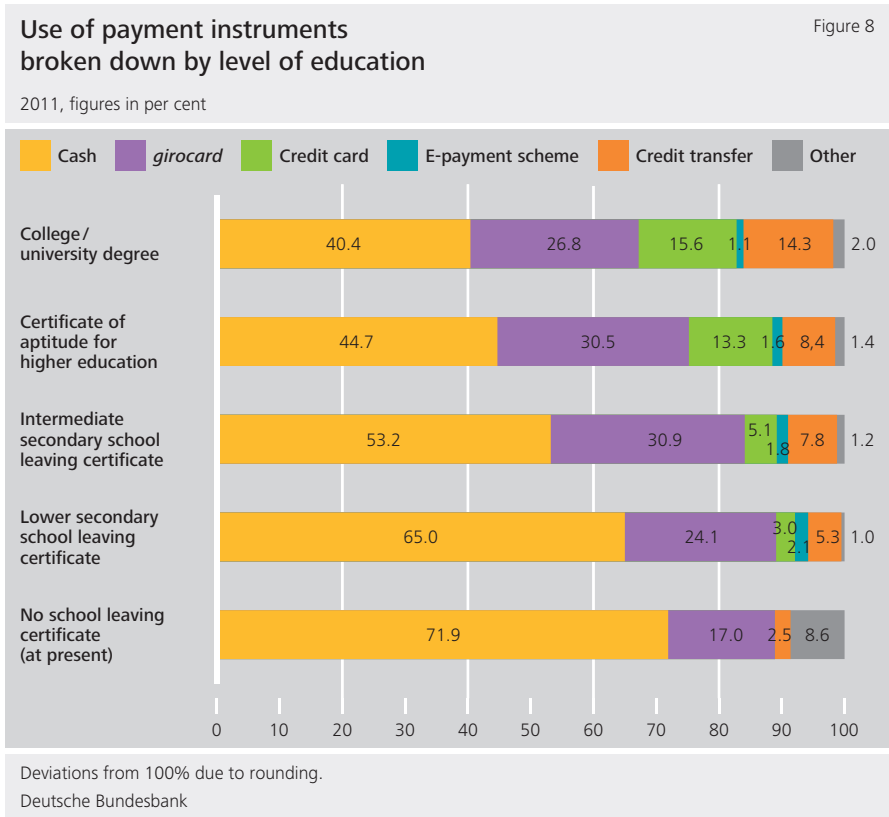
In addition to age, level of education, based on the qualifications achieved, also affects the use of payment instruments. In general, people with a lower level of education tend to use cash more frequently to pay for purchases, while people with a higher level of education tend to make greater use of cashless payment instruments. Nonetheless, cash is still the most popular payment instrument across all levels of education. As with the analysis of age, the most commonly used cashless payment instrument is the girocard. Accounting for around 72% of all expenditure, cash is used most frequently in the group of people with no qualifications (as yet). However, this number should be viewed with caution due to the small number of cases. As the level of education rises, so too does the propensity to use payment cards.²⁵⁾ In the case of people who left school with a certificate of aptitude for higher education or a college/university degree, the share of girocard and credit card payments is roughly on a par with that of cash payments.²⁶⁾ People in the

23 In line with the relative population density in the individual groups.

24 See Deutsche Bundesbank, Payment behaviour in Germany – An empirical study of the selection and utilisation of payment instruments in the Federal Republic of Germany, 2009, pp 8-36.

25 People with intermediate secondary school leaving certificates are not taken into further consideration in the analysis, as the shares of various payment instruments relative to total expenditure correspond roughly to the average for all people.

26 The decrease in the utilisation of the girocard from around 31% for respondents with a certificate of aptitude for higher education to 27% for those with a college/university degree can be explained by the high proportion of credit transfers in this education category, caused by the fact that few large payments are made per credit transfer.



highest education groups are much more likely to own payment cards, especially credit cards. Credit card ownership is 70% higher than would be expected based on a proportional distribution²⁷⁾ across all education categories. Accounting for well over 10% of transactions, the credit card is especially popular in the group.

Net household income

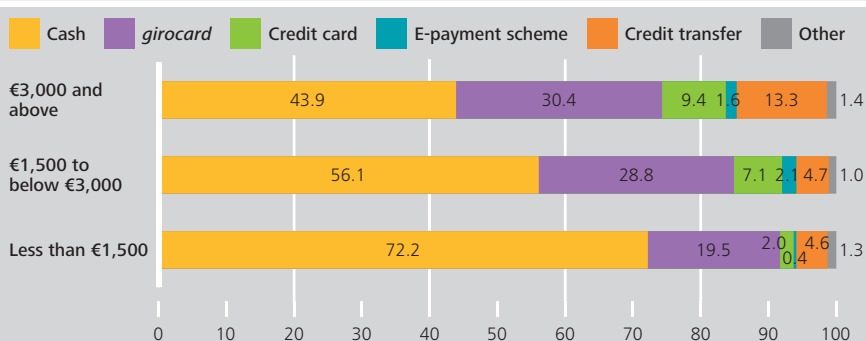
This section addresses the extent to which net household income influences payment behaviour. As shown in Figure 9, cash is more popular among respondents

²⁷ In line with the relative population density in the individual groups.

Use of payment instruments broken down by household income

Figure 9

2011, figures in per cent



Deviations from 100% due to rounding.
 Deutsche Bundesbank

with lower household incomes, while the use of cashless payment instruments increases in line with household income.²⁸⁾

In the category with monthly net household income of less than €1,500, 72% of all payments were settled in cash. This can be attributed to the fact that, compared with other income categories, payment cards are less readily available in this group and to the large number of small transaction amounts. Individuals with a lower household income also have a greater need to keep their spending in check. Cash would appear to be an appropriate payment instrument for this purpose.²⁹⁾ The influence of lower incomes on payment behaviour dovetails with other socio-demographic factors. On the one hand, there is a disproportionately high number of people over the age of 65 in this group. On the other, a disproportionately high

²⁸ Respondents who provided no information about their household income were not included in the analysis (160 persons in total).

²⁹ See U von Kalckreuth, T Schmidt, H Stix, Using cash to monitor liquidity, Deutsche Bundesbank Discussion Paper, Series 1, No 22/2011.

number of people in the lowest income category have a lower secondary school leaving certificate, which probably also relates to the age structure. The higher utilisation of cash by people on lower incomes is therefore partially obscured by age and education.

The propensity to use cash decreases as household income increases. While cash still accounts for around 56% of total expenditure in the middle income category, this proportion falls to just 44% in the category with a monthly net household income of over €3,000. Logically, the highest income category accounts for the largest share of transactions with a value of more than €50. Since cashless payment instruments are primarily used for payments of this amount or more, the high utilisation of the girocard (around 30%) comes as no surprise. People in this income category also make greater use of credit cards. The use of payment cards may be due to the above-average prevalence of such cards in this group. It should also be noted that the highest income category consists largely of middle-aged people with a high level of education, which also influences the choice of payment instrument.

