

## Payment behaviour in Germany in 2014

Third study of the utilisation of cash  
and cashless payment instruments





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Deutsche Bundesbank  
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## ■ Preface

Dear reader

Since their inception, the Deutsche Bundesbank's studies of payment behaviour in Germany have developed into a body of work that is expanded upon at three-year intervals. Following on from the studies conducted in 2008 and 2011, what you are holding are the Bank's findings for 2014. In its series of studies, the Deutsche Bundesbank investigates the attitudes of people in Germany towards various payment instruments and how they choose to pay at the point of sale.

Having now compiled three studies, it is becoming increasingly clear that Germans are only gradually changing their behaviour in terms of how they pay for goods and services. Any changes that have occurred to date hardly qualify as revolutionary, instead taking the form of small evolutionary steps. Cash remains the most preferred means of payment. However, consumers are increasingly using cards to pay for small and medium-sized amounts, often opting for e-payment schemes to settle their online purchase transactions. The younger generation, which is accustomed to using the internet and smartphones, is especially open to new smartphone-based payment methods.

The information contained in the study is of interest to all market participants affected by the payment behaviour of private individuals, most notably retailers, credit institutions, card issuers and, last but not least, the Deutsche Bundesbank itself. Players wishing to foster more innovation in the field of payments need to offer a genuine advantage over established schemes and procedures and, in particular, to heed users' perceived security needs.





The Deutsche Bundesbank, which manages cash payments and provides a framework for cashless payments in Germany, places a particular emphasis on making sure these transactions are effected efficiently and securely. The decision for or against a given payment instrument lies with the individual consumer and everybody has their own preferences in this regard, albeit subject to change over time. It is therefore important that the Deutsche Bundesbank regularly examines how these payment habits evolve in the course of time.

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

Is the slow but steady shift away from cash towards cashless payment at the point of sale (POS) still continuing in unmodified forms? Has this process accelerated or slowed down? These questions, among others, form the basis of this year's third study of payment behaviour. As in 2008 and 2011, in 2014 a representative sample of around 2,000 people in Germany was asked to provide information about their payment behaviour using a questionnaire and a payments diary.

The most important findings are as follows:

- The use of **cash** at the POS has stabilised at **53%** of recorded turnover. The **downward** trend in the use of banknotes and coins observed between 2008 and 2011 has **slowed** down considerably, at least for the time being. A 6-year comparison of the years 2008 and 2014 revealed an annual **fall** in the proportion of cash payments in terms of value of **0.8 percentage points per year**. Measured against the number of transactions, however, the proportion of cash payments fell more sharply than before: from almost 83% in 2008 to 82% in 2011, and now to 79% in 2014.
- Almost all respondents (97%) possess at least one **girocard**. Such cards now account for approximately **30% of turnover** at the POS. By comparison, their usage in 2008 stood at 25.5%. The number of payments effected by girocard as a share of all transactions is also rising continuously. Hence, the girocard is by far the most important cashless payment instrument deployed at the POS; it therefore provides a potentially sound basis for payment card-related innovations on account of its prevalence and very high level of acceptance in the retail sector.
- While **users** are becoming **more familiar** with **mobile** and **contactless** payment methods, to date these schemes have **failed to catch on**, not least because of

**limited acceptance** among retailers, but also due to a lack of consumers in possession of such contactless payment cards and mobile payment methods. From the perspective of consumers, security and any added benefit these methods may offer compared with traditional cashless payment instruments and cash are key when it comes to deciding for or against a given innovative payment instrument.

- **Goods and services are increasingly being purchased over the internet.** This development propels the use of **cashless payment instruments**. When paying online merchants, respondents now prefer specialised e-payment schemes over traditional means of cashless payment such as credit transfers.
- Half of customers cannot be swayed in their **choice of payment instrument**: **33%** of respondents state that they **always pay with cash**, while **17%** make use of a **cashless** option, wherever possible. In principle, a deep-set pattern of behaviour can make it difficult for payment innovations to gain ground.

Comparison of the three studies on payment behaviour now available reveals that German citizens are only **changing** their **payment behaviour incrementally** as they display little willingness to experiment with new instruments. Abrupt changes to these payment habits cannot be expected in the near future. That being said, the technologically literate generation growing up in today's society could usher in a wave of change in payment behaviour, not just because it is extremely open to innovative payment methods, but also because it is likely to be a reservoir of demand. In the medium term the outlook therefore remains unchanged, ie cash payments as a share of turnover will drop below the 50% mark.

## 2 Issue to be discussed, study design and classification

Is the slow but steady shift away from cash towards cashless payment at the POS still continuing in unmodified forms? Has this process accelerated or slowed down? These and numerous other questions are addressed by this third study on payment behaviour. The term ‚point of sale‘ refers to the location at which goods or services are sold and paid for. This usually means a retail outlet, but can also apply to other places, such as when services by craftsmen in households are provided on a delivery-versus-payment basis, or when mail order or e-commerce purchases are paid for. Each of the two preceding studies containing data from the years 2008<sup>1</sup> and 2011<sup>2</sup> had highlighted a trend towards gradually declining proportion of payments effected using cash. Cash payments as a share of turnover at the POS fell from a level of 57.9% in 2008 to 53.1% in 2011. According to both surveys, cash was therefore by far the most commonly used payment instrument, although debit and credit cards as well as specialised e-payment schemes gained in importance. Usage of innovative payment methods<sup>3</sup> such as contactless or smartphone payment remained at a low level. Nevertheless, since more individuals are becoming familiar with these methods and given their potential for development, these payment instruments are also examined by this study.

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1 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.

2 See Deutsche Bundesbank, Payment behaviour in Germany 2011 - An empirical study of the utilisation of cash and cashless payment instruments, 2012.

3 As a rule, such innovative payment methods are not entirely new payment instruments. Rather, they generally merely offer a new access channel (such as a mobile phone) compared with traditional payment instruments such as credit transfers, direct debits or card payments, or use new technologies for transmitting the payment data (such as contactless technology) (see Deutsche Bundesbank, Innovations in payment systems, Monthly Report, September 2012). Some consumers, however, perceive innovative payment methods as representing a new kind of payment instrument. Hence, in the text that follows, innovative payment methods are referred to as „payment instruments“ and shown separately, for example, from debit or credit card payments.

The market research institute MARPLAN was commissioned with carrying out the survey which was conducted between May and July 2014. The study is representative of persons over the age of 18 residing in private households in Germany. The random sample of respondents was taken on the basis of the ADM master sample<sup>4</sup> in a three-stage selection process.<sup>5</sup> At the beginning, this is a random sample of households by necessity but it is subsequently transformed into a sample of individuals by means of weighting according to household size. As an additional step, the sample weighting is adjusted in such a way that the distribution of respondents' socio-demographic criteria corresponds with the official statistics.

With regard to the research method, the 2014 survey is broadly in keeping with the two preceding studies. It is made up of two parts: a computer-assisted personal interview (CAPI) and a payments diary to be completed by the respondents themselves in the seven days following the interview. In total, 2,036 people filled out the questionnaire, 2,019 of whom also submitted the payments diary. The diary could be recorded in writing or by means of a smartphone app. Only 29 people chose to use the online facility, while 1,990 respondents opted for the paper-based version.

The contents of the payments diary were modified only slightly, while some alterations were made to the questionnaire. Various questions tackled by the 2011 study were omitted this time round, as they concerned one-off special topics that only needed to be covered once, such as personal attitudes towards small coins and rounding rules at the POS. Likewise, respondents were not asked again about their payment behaviour when travelling. By contrast, the topic „cash versus cashless payment instruments“ was examined in greater depth in order to find out in more

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<sup>4</sup> The ADM Master Sample is a standardised procedure for taking representative population samples in Germany. It was developed by Arbeitskreis Deutscher Marktforschungsinstitute e.V. (ADM).

<sup>5</sup> A fresh sample of respondents is taken for each wave of the study, so it does not constitute a panel study.

detail why respondents preferred the one payment instrument over the other. Among other features, the survey incorporated a small set of questions on virtual currencies such as bitcoin as well as a broad range of questions on the security of various payment instruments. To obtain an overview of payment habits for regularly recurring payments which are not generally settled in cash (such as rent and ancillary costs, insurance premiums, telephone bills), respondents were once again asked to enter an estimated amount for such payments in the payments diary. Finally, the design of the study was extended to include a brand new element, namely an experiment on individual attitudes to risk. Once the interviewer had finished asking the questions, the respondents had the opportunity to participate in a behavioural experiment designed to test their propensity to take risks. This was based on the assumption that payment behaviour differs depending on respondents' risk appetite.<sup>6</sup>

The focus of the 2014 study remains geared to presenting a reliable description of payment behaviour at the POS. Where useful and possible, the results from the latest study are compared with those recorded in 2008 and 2011. Chapter 3 below deals with ownership of and familiarity with the various payment instruments while Chapter 4 takes an in-depth look at payment behaviour as described in the payments diaries and answers to the questionnaire. Bringing the analysis to a close, Chapter 5 summarises the study's findings and paints a picture of what things could look like in the future with regard to payment behaviour in Germany. The attached glossary lists and describes the various payment instruments.