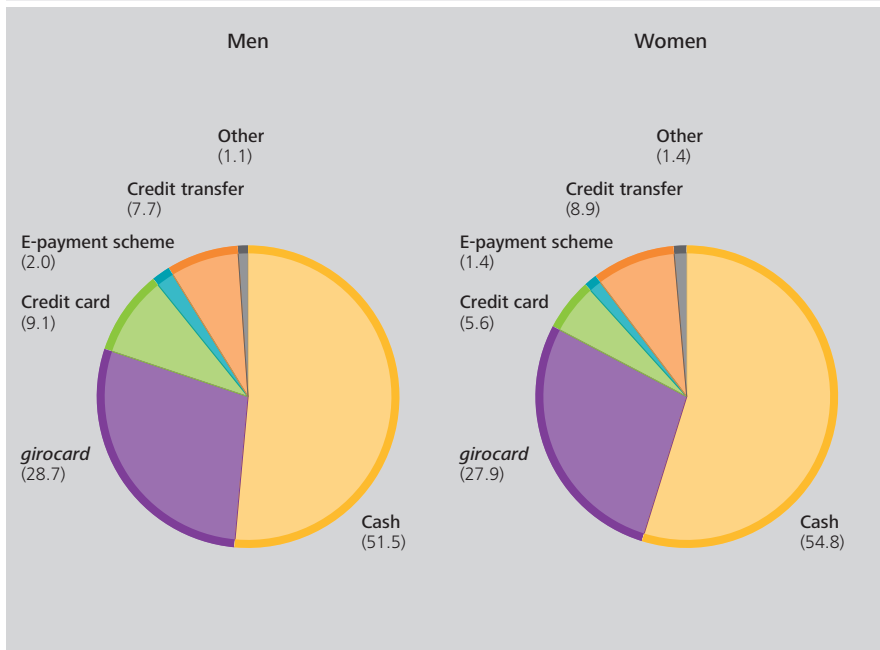
Gender

In general, there is no major difference between men and women when it comes to the utilisation of cash and cashless payment instruments. Both the use of cash and the share of girocard payments relative to total expenditure are virtually identical. The slightly higher share of cash used by women may be attributable to other socio-demographic factors. Women are over-represented in the 65 and over age group, tend to have a lower income and are less likely to have a college/university degree. The credit card is the only instrument where a significant difference can be observed between men and women. While men use credit cards to pay for around 9% of their expenditure, women only use them for around 6% of their payments. This is likely to be due primarily to the fact that significantly more men than women own credit cards.

Use of payment instruments broken down by gender

Figure 10

2011, figures in per cent



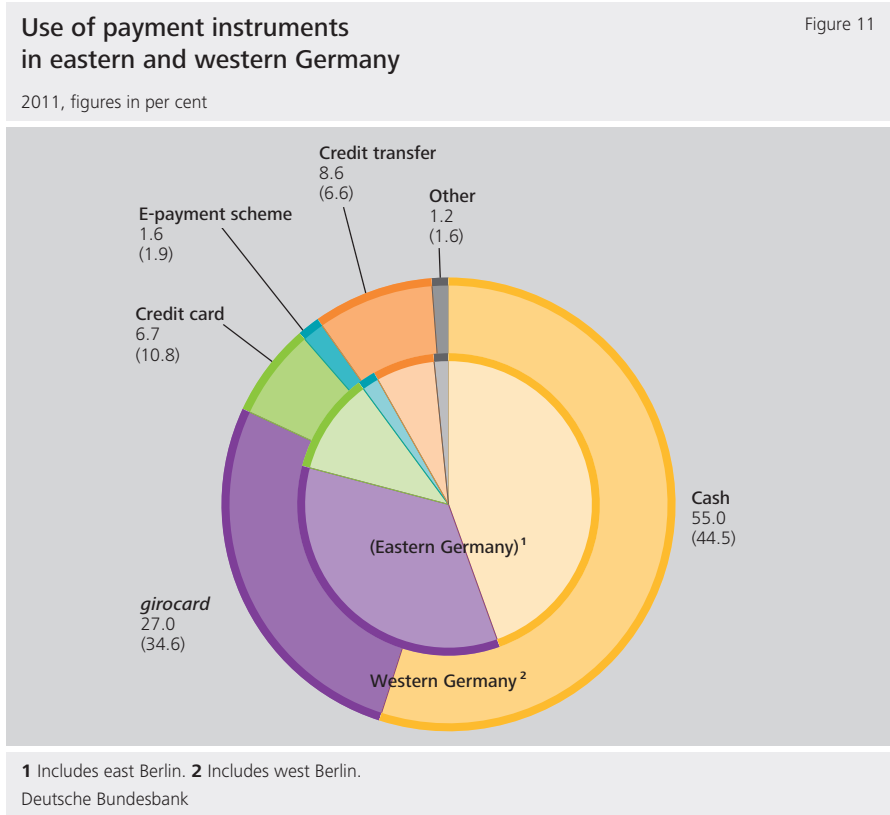
Deviations from 100% due to rounding.

Deutsche Bundesbank

Eastern and western Germany

For the purpose of the study, a distinction is made between people in eastern and western Germany³⁰ and marked differences can be observed in how individuals in these two parts of the country use cash. While people living in western Germany use cash for around 55% of their total spending, those living in eastern Germany use cash for only 45% of their spending. This trend is mirrored with regard to the

³⁰ When determining the place of residence, west Berlin is included in western Germany and east Berlin in eastern Germany.



girocard and credit card, which are used more frequently in eastern Germany. Although socio-demographic factors, such as age and income, would suggest that people living in eastern Germany would be more inclined to use cash, the opposite is in fact true.³¹⁾ A greater prevalence of payment cards in eastern Germany cannot

31 In eastern Germany, persons aged over 55 were overrepresented in the survey. Furthermore, a disproportionately high number of east Germans were represented in the lowest income category of below €1,500. The only factor that would explain the greater preference for card payments of east Germans is the disproportionately large number of persons with a college or university degree in eastern Germany compared with western Germany.

be substantiated on the basis of the survey data, ruling out this explanation, too. This leaves just the transaction amount as the sole factor which could explain the greater affinity of east Germans to payment cards. In actual fact, transactions with a value of €50 and above account for a 17% share of total expenditure in eastern Germany, compared with 14% in western Germany.

In view of the lower number of transactions,³²⁾ it is possible to draw the following conclusion. Payment card usage in eastern Germany is promoted by the fact that east Germans effect fewer transactions, but make larger-value transactions when they do.³³⁾ Furthermore, residents in eastern Germany purchase a disproportionately large number of goods online, where the use of cashless payment instruments is virtually unavoidable. The higher proportion of credit card payments as a percentage of total spending is, in all likelihood, due to the payments associated with online shopping (see section 5.1.2).