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<sup>6</sup> Some of the results generated by the newly-included questions are not analysed in great detail here and will instead be covered in further publications.

## 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 arising from rent, electricity, gas, telephone and the internet, as well as from insurance contracts, loans or tax payments. Since the aforementioned expenses account for a not insignificant chunk of households' total expenditure, this category of payment transactions was covered by a separate 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, regardless of whether these payments were standing orders or direct debits.

39% of respondents said that the relevant amount debited from their account each month was less than €600, while 58% said it was more than €600. 3% of respondents did not specify a figure. Compared with the 2011 study, the amount of regularly recurring payments has risen.<sup>7</sup> In that year, 42% of respondents reported regular expenses of up to €600 every month. Irrespective of the upward trend in regularly recurring monthly payments, it can be assumed that the information provided by respondents probably represents a lower limit of their frequently recurring payments, as some payments, eg for insurance, are in fact often only debited once or twice a year.

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<sup>7</sup> The survey did not seek reasons for the increase in regular expenses.



## ■ 3 Ownership of payment instruments

As in the Bundesbank's past two studies on payment behaviour, one research aim of this publication is to identify which payment instruments the German population owns and the number of such instruments they have in their possession. The study also seeks to identify the factors determining the use of these different payment instruments. With regard to innovative payment methods (see the list of payment instruments provided in the glossary), account is also taken of user awareness of specific instruments as many consumers are not yet familiar with these payment instruments.

### ■ 3.1 Cash carried by individuals

At €103, the amount of cash people carry on them remains unchanged compared with 2011. Only the subset of coins has decreased slightly: people were found to have small coins amounting to an average of €5.73 in their wallets and purses, as opposed to €5.90 in euro and cent coins in 2011.

In a more detailed examination of the amount of cash people have on their person, some differences were identified depending on various socio-demographic characteristics. As is so often the case when looking at payment behaviour, age plays an important role. While the youngest age group of 18 to 24 year-olds only carry €66 in their wallets and purses, this value rises with increasing age to €125 in the 65 and over age group. This correlates inter alia with a higher level of preference for cash payment<sup>8</sup>: almost half of respondents of pensionable age stated that they pay exclusively with cash whereas less than 30% of very young respondents below the

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<sup>8</sup> See Section 4.3 for further information on individual's preference for cash payment.

Cash carried by individuals in 2014, 2011 and 2008

Figure 1

Figures in per cent



Deviations from 100% due to rounding.

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age of 24 showed a strong preference for this form of payment. Furthermore, young people follow a different strategy when it comes to the amount of cash they carry on them and how they maintain this supply: they use cash machines more frequently and withdraw smaller amounts than older people who tend to make fewer withdrawals but withdraw higher sums when they do.

Respondents with a monthly net household income of less than €1,500 were found to carry an average amount of €86 on them, while the highest earners (ie those in the €3,000-plus income group) carried as much as €113 on their person. The

latter figure cannot, however, be attributed to a strong preference for cash payment: in relative terms, this preference is most pronounced in the lowest income bracket and narrows as net household income rises. Instead, the larger amount of cash carried by top-end earners can be explained by their higher level of expenditure. Respondents with a net household income of €3,000 or more spent €351 over the diary week, whereas people earning less than €1,500 spent just €144 over the same period. The greatest differences became visible when looking at the respondent's profession. For example, school pupils carry an average of no more than €35 in their wallets and purses, while this figure rises to €143 for self-employed persons. There is obviously a strong correlation with personal net income here.

Income also plays a role when drawing a comparison between respondents in eastern and western Germany. Those living in western Germany (including West Berlin) carry an average amount of €107 in their wallets and purses, while residents of eastern Germany carry €86 with them. On the one hand, west Germans are more likely to pay solely with cash. On the other hand, their average net income is higher.<sup>9</sup> According to their payments diaries, these respondents also spent more than their fellow countrymen in the east. These two factors may explain the relatively larger amount of cash carried by this group.

Overall, the results tally with those of the 2011 study. The German population's payment behaviour with regard to cash has remained stable and there are no signs at present of a continued downward trend in terms of the amount of cash carried by individuals.

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<sup>9</sup> <http://www.iwkoeln.de/de/infodienste/iw-nachrichten/beitrag/einkommensranking-hohewirtschaftskraft-reicht-nicht-immer-123518>, (Income ranking: A strong economy isn't always enough – available in German only, from the Cologne Institute for Economic Research), accessed on 10.12.2014.

### ■ 3.2 Ownership of and familiarity with payment cards

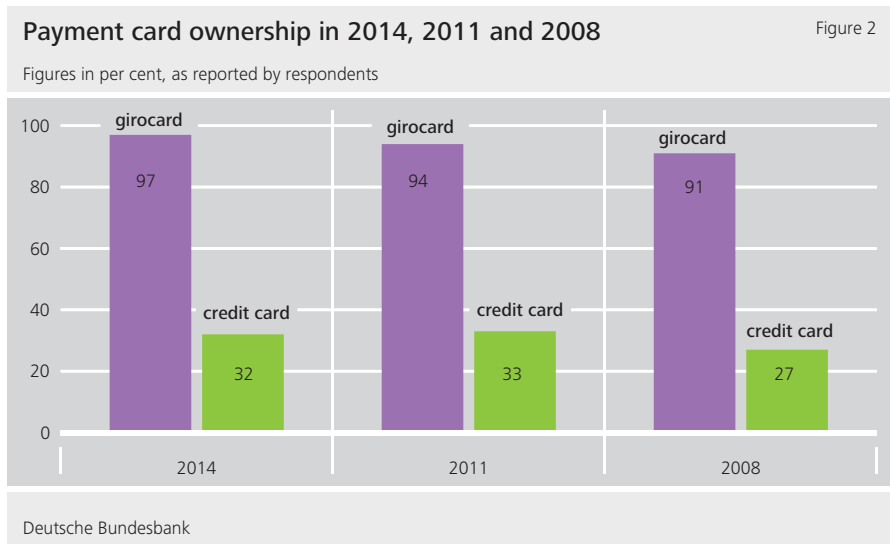
The most common payment card in Germany is the **girocard**, a debit card issued by the German banking industry. Normally, everyone with a current account<sup>10</sup> in Germany is provided with such a girocard. However, the actual number of cards in circulation does not necessarily correspond with perceived card ownership as many people may not be sure which cards they actually have in their wallet or purse. Nevertheless, 97% of respondents said they own at least one girocard. This is three percentage points higher than in 2011. In particular, there has been an increase in the proportion of young and old girocard holders. In 2008, only 84% of 18 to 24 year-olds possessed a girocard, while in 2011, this figure had risen to as much as 92%, then to an above-average result of 98% in 2014. In the over-65 age group, the 90% ownership level recorded in 2011 has now increased to 95%.

As in the 2008 and 2011 studies, the second most commonly held payment card remains the **credit card**, albeit quite some way behind, measured in terms of perceived ownership. Surprisingly, this result has fallen by one percentage point to 32% compared with 2011, while the growth rate of six percentage points between 2008 and 2011 was very high. A generally stagnating level of credit card ownership seems counter-intuitive, however, as, according to the "Statistics on Payments and Securities Trading, Clearing and Settlement in Germany 2009 to 2013"<sup>11</sup>, the number of credit cards issued has continued to rise over the same period. A range of factors may have given rise to this apparent discrepancy. First, there has been a trend towards owning multiple credit cards. In 2011, credit card holders reported ownership of 1.16 credit cards on average; this figure has since gone up to 1.21 in 2014.

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<sup>10</sup> 96% of all respondents said they hold a current account in their own name, while the remaining 4% have no account of their own, but have recourse to their partner's current account. Just five respondents said they have neither a current account themselves nor access to the account of another person. The reasons for this were not specified.

<sup>11</sup> See [http://www.bundesbank.de/Redaktion/EN/Downloads/Statistics/Money\\_Capital\\_Markets/Payment\\_Systems/zvs\\_daten\\_eng.pdf?\\_\\_blob=publicationFile](http://www.bundesbank.de/Redaktion/EN/Downloads/Statistics/Money_Capital_Markets/Payment_Systems/zvs_daten_eng.pdf?__blob=publicationFile).



Second, if one compares the aforementioned payments statistics data and this study's findings regarding perceived card ownership it becomes clear that in 2011 users' perceived level of ownership may have been overstated. While the payments statistics show the growth rate in the number of credit cards owned as averaging 3.4% per year, the 2011 survey would indicate an actual annual growth rate of 5.4% between 2008 and 2011. However, viewed across the entire 2008 and 2014 period analysed by the three studies, the growth rates according to the payments statistics and those reported in the studies on payment behaviour broadly converge. Third, comparison of the two different data sources gives credence to the assumption that some respondents may not be all that sure which cards they actually have in their wallet or purse. According to the payments statistics, in 2013 each citizen over the age of 18 was found to possess 0.42 credit cards on average, while this group's perceived ownership level averaged 0.39 in 2014.