Summary

Payment behaviour is heavily influenced by age, education and income. As age increases, the propensity to use cash also increases markedly. Respondents aged 65 and over effected the most transactions using cash. Irrespective of age, individuals with higher levels of educational attainment and those with higher incomes tend to make greater use of payment cards. It is not always possible to isolate individual factors as they are correlated. Older respondents generally have a lower level of education and a lower level of income, whereas middle-aged respondents are generally better educated and enjoy higher levels of monthly net household income. The results of the survey confirm those of the 2008 survey. In 2008, too, the three

32 People living in eastern Germany effected 8.6 transactions on average during the diary week, whereas those living in western Germany effected an average of 9.7 transactions. This represents a percentage difference of around 13%.

33 A similar trend can be observed with regard to cash withdrawals. People living in eastern Germany visit the bank counter or ATM less frequently but withdraw larger amounts than those living in western Germany. See: Deutsche Bundesbank, *Where does the cash in your wallet come from?*, 2010, p 29.

afore-mentioned socio-demographic factors had a significant influence on payment behaviour. The impact of gender on the use of cash has decreased since the previous survey. However, there is still a clear difference between men and women when it comes to credit card usage. In addition, payment behaviour in eastern and western Germany still differs markedly. Payment behaviour in eastern Germany appears to be influenced less by personal characteristics and more by external factors, such as the amount and frequency of transactions, opportunities for shopping and infrastructure.³⁴⁾

In addition to socio-demographic factors, the study found that payment behaviour is also affected by the ownership of payment cards, the share of small-value transactions and the frequency of transactions.

4.3.4 Evaluation of payment behaviour by place/purpose of payment

This section looks at the preference for the use of certain payment instruments depending on the place and purpose of payment.

The majority of transactions (8,360) recorded in the payment diaries were retail purchases for day-to-day needs. They accounted for around 42% of all transactions made during the diary week. With a value of almost €191,000, this represented a share of 32% of the total value (€597,280) of purchases made during the week. The average transaction value in this category was approximately €23 and each respondent effected around four retail transactions for day-to-day needs over the course of the week. The second most common location in terms of the number of transactions was cafes/bars/snack bars and fast food restaurants, accounting for around 12% of transactions. The average transaction value in these

34 See: Deutsche Bundesbank, Payment behaviour in Germany – An empirical study of the selection and utilisation of payment instruments in the Federal Republic of Germany, 2009, pp 52-67

Number and value of transactions broken down by place/purpose of payment

Table 5

Payment location/ situation	Number of transactions		Value of transactions		Average value per	Average number of transactions
	Number	Share in %	Value in euro	Share in %	Transaction in euro	Per respondent
Retail purchases for day-to-day needs	8,360	42.1	190,921	32.0	23	4.0
Longer-term retail purchases	1,189	6.0	89,020	14.9	75	0.6
Filling station	1,647	8.3	72,540	12.1	44	0.8
Pharmacy	733	3.7	13,465	2.3	18	0.3
Services outside the home	728	3.7	46,437	7.8	64	0.3
Household services	166	0.8	11,721	2.0	70	0.1
Vending machines	791	4.0	4,827	0.8	6	0.4
e-commerce	290	1.5	21,798	3.6	75	0.1
Mail order	174	0.9	15,548	2.6	89	0.1
Restaurant	782	3.9	29,931	5.0	38	0.4
Cafes, bars, snack bars, fast-food restaurants	2,460	12.4	25,272	4.2	10	1.2
Leisure activities	674	3.4	16,280	2.7	24	0.3
Hotel, guesthouse	28	0.1	3,691	0.6	130	0.0
Payments to private individuals	553	2.8	16,498	2.8	30	0.3
Pocket money for children	362	1.8	8,025	1.3	22	0.2
Other	865	4.4	29,686	5.0	34	0.4
Location not specified	64	0.3	1,619	0.3	25	0.0
Total	19,870	100.0	597,280	100.0	30	9.4

locations was €10, significantly below the average transaction value for day-to-day retail purchases. Measured in terms of turnover, retail purchases of longer-term acquisitions rank second. The average transaction value of around €75 in this location is significantly higher than the average values in the two above-mentioned payment locations/situations. On average, respondents spent the most on hotels and guesthouses (€130).

As the payment amount is a fundamental criterion when deciding between cash and cashless payment instruments, the use of the various payment instruments also depends on the place of payment. In addition, it is not always possible to use certain payment instruments in all locations due to the fact that some payment locations do not have the necessary technical infrastructure (for example, kiosks and bakeries) and certain payment locations and payment purposes require the use of certain payment instruments (for example, mail order and e-commerce, payments between private individuals). The following section looks at the key differences between the use of the individual payment instruments and provides corresponding explanations.³⁵⁾

Cash is used almost exclusively to pay for children's pocket money, payments to private individuals and transactions in cafes, bars, snack bars and fast-food restaurants. This is due to the fact that these payments are often for small amounts and it is not usually possible to use cashless payment instruments for transactions between private individuals. The credit transfer is the most important cashless payment instrument for this type of payment.

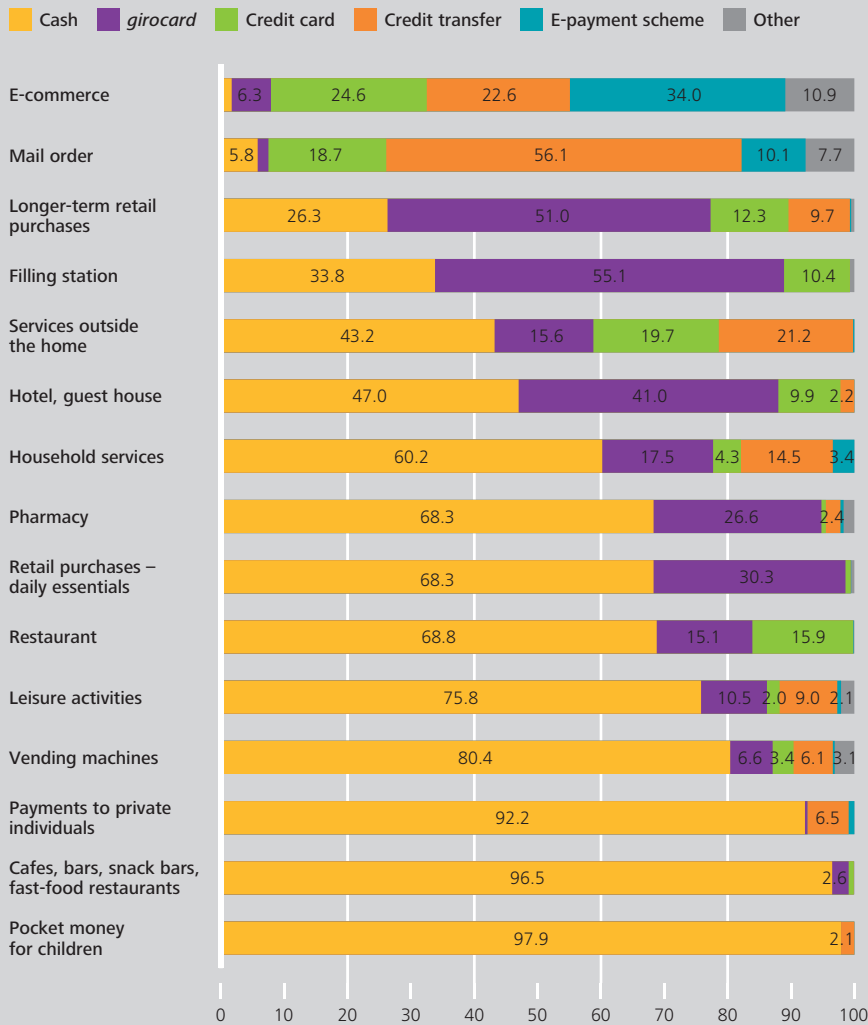
The majority of purchases at vending machines and restaurant transactions are also settled in cash. Owing to the extremely high number of low-value payments