For 61% of surveyed credit card holders, being able to use a credit card abroad was an important aspect in motivating them to acquire one. In addition, 36% of those

asked, quoted the ability to use credit cards to make online payments and book hotels and hire cars as important factors in their favour. Traditional credit card features, such as being able to defer the debiting of an account (appreciated by 21% of respondents) or repay the balance in instalments (cited by 4% of respondents), which are key drivers behind the acquisition and use of credit cards in many other countries, play a relatively insignificant role in Germany. Instead, an account holder's overdraft facility, which normally goes hand in hand with every current account opened is probably deemed a more desirable alternative. Moreover, consumers increasingly have the option of paying in instalments under a consumer credit agreement, some of which can be concluded at a zero interest rate. Special features, such as the offer of insurance services or bonus schemes were only deemed important by a small minority of 7% and 5% of respondents respectively. What is notable, is that 21% of credit card holders said they obtained the credit card free of charge in conjunction with their current account and the standard giro-card. This is very likely attributable to the relatively broad customer base served by direct banks, ie credit institutions which do not operate their own network of branches and which generally provide their customers with a credit card not subject to an annual fee.

As in the 2008 and 2011 studies, **prepaid credit cards**, ie cards issued by the international credit card schemes that have to be topped up prior to use, play a minor role. In addition, no clear trend is discernible here. While ownership fell from 5% in 2008 to 3% in 2011, it rose again in 2014 to 5%.

Ownership of **retailer cards with a payment function** has also seen a further decline. While 19% of participants in the 2008 study said they possessed such a card, this figure fell to 12% in 2011, dropping further to 11% in 2014.

### 3.3 Familiarity with innovative payment methods

To reflect the growing interest in innovative payment methods at the POS and on the internet, these schemes were already investigated in the previous study. Four categories of innovative payment methods were defined for the purposes of this study: i) contactless card payments, ii) mobile payments in-store, iii) mobile payments in other environments (ie not in-store) and iv) e-payment schemes. As innovative payment methods, with the exception of e-payment schemes, still play only a minor role in the market, the questionnaire primarily focused on establishing the extent of customer familiarity with the various schemes on offer.

Compared with the 2011 survey, the 2014 results point to a moderately positive trend in terms of customer familiarity with **contactless card payments**, with 52% of respondents now stating that they are familiar with this form of contactless payment. This represents an increase of five percentage points compared with 2011. As in 2011, male respondents were shown to be particularly open to contactless card payments. In line with expectations, young adults below the age of 34 exhibit an above-average level of familiarity with card-based contactless payment schemes, while older respondents (aged 65 and above) have the lowest level of knowledge in this regard.

The survey also shows that 59% of respondents are now aware of the option of making **mobile payments in a retail outlet (ie in-store)**. This is seven percentage points higher than in 2011. Users' familiarity with **mobile payments in other environments (ie not in-store)** has also increased compared with 2011. In 2014, 59% of respondents stated that they were familiar with such payment methods, as opposed to 53% in the last survey. Overall, public awareness of mobile phone-based payment methods has therefore increased over the past few years. As is also the case with card-based contactless payment, the younger generation and male respondents are more inclined to use such technology. As many as three out of

four respondents in the 18 to 34 age group are familiar with payment schemes using a mobile phone.

**E-payment schemes**, which include PayPal, giroPay and "SOFORT Überweisung", to name but a few, are steadily gaining in importance due to the expansion of online shopping. In view of this fact, it is hardly surprising that 82% of respondents at least know about these e-payment schemes. What is nevertheless noteworthy is that this proportion is even higher than the percentage of internet users in Germany, which lies at 78% (see Section 4.7). One possible reason for this could be the media presence and coverage of such technologies. Among internet users, 95% of respondents are aware of the schemes in question. As with the other innovative payment methods, males and younger people are more familiar with e-payment schemes. With respect to persons up to the age of 44, familiarity with these payment methods has now reached a level of almost 100%, while only 54% of persons aged 65 and above are familiar with them. What is striking is that individual familiarity is strongly correlated with being in gainful employment. While 68% of respondents not in gainful employment are familiar with the schemes, this figure rises to 94% among those who are in gainful employment. There is also a clearly discernible trend with regard to household income and level of education: the higher the net household income and level of education, the greater the number of respondents who are familiar with e-payment schemes.

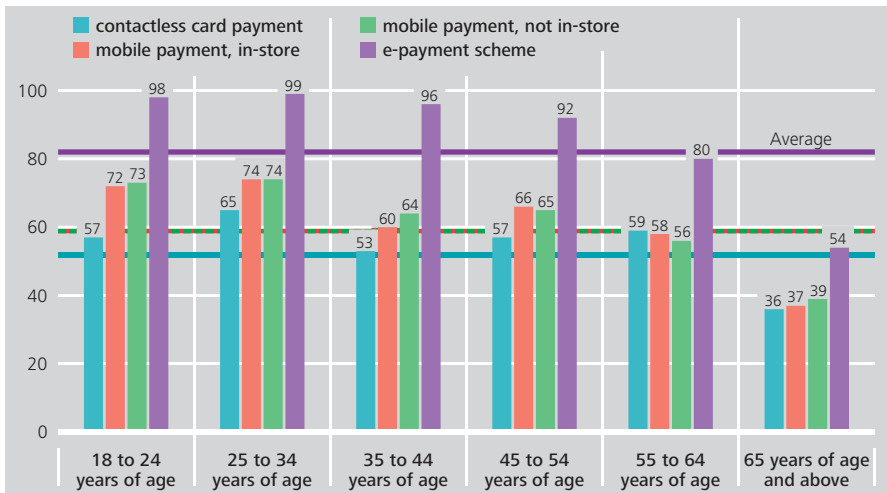
However, in terms of general trends, it is evident that age and gender are particularly important factors in influencing an individual's willingness to deploy innovative payment methods.



### Familiarity with innovative payment methods broken down by age group

Figure 3

2014, figures in per cent; as reported by respondents



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### Virtual currencies – the example of bitcoin

Bitcoin is currently the most prominent example of a virtual currency. The term bitcoin describes both the corresponding unit of currency and the payment system. A distinction should be made between the payment function and store of value function offered by virtual currencies. The bitcoin payment system enables the worldwide transfer of bitcoin units within a short space of time. In the past, bitcoin has primarily been the subject of much press coverage on account of the sometimes highly volatile exchange rates, but also due to a number of incidences of theft from online bitcoin depositories. In addition to bitcoin, there are several other virtual currencies. However, to date these have had a negligible impact.

The quantity of bitcoins issued is in principle restricted to 21 million units. At present, just under 14 million are in circulation. Utilisation of these units as a means of payment is still very low, however: worldwide, only around 80,000 to 105,000 transactions<sup>12</sup> are made on this basis each day. By way of comparison: just over 25 million credit transfers are made in Germany alone every working day.<sup>13</sup> The figures demonstrate that bitcoin has been something of a niche phenomenon up to now.

Only 28% of the survey participants said they were familiar with bitcoin. The highest level of awareness is to be found among 18 to 24 year-olds, at least 41% of whom have heard of it. Take-up of the virtual currency is correspondingly low: just 2% of the respondents familiar with bitcoin also possess some units, while 6% of them intend to purchase or use it at some point. This small number of interested parties contrasts with 84% of respondents who currently have no intention of purchasing or using bitcoins.<sup>14</sup>

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**12** These include all bitcoin transfers, regardless of whether a purchase transaction was the reason for the transfer. Source: <http://blockchain.info/en/charts/n-transactions>.

**13** Over 250 working days per year. Source: [http://www.bundesbank.de/Redaktion/EN/Downloads/Statistics/Money\\_Capital\\_Markets/Payment\\_Systems/zvs\\_daten\\_eng.pdf?\\_\\_blob=publicationFile](http://www.bundesbank.de/Redaktion/EN/Downloads/Statistics/Money_Capital_Markets/Payment_Systems/zvs_daten_eng.pdf?__blob=publicationFile).

**14** 8% of the respondents familiar with bitcoin did not state whether they possessed units in this currency or had plans to buy any.

## **4 Use of payment instruments (based on the payments diary and the questionnaire)**

This chapter analyses the use of payment instruments by evaluating the results from the payments diaries. After providing a general overview of the usage of the various payment instruments available, this study will go on to examine payment behaviour according to the size of the amounts, socio-demographic groups and payment locations or purposes. In addition, a number of topics covered in the questionnaire are evaluated, eg individuals' assessment of their own payment type, use of payment cards and innovative payment methods as well as online shopping.

### **4.1 General trends and overviews**

The results presented in this section are taken from the payments diaries kept by respondents over a seven-day period following the interview. Participants were asked to record all their spending during the week in question, with the exception of regularly recurring payments, such as rent or insurance premiums, which are normally settled on a cashless basis (see box on page 14). In addition to recording the individual amount of expenditure, they were required to specify the means and place of payment. The list of payment methods included established methods such as cash, girocard (debit card), credit card and credit transfer, as well as a raft of innovative payment methods such as paying by mobile phone, contactless card payment and e-payment schemes. With regard to place or purpose, respondents were able to choose between a variety of options ranging from retailers selling everyday necessities, filling stations and pharmacies through online and mail order merchants to payments effected between individuals. The figures calculated on the basis of the payments diaries therefore depict the actual payment behaviour of

respondents during the week recorded in the diary. By contrast, the answers given in the questionnaire represent a self-assessment by respondents of their own behaviour and as such reflect personal attitudes.

All in all, 2,019 payments diaries were completed, recording 19,247 transactions amounting to a value of €503,000.<sup>15</sup> In line with the survey procedure applied in 2011, only payments for which a payment instrument was stated were included in these figures. In addition, a cash payment in the amount of €10,000 was disregarded, as this would have skewed the calculations due to its very large size. This resulted in an average daily number of transactions of just under 1.4, which is comparable to the figure identified in the two preceding studies. However, the total value of transactions has fallen by around €95,000, which is also reflected in the lower average value per transaction of €26 (2011: €30). But then the median<sup>16</sup> lies just below €14 (2011: €15). This means that half of all recorded transactions concerned small payments of less than €14. At the same time, only a small number of large value payments were recorded. This echoes the findings of the preceding studies.

#### **4.1.1 Share of payment instruments broken down by turnover and number of transactions**

Evaluation of the payments diaries in terms of actual turnover and number of transactions reveals that, as in the previous studies, cash remains the most popular payment instrument, accounting for a 53.2% share of turnover. This equates to 79.1% of transactions settled at the POS. Cash as a share of turnover has therefore

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<sup>15</sup> Weighted, there were 2,022 payments diaries. The number and value of transactions relate to the weighted payment diaries.

<sup>16</sup> The median, a statistical measure, divides the observed values arranged in ascending order of magnitude into two groups of equal size.

### Share of payment instruments broken down by turnover and number of transactions in 2014, 2011 and 2008

Table 1

**Note:** The figures refer to the transactions made by the respondents (2,019 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	Share in % (2014)	Share in % (2011)	Share in % (2008)	Number of transactions	Share in % (2014)	Share in % (2011)	Share in % (2008)
Cash payment	267,248.74	53.2	53.1	57.9	15,223	79.1	82.0	82.5
girocard	147,592.19	29.4	28.3	25.5	2,954	15.3	13.4	11.9
– with PIN	121,932.73	24.3	20.9	---	2,414	12.5	10.1	---
– with signature	25,659.46	5.1	7.4	---	540	2.8	3.3	---
Credit card	19,581.53	3.9	7.4	3.6	246	1.3	1.8	1.4
Direct debit	14,881.28	3.0	0.7	1.9	93	0.5	0.3	0.6
Credit transfer	26,404.67	5.3	8.2	8.9	185	1.0	1.3	1.8
Prepaid payment card	111.12	0.0	0.1	0.6	5	0.0	0.2	0.7
Retailer card with a payment function	375.20	0.1	0.1	0.2	8	0.0	0.1	0.1
E-payment scheme	13,986.00	2.8	1.7	0.3	166	0.9	0.7	0.1
Contactless card payment	386.34	0.1	0.1	---	14	0.1	0.0	---
Mobile payment	77.49	0.0	0.0	---	5	0.0	0.0	---
Other	457.41	0.1	0.2	0.4	25	0.1	0.1	0.2
Cashless, using an unspecified payment instrument	11,442.13	2.3	---	---	323	1.7	---	---
<b>Total</b>	<b>502,544.10</b>	<b>100</b>	<b>100</b>	<b>99</b>	<b>19,247</b>	<b>100</b>	<b>100</b>	<b>99</b>

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

remained constant since 2011, however its strength as a share of the overall number of transactions has fallen by three percentage points. These developments indicate that regularly recurring, small and medium-sized purchases are more likely to be paid for on a cashless basis, primarily by girocard. The distinct fall in the proportion of cash payments measured as a share of turnover that emerged when comparing the data from 2008 and 2011 has not continued in the past three years. The stabilisation in the volume of cash payments is in large part due to the fact that no continued decline in the share of cash payments for amounts exceeding €100 is discernible from the 2014 data. Rather, the volume share in 2014 lies in between the figures of 2008 and 2011.

The girocard is still the most commonly used cashless payment instrument. Compared with 2011, this card's share of turnover has risen by around one percentage point, while its share of the number of transactions has gone up by around two percentage points. What is striking, however, is that the electronic direct debit scheme (ELV), ie payment using a girocard in conjunction with a signature<sup>17</sup>, has lost ground since the last study, while there has been a significant increase in the number of girocard payments made with a PIN.

According to the data gathered, in 2014 there were fewer credit card payments than in 2011, marginally so in terms of the number of such transactions made but more significantly so as a share of turnover.<sup>18</sup> The shares identified for 2014 are broadly similar to the results from 2008.

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<sup>17</sup> To the customer, debit card payment using a signature may look like a girocard payment. In reality, however, the debit card serves to generate a direct debit, which the customer then authorises with his/her signature.

<sup>18</sup> In the 2011 study, the figure for credit card payments as a share of turnover was strongly influenced by a small number of large value transactions. The fall in this payment instrument's share of the transaction volume recorded in 2014 could therefore be partly attributable to statistical vagaries.

While credit transfers have continued to lose importance, direct debits as a share of turnover have gained ground compared with 2011.<sup>19</sup> Neither of these payment methods play any role at the traditional POS<sup>20</sup> and are mostly to settle bills at a number of specific payment locations, such as hotels and online or for mail order purchases (see Section 4.6).

E-payment schemes have gained ground. These account for 0.9% of the number of transactions and 2.8% of turnover. Given the dynamic growth of e-commerce, the observed upturn is unsurprising (see Section 4.7). Comparing this payment instrument's share in turnover and number of transactions and looking at the analysis of the various transaction amount categories one can see that e-payment schemes are primarily used for settling large amounts.

Retailer cards with a payment function and prepaid payment cards are of very little significance, as shown by the previous studies. Likewise, innovative payment methods (ie contactless payment cards, payment via mobile phone) are still used only by a tiny minority.

Departing from the design of the preceding studies, in the latest version of the payments diary respondents were first required to choose between the categories „cash payment“ or „cashless payment“ before then specifying the payment method used.<sup>21</sup> Cashless payments using an unspecified payment instrument accounted for 1.7% of transactions and 2.3% of turnover, hence the stated shares of cashless

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**19** Credit transfers and direct debits continue to enjoy a high level of popularity in Germany. However, they are mainly used to settle regularly recurring transactions such as rent and insurance premiums, records of which are expressly excluded from the payments diary.

**20** An exception at the traditional point of sale is the electronic direct debit scheme, under which a direct debit is generated by a debit card and then authorised using the customer's signature.

**21** This allows the figures for those who did not provide any information about the cashless payment instrument used to be taken into account when calculating the share of cash.

payment instruments in the number of transactions and turnover should be interpreted as lower limits.

#### **4.1.2 Payment instruments broken down into various transaction amount categories**

Figure 4 provides an overview of the use of payment instruments broken down by transaction amount categories. As it shows, cash remains by far the most commonly used payment instrument for payments of up to €50. Cashless payment instruments are hardly ever used for small payments of less than €5. One indisputable reason for this is that card payments are frequently not possible in shops where such small purchases are made. However, looking at payments of small and medium-sized amounts between €5 and €100, the study identifies a fall in the number of cash transactions of around five percentage points on average. Consumers are increasingly reaching for their girocards to make these payments. The development in question is likewise evident from some of the findings in the questionnaire, which asked respondents to state the lowest amount they would normally pay without cash. The average specified amount fell from €88 in 2011 to €77 at present.

Of the various cashless payment instruments available, the girocard is the most dominant when it comes to settling amounts up to €500. It is used more often than cash for items costing €50 and above. Credit cards only begin to be used to a significant extent for transactions upwards of around €50, while e-payment schemes tend to be used for higher amounts (€100 to €500), and their share of transactions also increases over time.