³⁵ Unless otherwise stated, all percentages given refer to the value share of individual payment instruments in the respective groups.

Use of payment instruments broken down by place/purpose of payment

Figure 12

2011, figures in per cent



To retain an overview, the labelling of payment instruments accounting for less than 2% of the total volume is omitted.

(more than 97% of all transactions have a value of less than €20), cash is the preferred instrument for vending machine transactions. The low significance of the GeldKarte is particularly noteworthy here. Originally conceived to replace cash at vending machines, the GeldKarte was only used to settle just over 3% of all vending machine transactions.³⁶⁾ Payments up to a value of €50 account for the majority (almost 80%) of transactions in restaurants, and lend themselves to being settled using cash. The most popular cashless payment instrument in restaurants is the credit card.

Both in terms of the number and value of transactions, retail purchases for day-to-day needs is the most significant category in the payment diaries. Measured in terms of value, 69% of these transactions are settled in cash, followed by the girocard (30%). As in the last study, this may be due to the large number of small payments. The median value of such transactions is €13. girocard usage is likely to grow as a result of the widespread availability of card terminals in this location type.

Cashless payment instruments tend to dominate in payment locations such as hotels and guesthouses, filling stations, as well as for longer-term retail purchases, mail-order and e-commerce. While cashless payment instruments are used only slightly more frequently than cash in hotels and guesthouses, they are used much more frequently in other locations. The dominance of cashless payment instruments in hotels and guesthouses comes as no surprise owing to the high average value of transactions in these locations.³⁷⁾ The link between the high average value of transactions and the propensity to use payment cards is also confirmed at filling stations, where the girocard is the most popular payment method. The use of the

36 Of all the payment locations, the GeldKarte is most frequently used for vending machine transactions.

37 An interesting trend is the decrease in credit card use and the parallel sharp increase in girocard use compared with the previous survey. This shift may be due to the relatively low sample size in this category.

girocard at filling stations is also influenced by the fact that the majority of people visiting such locations are middle-aged. The majority of longer-term retail purchases are also settled using the girocard. 51% of total spending in this category is settled using a girocard. This high share of transactions corresponds with the high average payment value. Cashless payment instruments are traditionally used for online and mail-order purchases. While the credit transfer is the most common payment method for mail order transactions by some margin, for e-commerce purchases it has been displaced somewhat by e-payment schemes since the last survey in 2008. This may well reflect the age structure of online shoppers, the majority of whom are younger and middle-aged individuals who are clearly more open to using modern payment instruments than respondents from other age groups.

As anticipated, the use of payment instruments varies – in some cases, significantly – depending on the place and nature of the payment in question. In line with the results of the previous study, it was found that cash is favoured in locations where transaction values are generally smaller. By contrast, cashless payment instruments are used more frequently in locations with high average transaction values. There have been some changes in the use of the various payment instruments in some locations and situations since 2008. However, the preference for certain payment instruments in specific locations and situations remains stable.

■ 5. Use of cash and cashless payment instruments by payment situation

Following the analysis of payment behaviour by place and purpose of payment based on the payment diaries, this section will now look at the utilisation and reasons for using cash and cashless payment instruments in two different payment situations – shopping online and paying for goods and services while travelling abroad. To this end, respondents were asked to provide a self-assessment of their use of the relevant payment instruments as part of the questionnaire.

■ 5.1 Online payment behaviour

Given the increasing popularity of online shopping, the question of how and for what reasons payment instruments are used online is becoming ever more interesting. As the use of payment instruments online becomes increasingly significant in comparison with their use in traditional retail outlets, online usage is likely to have a growing influence on payment behaviour overall.³⁸⁾ This study therefore analysed online payment behaviour in greater detail than its predecessor. In particular, the use of online-only payment schemes, such as PayPal, Giropay and SOFORT Überweisung, was analysed separately as a reflection of their heightened popularity.

5.1.1 Internet usage

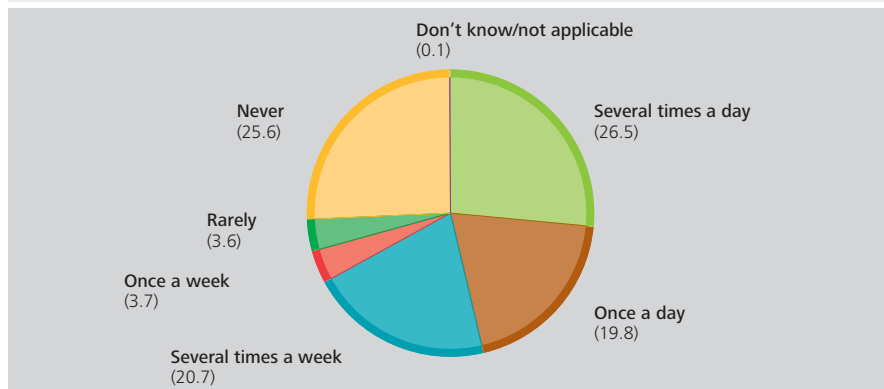
To gain a better overview of online payment behaviour, respondents were first asked about their internet usage. Almost half of all respondents use the internet

³⁸ Questions about which criteria are important to consumers when acquiring new payment instruments were not included this time round. This reflects the fact that these general attitudes are likely to remain fairly stable over time.