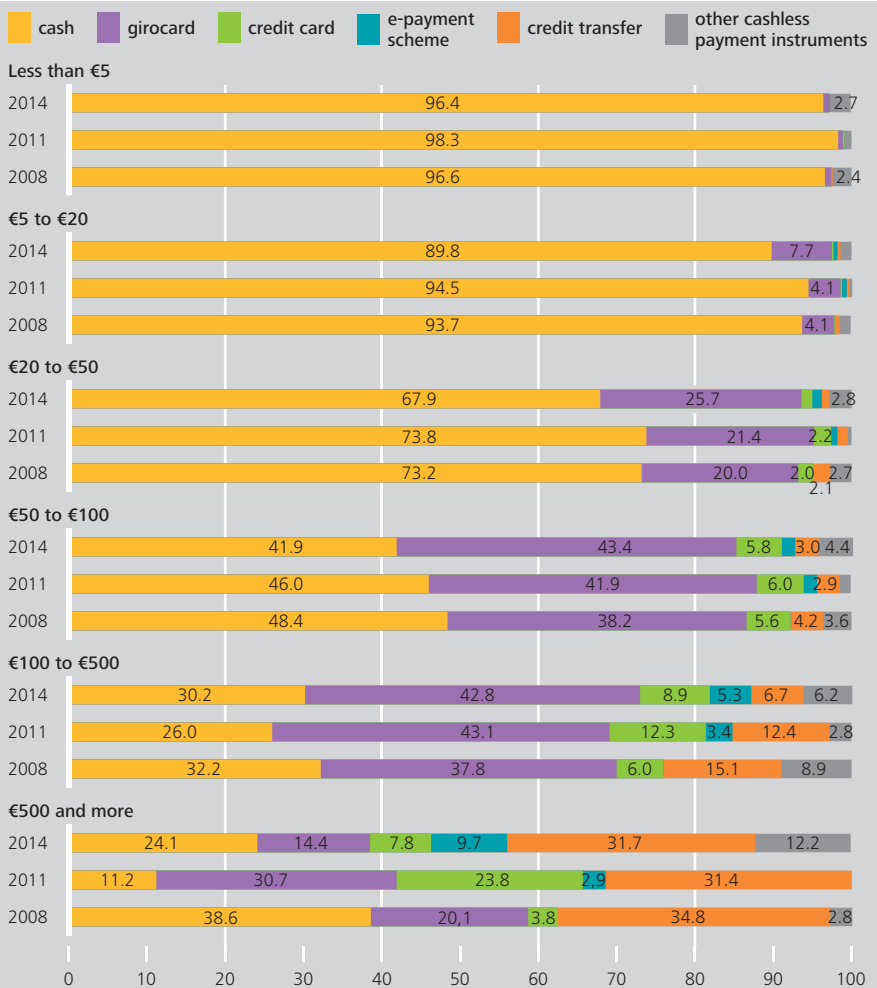
With regard to higher amounts (exceeding €500) no payment instrument dominates the field, unlike smaller amounts where this is the case. Most transactions are



### Share of payment instruments broken down into various transaction amount categories in 2014, 2011 and 2008

Figure 4

Percentage share of total number of transactions; according to payments diary



The chart shows a breakdown of the payment instruments used in each transaction amount category, measured in terms of the total number of transactions. This means, for instance, that 96.4% of all payments up to a value of €5 were made in cash in 2014. For reasons of clarity, labels for a number of payment instruments (accounting for less than 2%) were omitted. Deviations from 100% due to rounding.

effected by means of credit transfer, with cash, girocards and credit cards playing a secondary role. E-payment schemes are also used to some degree.<sup>22</sup>

## ■ 4.2 Socio-demographic evaluation of payment behaviour

The 2008 and 2011 studies already featured a number of detailed illustrations of payment behaviour according to socio-demographic categories. Since manifestations of many socio-demographic factors remain reasonably stable over time, only a small selection of results derived from the current data are presented below.

As was previously the case, the respondent's age has a significant influence on overall payment behaviour and the extent of cash payment in particular. The older the respondent, the greater his or her propensity to pay with notes and coins. However, in contrast with the previous studies' findings, it has been established that young people aged between 18 and 24 no longer pay for a larger proportion of their expenditure using cash than middle-aged people. Indeed, among the youngest group of respondents, there has been a significant increase in the volume of transactions settled using a girocard. The share of expenditure paid for using e-payment schemes has ballooned, particularly among younger respondents between the ages of 18 and 24 and among respondents aged between 45 and 64. The relatively lower level of utilisation of traditional payment instruments shows that even the older age group, which is commonly regarded as being less comfortable with modern technology, is quite open to new internet-based payment methods.

What is also interesting is the way in which men's and women's payment behaviour has changed over time. While the share of cash payments made by men has

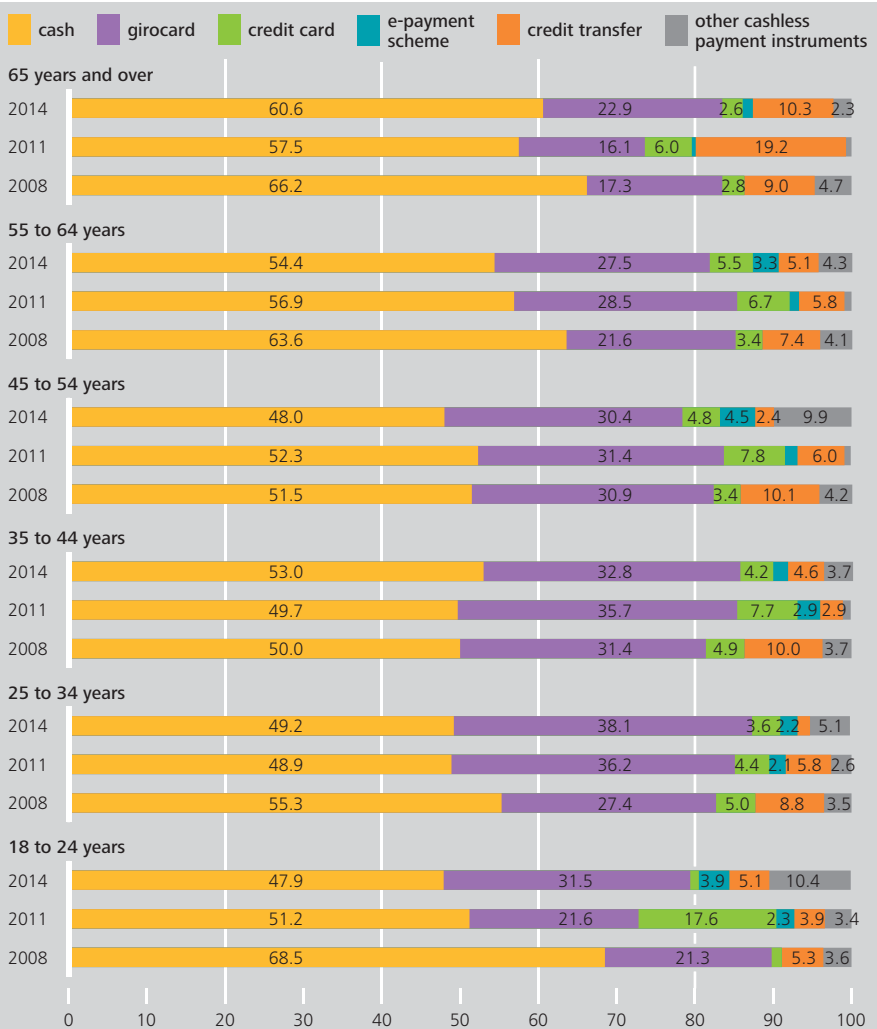
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<sup>22</sup> Given the small number of observations in the transaction amount category above €500, there is only limited scope for a comparison with the results of the preceding studies.

### Use of payment instruments broken down by age group in 2014, 2011 and 2008

Figure 5

Figures as a percentage of turnover; according to payments diary



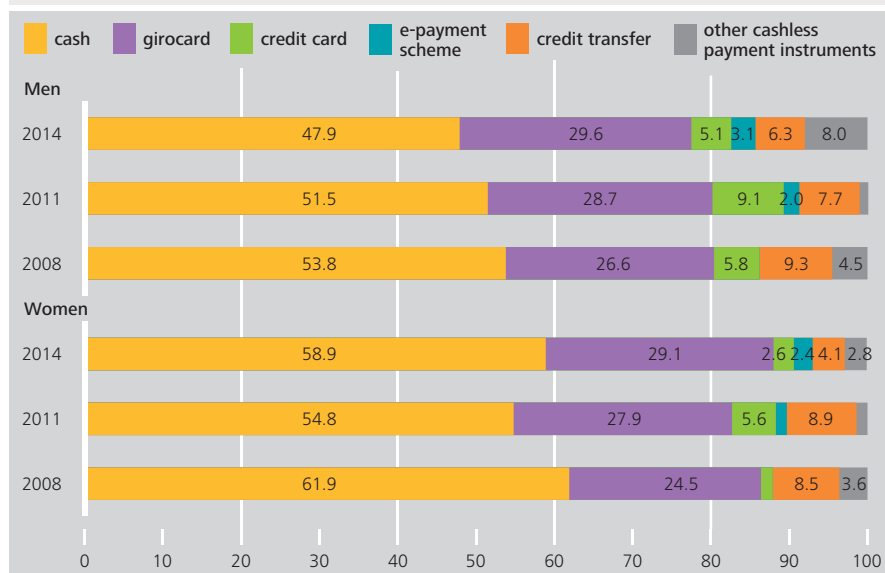
For reasons of clarity, labels for a number of payment instruments (accounting for less than 2%) were omitted. Deviations from 100% due to rounding.