Frequency of internet usage

Figure 13

2011, figures in per cent



Deutsche Bundesbank

every day and one in four even use it several times a day. Only one-quarter of respondents said that they do not use the internet at all. Broken down by socio-demographic factors, our analysis shows that younger people, people with a higher level of education and household income as well as men use the internet more frequently. Moreover, a disproportionately high number of credit card owners are frequent internet users.³⁹⁾

5.1.2 Use of the internet for online purchases

Internet retail has grown by over 100% in the last five years and, for the first time in 2009, generated higher turnover than catalogue mail order.⁴⁰⁾ In 2011, online product sales amounted to €21.7 billion. Furthermore, the online market for services is

³⁹⁾ The results are consistent with those of the Initiative D21 study, (N)ONLINER – Topographie des digitalen Grabens durch Deutschland, 2010.

⁴⁰⁾ See KPMG/ EHI Retail Institute, Trends im Handel 2020, 2012, p 9.

constantly growing. In 2011, it generated turnover of €8 billion. At €29.7 billion, online sales accounted for around 7% of all retail sales in 2011.⁴¹⁾

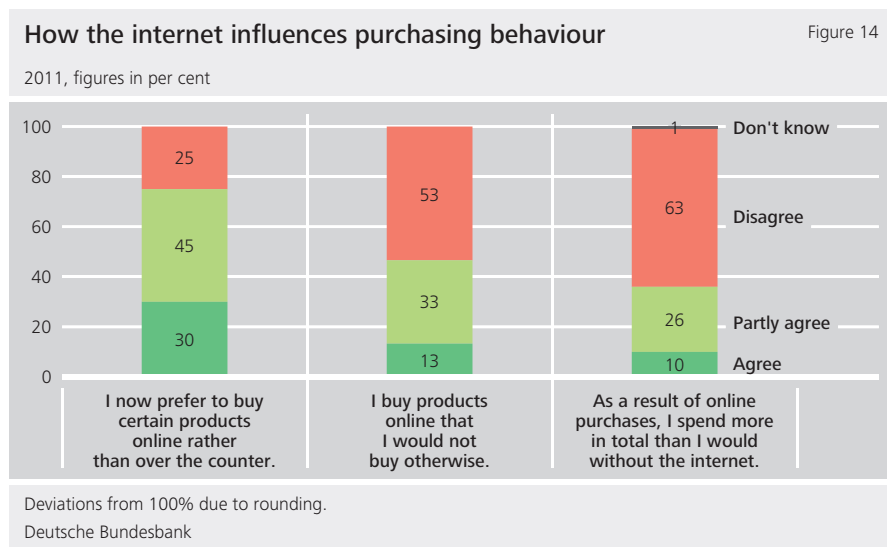
The increasing importance of the internet for retail purchases is also reflected in the results of the study. Compared with the last study, there has been a clear rise in the use of the internet for online purchases. While 58% of respondents said they never used the internet to shop in 2008, this percentage fell significantly to 43% in 2011.

The following analysis takes into account only those respondents who are internet users (64% of all respondents). Only 23% of internet users said that they never make online purchases, while one in four said that they shop online at least once a month if not more. As is to be expected, younger respondents are more active online shoppers, 18 to 34 year-olds shop online particularly frequently. With regard to household income, people on higher incomes tend to shop more often. It is particularly striking that there is little difference between how often men and women shop online, even though women spend far less time on the internet than men. Interestingly, respondents in eastern Germany shop online more frequently than those in western Germany, although internet usage in the east is generally lower than in the west. This significant discrepancy may be due to the fact that there are slightly fewer shopping facilities in eastern Germany.

With regard to online shopping habits, the proportion of respondents who would rather purchase certain products online instead of over the counter, as they have done to date, has risen by 5 percentage points to 30% compared with the 2008 study. Men in particular (33%) and people up to 34 years of age (35%) are over-represented in this group. Every second online shopper said that they do not allow

41 Bundesverband des Deutschen Versandhandels e.V., Interaktiver Handel in Deutschland 2011, 2012, p. 118, p 131f.

themselves to be seduced into making unintentional purchases. However, one in three (36% in 2011 compared with 32% in 2008) said that shopping online at least sometimes leads to additional spending. This is particularly common among young people up to the age of 24 (47%).



5.1.3 Online payment habits ⁴²⁾

Unlike over-the-counter retail, payments on the internet are largely settled on a cashless basis. The significance of internet-only payment schemes has increased steadily since the 2008 study. These are increasingly complementing – and, in some cases, displacing – traditional cashless payment instruments. According to the respondent self-assessments, online purchases in 2008 were mainly paid for by credit transfer after delivery and by advance payment by credit transfer. Nowadays,

⁴² These data are based on the answers provided in the questionnaire, ie they do not refer to behaviour actually recorded in the payments diary. They are based solely on the self-assessment of interview participants.

in addition to credit transfers after delivery (48%), the majority of respondents prefer to use e-payment schemes, such as PayPal, Giropay and SOFORT Überweisung. While the use of internet payment schemes has increased significantly by 21 percentage points to 31%, advance payments decreased by 16 percentage points to 26%. Men and users between the ages of 25 and 34 are particularly open to internet payment schemes, while respondents over the age of 45 prefer to use credit cards. Compared with 2008, there has also been a measurable rise in credit card usage by older respondents, while credit card utilisation in general has remained stable at 21%.

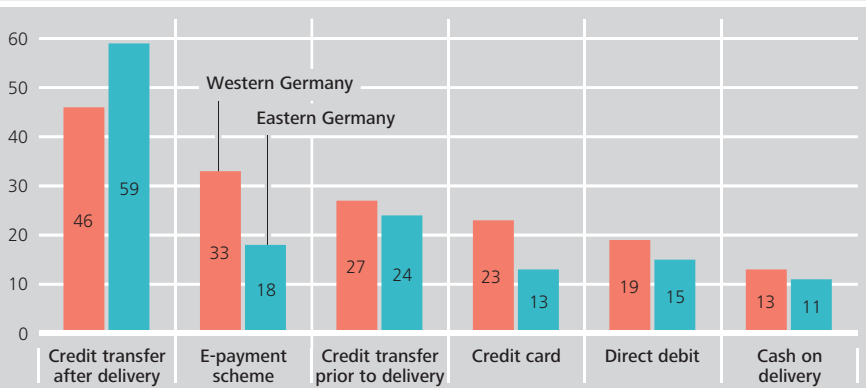
There are significant differences between respondents living in eastern and western Germany in general. East Germans prefer credit transfers after delivery followed by advance payments, while internet payment methods play only a minor role. By contrast, the two preferred payment methods for respondents in western Germany are internet payment instruments and payment by transfer after delivery. Credit card utilisation also varies greatly between these two groups. However, the fact that respondents in western Germany make greater use of credit cards could be attributable to the higher average net household income in this part of the country. After all, the higher the net household income, the more likely individuals are to own credit cards (see section 4.1.2) and the more likely they are to use them. Half of all credit card owners usually use their credit card to pay for online purchases. For this group, the credit card is the preferred payment instrument for making payments online.