continuously fallen since 2008 and already dipped well below 50%, the proportion among women has risen by as many as four percentage points compared with the last study. On the other hand, an increase in girocard payments could be observed in equal parts among both genders. The lower level of cash payment among male respondents may be chiefly attributable to their comparatively higher usage of credit cards, e-payment schemes and credit transfers.<sup>23</sup>

### Use of payment instruments broken down by gender in 2014, 2011 and 2008

Figure 6

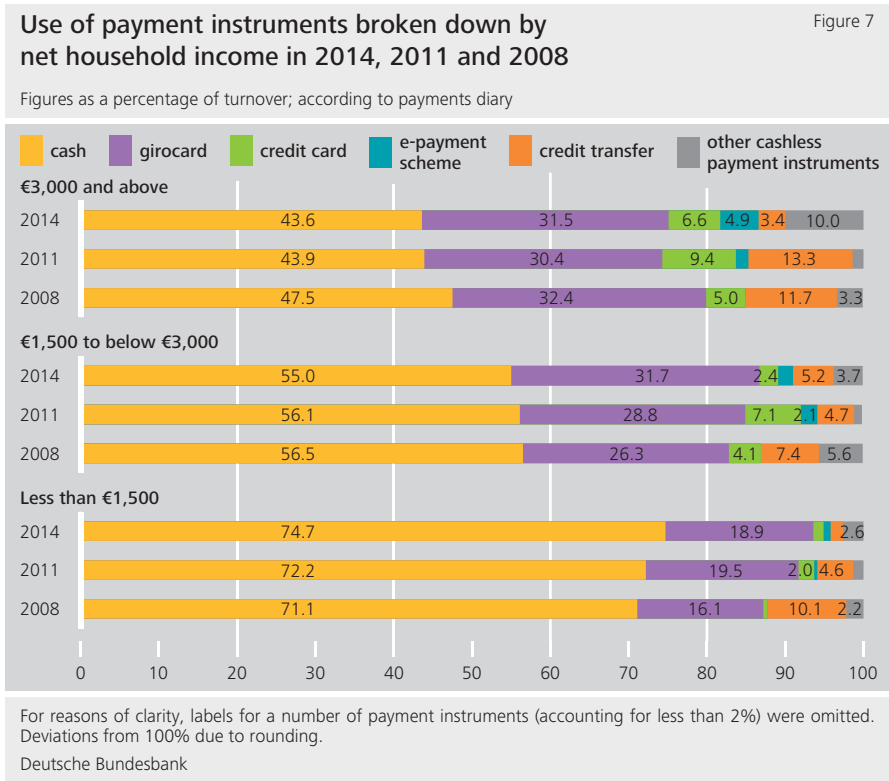
Figures as a percentage of turnover; according to payments diary



For reasons of clarity, labels for a number of payment instruments (accounting for less than 2%) were omitted. Deviations from 100% due to rounding.

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<sup>23</sup> In addition, usage of „other“ payment methods among men is high. However, this share was significantly influenced by a single payment of almost €7,000 that was paid by direct debit. Aside from this extreme value, usage of the „other“ payment instruments does not differ significantly between men and women.



A breakdown of interviewees' payment behaviour as recorded in the diaries according to net household income, indicates that differences between high- and low-income respondents might be widening. While usage of cash as a means of payment among persons in households earning less than €1,500 net has gone up by 2.5 percentage points since 2011 (after already standing at a high level), this rate remains constant among respondents on a high income and has in fact fallen in the middle income groups.

By contrast, the girocard is used less often by low earners. While this card's share of the recorded turnover among persons with a net household income of €1,500 to

€3,000 and over €3,000 comes in at 32%, this payment instrument accounts for just 19% of transactions by turnover among the lowest income group.

Credit cards and e-payment schemes likewise play only a negligible role among low earners. Individuals with a low household income may increasingly feel compelled to keep their spending in check. Hence, there is a certain tendency in Germany to tread carefully and only deploy cash, a phenomenon which has been referred to as „pocket watching“.<sup>24</sup>

Other interesting results emerge from a comparison of payment behaviour in eastern and western Germany. The surveys conducted in 2008 and 2011 found that eastern German respondents use cash for payments less often than their counterparts in western Germany, but use debit and credit cards more frequently. This picture has changed in some significant respects in 2014. While in western Germany, the proportion of cash payments fell by more than two percentage points compared with 2011, it rose in the eastern part of the country by 11 percentage points and is now in fact higher there than in the western part. All in all, it is possible to discern a gradual nationwide alignment of payment habits.

As was the case before, somewhat greater use is made of the girocard in eastern Germany than in the western part of the country, but there are no such differences with regard to credit cards. E-payment schemes are only used to a very limited degree in eastern Germany, however.

On account of the trend towards a greater alignment of payment habits between respondents residing in eastern and western Germany, the choice made by individuals

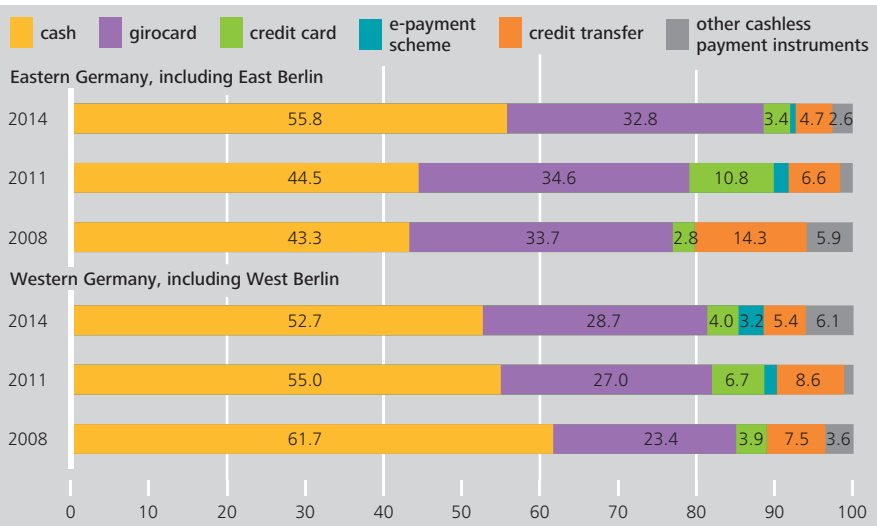
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<sup>24</sup> See von Kalckreuth, U, Schmidt, T, Stix, H (2014), Using cash to monitor liquidity – implications for payments, currency demand and withdrawal behavior, *Journal of Money, Credit and Banking*, 46(8), pp. 1753-1785.

### Use of payment instruments in eastern and western Germany in 2014, 2011 and 2008

Figure 8

Figures as a percentage of turnover; according to payments diary



For reasons of clarity, labels for a number of payment instruments (accounting for less than 2%) were omitted. Deviations from 100% due to rounding.

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in these two geographical sectors between cash and cashless payment methods more vividly reflects the pattern described in scientific studies on payment behaviour in Germany and in other countries than the preceding surveys. According to these studies, socio-demographic factors and individual transaction characteristics are of key importance.<sup>25</sup> Both the lower average income in eastern Germany and the lower average value of each transaction (€23, compared with €27 in the western part of the country) suggest a greater emphasis on cash payments. On the one

<sup>25</sup> See von Kalckreuth, U, Schmidt, T, Stix, H (2013), Choosing and using payment instruments: evidence from German microdata, *Empirical Economics*, 46(3), pp. 1019-1055, and Bagnall, J, Bounie, D, Huynh, K P, Kosse, A, Schmidt, T, Schuh, S, Stix, H, Consumer cash usage: a cross-country comparison with payment diary survey data, Deutsche Bundesbank Research Centre, Discussion Paper, No. 13/2014.

hand, the increase in the value share of cash payments between 2011 and 2014 is the result of a marginally higher cash share of shopping expenditures on everyday necessities and on longer-term purchases as well as in cafes, bars, snack bars and fast-food restaurants. On the other hand, it is also the result of a significant increase in cash paid to private individuals and for leisure activities. The latter two places/purposes of payment also have a significantly larger share of payment volumes than in 2011. Whether these represent temporary fluctuations or longer-term trends cannot be ascertained from the data contained in the most recent study.

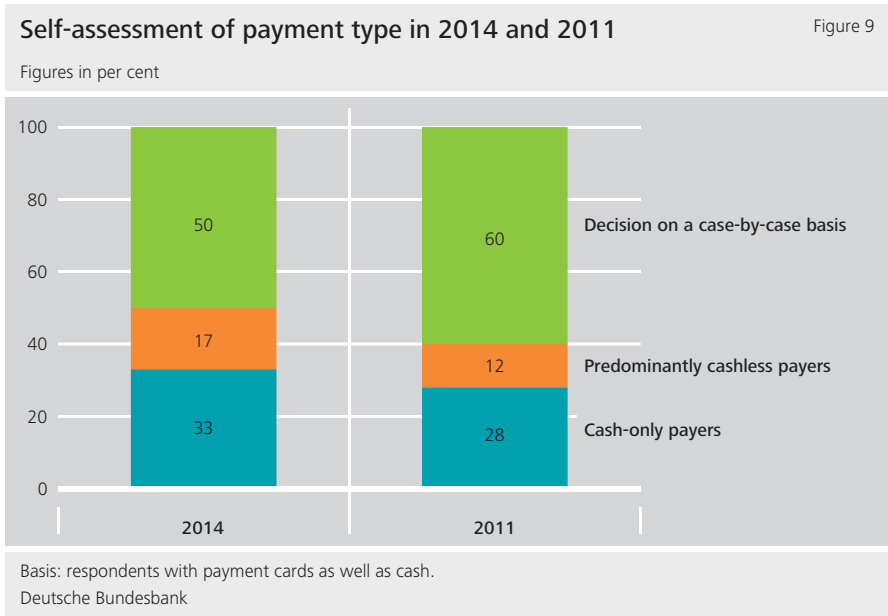
## **4.3 Customers' choice of payment instrument at the point of sale**

### **4.3.1 Self-assessment of the payment type**

As a rule, customers are faced with the choice of paying with cash or by card at the POS. As in the 2011 study, the aim of the interviews conducted this time round was to establish whether users apply specific criteria when deciding on cash or card payment at the POS or whether respondents had already made up their mind beforehand regarding their choice of payment instrument.

A greater number of people than in the last survey were revealed to have already decided on their chosen payment method in advance of making their purchase. 33% (2011: 28%) of consumers stated that they pay by cash as a matter of principle, despite possessing payment cards. 17% (2011: 12%) classified themselves as belonging to that group of persons that primarily pays by cashless means and only uses cash if no other method is possible. The remaining 50% (2011: 60%) said that they decide on a case-by-case basis at the POS, depending on a variety of factors.





Persons paying exclusively in cash (henceforth known as “cash-only payers”) tend to belong to the older age groups and to earn a lower income, while individuals paying primarily with a cashless instrument are generally younger and/or higher-earning respondents. This could also be a reason why users who mostly avoid cash spend a significantly larger amount of money than those who pay solely with cash: during the week in which they kept the diaries, they spent an average of €306, compared with €197 in the case of cash-only payers. At the same time, the latter carry more cash on their person (€116) than do non-cash payers (€89). Shoppers who choose their payment method at the POS on a case-by-case basis find themselves between the groups that decide upfront, exhibiting average expenditure in the amount of €278 and cash in their wallets or purses totalling €96.

After being instructed to assign themselves to one of the three payment types, the respondents were asked an additional set of questions depending on the

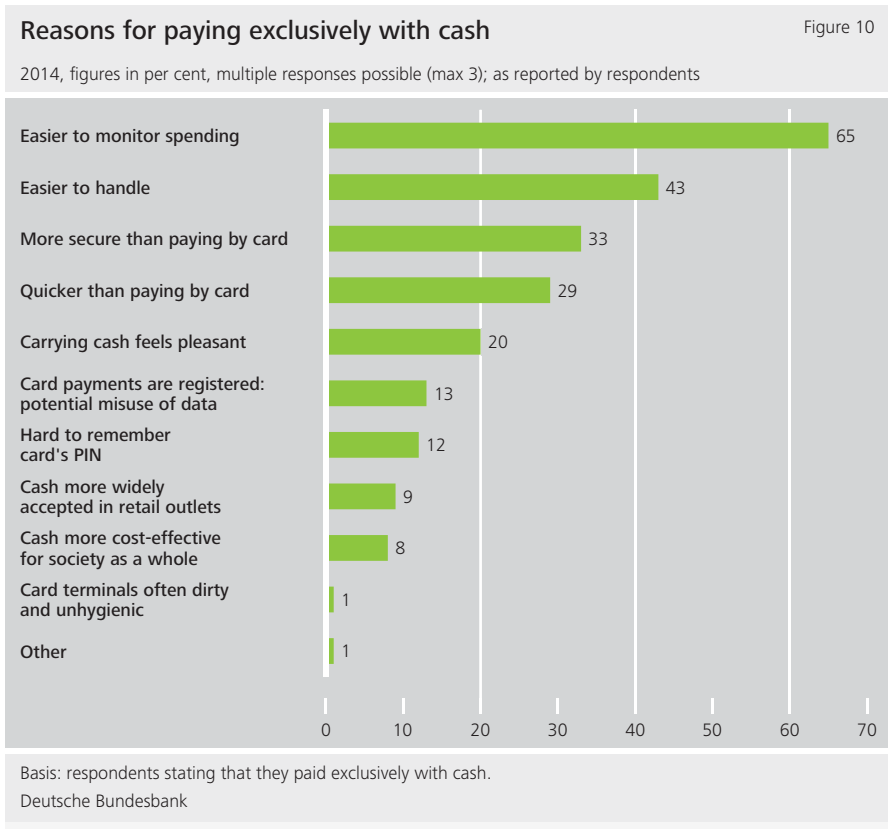
category they had chosen. Consumers specifying that they always decide on a payment instrument in advance were asked to explain why they prefer to pay solely with cash or for the most part on a cashless basis. By the same token, users who make up their mind at the time of purchase were asked to specify the criteria they apply when deciding whether to opt for banknotes and coins or a card at the POS.

#### 4.3.2 Cash-only payers

By far the most prevalent reason why one in three of those surveyed classed themselves as cash-only payers, despite possessing payment cards, is the perceived exercise of greater control over one's spending. The importance of cash payments in relation to keeping spending in check has also been highlighted by recent academic studies that made use of the data provided by the 2008 wave of the Deutsche Bundesbank's payment survey.<sup>26</sup> Interestingly, however, some of the respondents who prefer to pay without cash said that cashless payment instruments offer greater control over personal spending than cash. Occupying second to fourth position, simplicity, security and speed came well ahead of further reasons given for exclusively paying in cash. What is interesting here is that these points are also important motivators for opting for cashless payment instruments on the part of those who predominantly pay without cash. This demonstrates that the same criteria are considered important by all respondents, however their attitudes differ with regard to which payment instruments are best suited to meeting these criteria.

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<sup>26</sup> See von Kalckreuth, U, Schmidt, T, Stix, H (2014), Using cash to monitor liquidity – implications for payments, currency demand and withdrawal behavior, *Journal of Money, Credit and Banking*, 46(8), pp. 1753-1785.



One in five cash-only payers stated that using notes and coins has a haptic significance for them, explaining that it feels pleasant to have cash in your hand. This „pro-cash“ argument has more sway than two „anti-card“ arguments: just 12% of cash payers opt exclusively for bank notes and coins because of difficulties remembering their PIN. Likewise, only one in eight die-hard cash payers cited a fear of potential data misuse when using cashless payment instruments as an important driver of their behaviour. Even fewer respondents stated that they only use cash for payment because of its wider acceptance among retailers or because they believe that cash is more cost effective from an economic point of view.

It may be concluded from this that respondents who as a matter of principle use cash for payments at the POS do so because this is of benefit to them and because they are convinced they have good reasons to behave in this way (control over spending, easier/more secure/faster). As such, their motivation for paying solely with cash is not due to a broad association of cashless payment instruments with disadvantages.

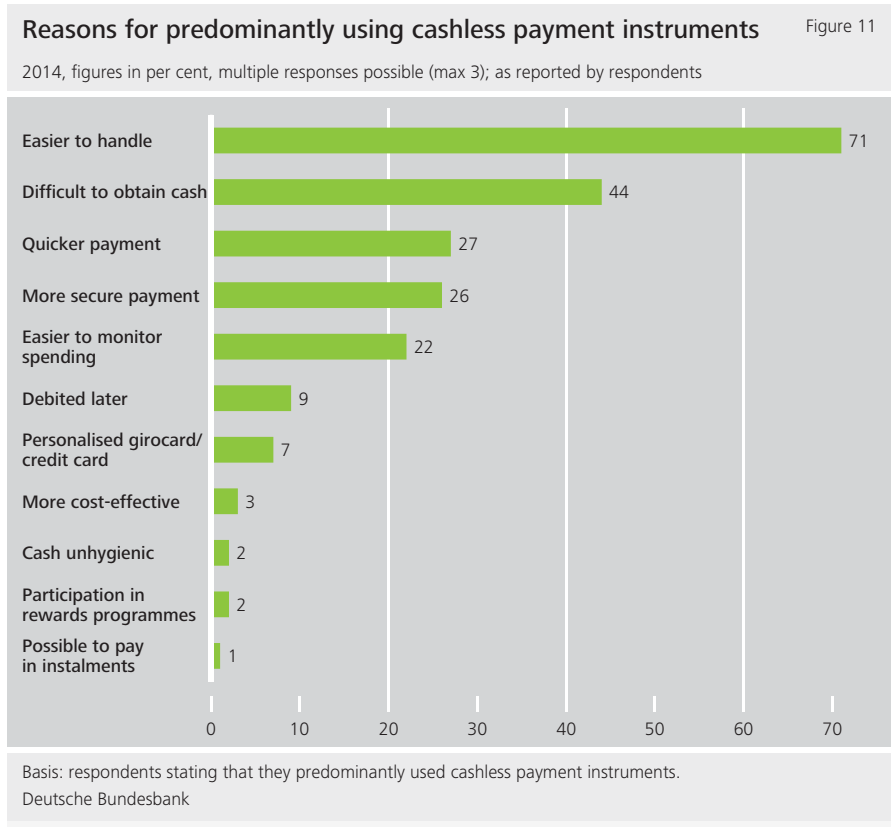
#### 4.3.3 Predominantly cashless payers