Broken down by individual instruments, the study shows that 87% of all users of online payment instruments use PayPal, 9% SOFORT Überweisung and 3% Giropay. Very young (under 24 year-old) and older (over 55 year-old) respondents use PayPal disproportionately frequently. There are also marked differences in usage behaviour in the 25 to 34 year-old age group, 77% of whom use PayPal and 15% SOFORT Überweisung. Women use SOFORT Überweisung more than men, but

Payment of online purchases

Figure 15

2011, figures in per cent, multiple answers possible



Deutsche Bundesbank

only make slightly less use of PayPal. Neither level of education nor net household income has a pronounced effect on the intensity of use of individual instruments. Even respondents' geographical situation in eastern or western Germany has little impact. Those who prefer to pay cash in places or situations other than online use PayPal to the same extent as the average user, but make slightly greater use of SOFORT Überweisung (14%).

To sum up, the importance of e-payment schemes has increased significantly compared with conventional cashless payment instruments, especially the credit transfer. While the majority of respondents in 2008 did not consider the possibility to use a payment instrument on the internet to be particularly important, the results of the current study suggest that there is significant demand for specialised payment instruments.

■ 5.2 Payment behaviour when travelling abroad

To determine how individual payment instruments are used abroad, study participants were asked about their payment habits when travelling with the underlying aim of establishing whether frequent travellers acquire certain payment instruments, for instance, credit cards, for this reason and subsequently use these instruments for day-to-day transactions in Germany.

5.2.1 Within the euro area

One-quarter of respondents in Germany said that they never travel to other euro-area countries.⁴³⁾ Another quarter do so less than once a year, while the remaining half travel to other euro-area countries at least once a year. When asked which payment instruments they use when travelling, a majority of 82% of respondents said cash, followed by the girocard (50%) and the credit card (28%). On average, men travel more than women and tend to make more frequent use of cashless payment instruments. Younger (18 to 24 year-olds) and older people (over 65) travel the least and use cash disproportionately often, which reflects their payment behaviour in general. Middle-aged respondents (35 to 54 year-olds) travel most often and, as in everyday life, make frequent use of the girocard and credit card.

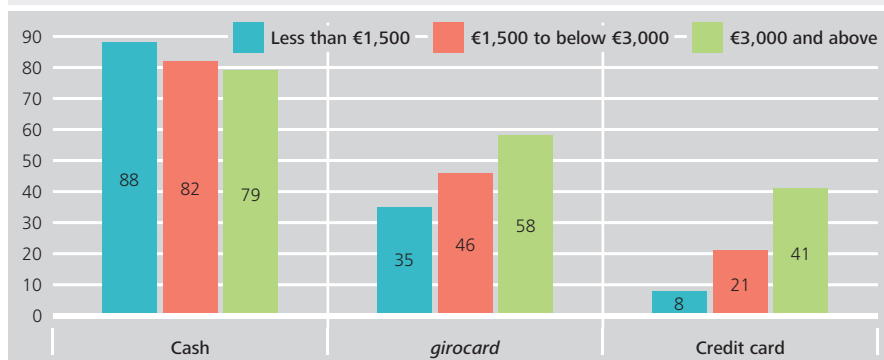
Broken down by net household income, there are major differences between the various groups. Every second person with a net household income of more than €3,000 travels to countries within the euro area at least once or twice per year, while this only holds true for one in five respondents with a net household income of less than €1,500. In addition to cash, higher-earners make greater use of the girocard and credit card, which tallies with their payment behaviour according to

⁴³ Taking into account both private and business trips.

Use of payment instruments in euro-area countries outside of Germany broken down by household income

Figure 16

2011, figures in per cent, multiple answers possible



Deutsche Bundesbank

the payment diaries. At 41%, this group makes far greater use of credit cards than any other group.

From the perspective of payment instruments owned by respondents, the information provided by respondents shows that credit card holders differ significantly from holders of other payment instruments. Two-thirds of credit card owners travel to other countries within the euro area at least once a year, while just 5% never travel to such destinations. This may imply that frequent travellers acquire a credit card specifically for the purpose of travelling. After all, credit card owners use this instrument more than twice as often as the average respondent (68% compared with 28%). Looking at the nationality of the respondents, it is hardly surprising that people with a migration background travel more frequently.⁴⁴ Only one in five people with a migration background never travel compared with one in four in the

⁴⁴ Respondents are deemed to have a migration background if they are foreign nationals or if they have acquired German citizenship at a later stage.

case of all other respondents, whereas people with a migration background tend to make greater use of credit cards (31% compared with 27%) and less use of cash (75% compared with 83%).

When asked to give their reasons for not using payment cards in other countries within the euro area, the answers were relatively consistent across all age groups and genders. 50% consider the risk of fraud to be too high, 43% worry about cost and 32% say they cannot rely on their card working. Other reasons, such as habit, fear of theft or sufficient cash play only a secondary role.⁴⁵ Broken down by socio-demographic criteria, the fear of fraud is much higher among respondents living in eastern Germany (60%) than those in western Germany (48%). By contrast, respondents with a migration background blame the cost. The level of net household income also has a significant effect on the ranking of reasons. As net household income rises, cost becomes much more of an impact, while the risk of fraud is less important. However, level of education appears to have no significant effect on the ranking and produces a very mixed picture.

5.2.2 Outside the euro area

Over half of all respondents said that they never travel to countries outside the euro area. With regard to payment habits outside the euro area, cash is still the most common payment method (77%), but is used 5 percentage points less than in countries within the euro area. With the exception of younger respondents (18 to 24 year-olds), the credit card plays a more important role outside the euro area than it does within the euro area. While the credit card is ranked in third place (28%) behind cash and the girocard for euro-area countries, it comes second (44%) ahead of the girocard (36%) for countries outside the euro area. This is because credit cards are more readily accepted worldwide than the girocard.

⁴⁵ Multiple answers were possible in response to the question about not using payment cards.

Accounting for around 50%, men and 35 to 54 year-olds travel most frequently and make most use of credit cards. By contrast, women and older respondents travel relatively rarely and tend to make greater use of cash. With regard to income and level of education, the results show that frequency of travel and credit card usage increase considerably as income and level of education increase. As is to be expected, people with a migration background travel to countries outside the euro area much more often than German nationals and, like travellers from western Germany, frequently use credit cards. As with travel within the euro area, credit card owners differ greatly from owners of other payment instruments. They tend to be frequent travellers – only one-third never travel to countries outside the euro area – and would rather pay by credit card (84%) than cash (just 67%). Those who prefer to pay in cash in Germany represent the other extreme. They travel least frequently and prefer to use cash outside the euro area, too. Only 12% of this group use credit cards.

As with journeys within the euro area, the majority of respondents said they do not use payment cards outside the euro area due to the high risk of fraud, irrespective of socio-demographic characteristics. 55% of respondents said the risk of fraud was the main reason, followed by cost of use (43%). 36% of respondents said they cannot rely on their card working. The fear of fraud increases with age. As with travel within the euro area, this is particularly true of respondents in eastern Germany. As net household income increases, the fear of fraud decreases – as is the case for travel within the euro area – and cost becomes a more significant factor.

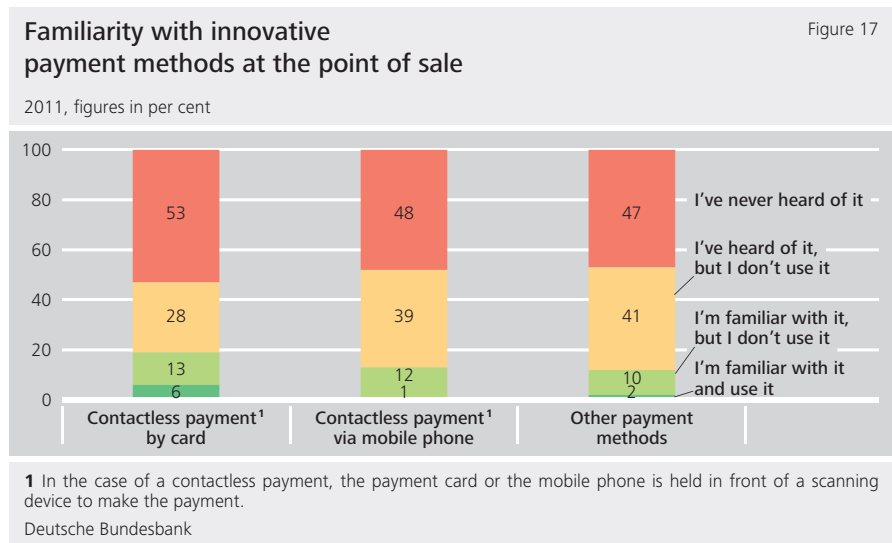
From the main reasons given for generally not using payment cards abroad, it can be concluded that users of payment services attach the greatest importance to security, cost transparency and acceptance. The findings also suggest that, broken down into their respective socio-demographic groups, respondents tend to stay true to their payment habits, regardless of whether they are at home or abroad.

6. Development of and outlook for payment behaviour in Germany

In contrast to the previous sections of this study which focussed on payment instruments which are currently widely used in the market, this section will now look at how payment behaviour is likely to develop in future. It will begin by looking at innovative payment instruments before going on to provide a general outlook.

6.1 Innovative methods of payment at the point of sale

Innovative payment methods are expected to become more prevalent in the German retail segment thanks to the girogo pilot project launched by the German banking industry to investigate contactless payment using near field communication (NFC) technology, which will be similar to procedures offered by the large



credit card companies MasterCard and VISA. In addition to the development of the necessary infrastructure on the customer side, terminal manufacturers have started to expand their range of NFC-compatible devices making it increasingly likely that an ever-growing number of retailers will offer NFC payment methods in the near future.⁴⁶⁾

These schemes were included in this study to reflect the growing interest in innovative payment methods at the point of sale. As part of the survey, three categories of innovative payment schemes were defined for the purposes of this study:⁴⁷⁾ i) contactless payment schemes using payment cards, ii) contactless payment schemes using mobile phones, and iii) other payment schemes using mobile phones. This study has deliberately avoided making detailed distinctions between the various instruments as the variety of technologies available and the specific defining characteristics of each, especially in the area of mobile payment services, would be difficult for the respondents to understand. The survey results must be taken in perspective, given that these instruments still play only a very minor role in the market. In the case of contactless payment schemes, in particular, this is largely due to payment cards lacking the necessary technology. Only a fraction of the payment cards currently in use in Germany are suitable for contactless payment. The same is also true of mobile phones. Only a few of the latest models are equipped with the necessary NFC technology. On top of these factors, contactless terminals are not widespread amongst retailers.

⁴⁶ EHI Retail Institute, Press release of 23 April 2012, <http://www.ehi.org/presse/pressemitteilungen/detailanzeige/article/mehr-kartenzahlung-mit-mehr-mobilitaet.html>, accessed on 6 September 2012

⁴⁷ Internet payment schemes are looked at separately in 5.1.3.

6.1.1 Contactless payment by payment card

Contactless payment using a card requires an NFC chip integrated into the EMV chip.⁴⁸⁾ The payment is initiated by holding the card directly in front of the terminal. It is therefore no longer necessary to insert the card into the terminal or to swipe the card through a card reader. Via radio technology, payment data and the payment authorisation are transmitted across a distance of just a few centimetres between the card and the terminal. This makes the payment process much faster, particularly when PIN entry is not required for small value payments. Small value payments usually have a threshold of €20 or €25 depending on the scheme. Contactless payments could therefore become an alternative to cash for such payments.

This type of technology is currently offered primarily by Visa (PayWave) and Mastercard (PayPass) and by the German banking industry under the girogo branding using GeldKarte cards. Contactless payment technology has also become firmly established in various sports venues. This usually involves either “open” schemes whereby the card used in the sports venue can also be used elsewhere (eg using contactless GeldKarte technology) or “closed” schemes which can only be used in the premises of the particular issuer.

Six per cent of respondents stated that they have heard of and had also used contactless payment card technology. A further 13% stated that they were familiar with such instruments and their characteristics and features. Given the very limited terminal infrastructure in retail stores, it is likely that a significant element of these respondents were familiar with contactless payment technology as a result of using

⁴⁸ EMV stands for Europay, Mastercard and Visa and is a global standard for card transactions developed by these three card issuers. The EMV chip is a chip found on payment cards which is based on this standard and allows secure communication between the payment card and the terminal.

cards in sports venues. Broken down by age, the results show that it is primarily the middle age group, ie people between the ages of 25 and 54, and male respondents, in particular, who are more open to contactless payment using payment cards, whereas older people were much less familiar with the technology and had also used it in fewer instances. It is surprising that the youngest respondents (18 to 24 year-olds) were also less familiar with contactless payment card technology. Awareness of the technology increases in line with the level of household income and education.

When those who had heard of contactless card systems, but did not use the technology were asked to explain their reasons for not using the technology, 48% stated that security was their primary concern. One in three respondents did, however, say that they do not see any need for innovative new payment instruments on the market. Complexity and a lack of opportunities to use contactless cards were the next most significant factors, although these were far less significant than the first two factors. Even though these beliefs are based on subjective impressions rather than practical experience in the vast majority of cases, they highlight the minimum requirements which future solutions will have to meet to allay the fears of potential users. It is envisaged that contactless cards will displace cash as a payment method, particularly for small value payments. This would, however, require card providers to develop strategies to win over people who pay primarily using cash.

6.1.2 Contactless payment via mobile phone

There are various technical possibilities for contactless payment using a mobile phone. The most popular solution involves transferring the data currently held on the chip or the magnetic strip of the payment card to a mobile phone equipped with NFC technology and to therefore enable the exchange of data between the mobile phone and the POS terminal. Some suppliers are also experimenting with

the interim solution of using an NFC sticker capable of storing all necessary data which can be attached to the mobile phone. In addition to NFC-based solutions, the use of other communication processes, such as QR codes, is also technologically conceivable.⁴⁹⁾ However, NFC-based solutions are favoured within the industry owing to their more intuitive use.

The survey showed that 52% of all respondents had heard of contactless payment using a mobile phone, while only 47% had heard of contactless payment using a card. This is particularly striking given the lack of availability of contactless payment instruments and correspondingly negligible usage of contactless mobile payment instruments (1%). The strong media presence of mobile payments is without doubt a possible reason for these high levels of awareness. Awareness was particularly high amongst young and male respondents. Of the 12% of respondents who stated that they had heard of contactless payment methods using mobile phones but did not use such technology, 44% cited security concerns as the reason for not using these instruments. Concerns of this nature became more prevalent as levels of household income increased. In contrast to contactless cards, men had fewer security concerns than women with contactless payment using a mobile phone. Almost one-third of non-users stated that they had no need for contactless mobile phone technology and therefore did not use it. The lack of availability as well as the complexity of contactless payment methods using mobile phones were less significant for respondents. Additional reasons were consistent with those given for contactless payment using cards.

49 The QR (Quick Response) code is a two-dimensional barcode. It is possible to embed any information in a QR code with the content essentially consisting of text data. This text can include a payment instruction which will be carried out after the code has been decrypted using a smart phone and special software.

6.1.3 Other payment schemes via mobile phone

There is now a range of contactless mobile phone payment schemes available on the German market. However none has really been able to establish itself. One example is m-pass which is provided by a consortium of three large mobile phone service providers and can be used to pay for online shopping. Another example is Touch&Travel which is currently being offered as a pilot project and can be used to purchase travel tickets easily via mobile phone through the use of contactless validation at the departure station (check-in) and destination station (check-out). Charges are calculated and levied by a supporting system. Moreover, it is already possible to pay for car parking or public transport tickets in many towns and cities using a mobile phone via SMS or special apps released by the respective transport companies.

Similar to other innovative technologies, familiarity with “other payment schemes via mobile phone” is also low. Only two percent of all respondents use this type of technology although 10% have heard of such instruments and their features. A further 41% had at least heard of this type of technology. On the other hand, that leaves 47%, or almost half of all respondents, who had not heard of any products of this type. When the results are analysed by socio-demographic factors, the groups most open to innovative technologies are young people, men and individuals with higher levels of household income. Use amongst 18 to 24 year olds, at 6%, was significantly above average, while use amongst individuals with net household income of €3,000 and above was 4%.

As with contactless payment, security concerns and a lack of need for innovative technologies were the most common reasons for not using “other payment schemes via mobile”. In contrast to contactless payment via card, women were much more sceptical than men with regard to security.

■ 6.2 Outlook for payment behaviour in Germany

While innovative payment instruments have potential for the future, they still play only a negligible role, as described above. So what are likely to be the short and medium-term trends for the use of payment instruments?

Despite the fact that cash now accounts for a smaller share of documented spending, banknotes and coins were still the most commonly used payment instrument in 2011. However, according to the transactions recorded in the diary week, cash payments fell from 57.9% in 2008 to 53%, a decrease of just under 5 percentage points. If this trend continues, the proportion of cash sales can be expected to fall below 50% in the medium term. Overall, the results of both Bundesbank studies confirm the results of the surveys conducted every year by the EHI.⁵⁰ These suggest that the share of cash used in retail in the narrower sense has fallen by just under 22 percentage points in 17 years.

The displacement of cash depends on a variety of factors. Firstly, the greater prevalence of payment cards. girocard ownership among all respondents has risen to 94% (compared with 91% in 2008) and 33% of respondents (compared with 27% in 2008) now own a credit card. But it is not just the prevalence of cards that is increasing. Cards are also being used more intensively. The share of girocard and credit card payments has increased by almost 7 percentage points since the last study. These results are supported by both the EHI figures and the self-assessments of respondents. The question relating to the respondents' payment habits today compared with ten years ago revealed that over half of the respondents use cash-

⁵⁰ The EHI is a research institute which focuses on the German retail industry. Its survey looks at retail turnover in the narrower sense, ie excluding the automobile industry, petroleum industry, pharmacies and mail order trade. The slight deviations between the turnover shares of various payment instruments in the Bundesbank's and the EHI's surveys are due to the much greater scope of the survey conducted by the Bundesbank.

less payment instruments more frequently today and only 5% said that they now use cashless payment instruments less frequently than they did ten years ago. The use of cashless payment instruments is supported by the rise in the number of retail outlets which accept these instruments. The number of terminals increased from around 593,000 in 2008 to just over 710,000 in 2011, an increase of 20%.

The increase in e-commerce is also leading to greater use of cashless payment instruments. In addition to traditional payment instruments, online payment instruments are becoming increasingly popular. While these new schemes are more likely to be in competition with other cashless instruments, this change in purchasing behaviour nonetheless affects the use of cash. If more products are bought online rather than over the counter, cashless payment instruments will be used more often.

There have also been a number of developments which promote the use of cash. The continued rise in the number of sources of cash means that consumers often do not need to substitute cash for cashless payment instruments. This is also supported by the rise in the number of ATMs and combined deposit and withdrawal machines from 55,500 in 2008 to 56,500 in 2011 and the introduction of the cash-back service at supermarkets and filling stations.

On the whole, the trend is slowly but continuously moving towards an increase in the use of cashless payments. However, this process is not self-propelling. Consumer preferences, the acceptance of payment instruments at the point of sale and the portfolio of payment instruments offered by banks and card issuers all determine the extent to which different payment instruments will be used in future. Added to this is the fact that, as the study shows, German consumers are conservative when it comes to their payment habits. Almost 60% of respondents said that they intend to continue using the payment instruments that they are familiar with, which is likely to counter any abrupt change in payment behaviour and would suggest that cash is likely to remain a popular method of payment in the years to come.

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Deutsche Bundesbank

Wilhelm-Epstein-Strasse 14
60431 Frankfurt am Main

Postfach 10 06 02
60006 Frankfurt am Main, Germany

Tel +49 69 9566-0

Fax +49 69 5601071

Website <http://www.bundesbank.de>

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Prepared by

Dr Heike Wörlen, Markus Altmann,

Dr Heike Winter, Johannes Klocke,

Julien Novotny, Robert Uhlitzsch

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