17% of respondents stated that, wherever possible, they pay without cash at the POS. However, these individuals constitute the smallest group, compared with exclusive cash payers and those who make a choice at the time of purchase. This order of precedence has remained unchanged since 2011, though the proportion of respondents who predominantly use other means of payment than cash has increased since 2011 from 12% to 17%.

In principle, persons who pay predominantly without cash tend to be younger and have a higher level of education as well as a broadly higher net household income. The 2011 study drew a very similar picture of the impact of socio-demographic factors on how payers are typified.

According to the contents of the payments diaries, exclusive use of cashless payment instruments actually only occurs in a small number of cases. 98% of respondents paid in cash at least once during the week in question. The lack of a broad-based acceptance of cashless payment instruments is likely to have played a key role here.

Of the respondents reporting that they primarily pay without cash, 71% cited the ease of use of cashless payment as their motivation. This could also be linked to the second most frequently stated reason: 44% described obtaining cash as a



laborious task. 94% of respondents who make cash withdrawals at least on an occasional basis viewed the effort required to withdraw cash as minimal or very small. It follows that the perceived effort involved in obtaining cash ought not to be of any great consequence. Nevertheless, users may value the time that can be saved or the potential savings in terms of withdrawal fees if directly compared with the option of not using cash.

Other frequently cited reasons for preferring card payment are speed and security, as specified by 27% and 26% of respondents respectively. Users' perception of

simplicity, speed and security is subjective, as cash-only payers presented the same arguments for their preference for cash (see Section 4.3.2). While security is valued more highly by these payers, shoppers who predominantly pay without cash attach greater importance to simplicity.

The security aspect can also be explained in the light of the perceived risk element compared with the number of respondents who had actually experienced security issues. Examples of potential risk relating to card payments include theft of card data at automated teller machines (ATM) or at the retailer's terminal, or loss of the payment card due to theft. The respondents not only believe these risks to be real, but in some cases also judge them to be (very) high. 30% of respondents view the risk of card data being stolen at ATMs to be (very) high, while 25% consider the risk of losing a card due to theft as being (very) high. Meanwhile, 23% see a similar degree of risk of card data being stolen at retailer terminals. That said, the likelihood of these events actually occurring was believed to be very low. When subsequently asked whether they had been affected by any such incident in the previous twelve months, 2% of all those surveyed said that they had lost a card due to theft.<sup>27</sup> The other specified risks had been encountered by well below 1% of respondents.

Greater control over spending was given as a reason for both card and cash payment. However, this consideration plays a significantly less important role for persons who predominantly pay without cash.

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<sup>27</sup> This proportion is higher than suggested by the police crime statistics (see Federal Criminal Police Office, Crime Statistics, Base Table, Table 01, 2013 reporting period). According to these statistics, around 136,000 thefts of cashless payment instruments were recorded in 2013. In relation to 67.7 million inhabitants over the age of 18 who lived in Germany at the end of 2013 (see Federal Statistical Office, Population: Germany, sample days, years, GENESIS Online Database, Table 12411-0005, accessed on 08.01.2015), this works out at 2 instances per 1,000 people.

#### **4.3.4 Customer's choice of payment instrument at the point of sale on a case-by-case basis**

Half of all respondents only make a decision as to whether they want to pay in cash or without cash at the POS. As in the preceding surveys, the amount of available cash in one's pocket is the most important criterion for this group when choosing a payment instrument, with respondents' main question being: how much cash do I have left on me? This aspect is of great importance, not least for persons on a low net household income, who often focus disproportionately on the amount of cash they have at their disposal as the basis for making a decision.

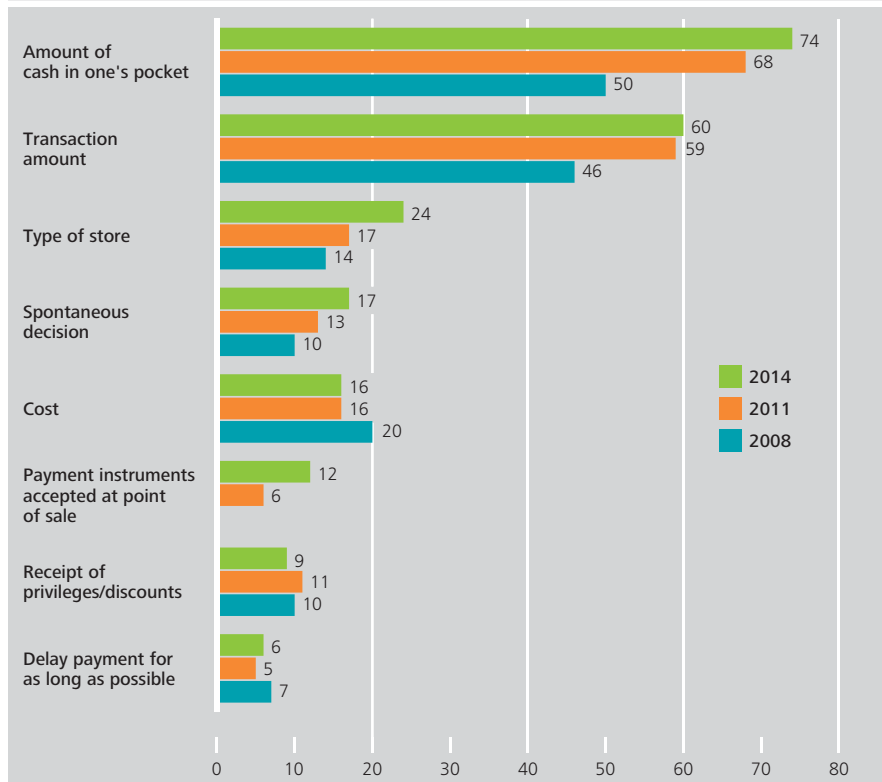
The second most important factor is the transaction amount. As the figures from the payments diaries show, cash is usually preferred when paying small amounts, while people more frequently resort to cashless payment instruments for higher-priced purchases. As such, the amount to be paid plays a key role in making up many consumers' minds. This criterion applies across a broad spectrum of socio-demographic characteristics and is only slightly less influential with respect to respondents with a migration background, as the last survey already showed. However, it seems that fewer and fewer consumers now adhere to a strict rule entailing specific amount limits that determine their choice of payment instrument. In the 2014 survey, 42% of interviewees said there was no particular minimum amount above which they would always opt for cashless payment methods; in 2011 this figure was only 12%.

Other criteria such as the type of store, the cost, the range of payment instruments accepted at the POS, the receipt of privileges and discounts, delaying payment for as long as possible or simply taking a spontaneous decision trail some distance behind. Of these relatively minor decision criteria, the type of store remains the most influential factor and is steadily gaining in importance over time. For almost

### Criteria for selecting a particular payment instrument at the point of sale in 2014, 2011 and 2008

Figure 12

Figures in per cent, multiple responses possible (max 3); as reported by respondents



Basis: respondents stating that they used both cash and cashless payment instruments when making payments, depending on the shopping situation.

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one in four respondents, the type of retail outlet entailed has since become important in the choice of payment method. While there is often no means of making payment without cash in stores in which the purchase sum generally remains very low, eg in bakeries or at kiosks, the existence of a correlation with the amount to be paid cannot be excluded. People who, for example, always pay



without cash in hardware stores and always pay in cash at the drug store, may do this implicitly depending on the total amount. As in both previous studies, the least cited basis for a decision is being able to delay charges for as long as possible. This indicates that there is no general wish on the part of shoppers to postpone payment for as long as possible, a conclusion that is in keeping with the fact that people of limited financial means, for whom the option of deferred payment would seem attractive, in fact prefer to opt for cash because it enables them to control their spending more effectively.

#### ■ 4.4 Use of payment cards

Those respondents who own at least one cashless payment instrument – usually one or more payment cards – have a choice at the POS as to which of these payment instruments they will use.

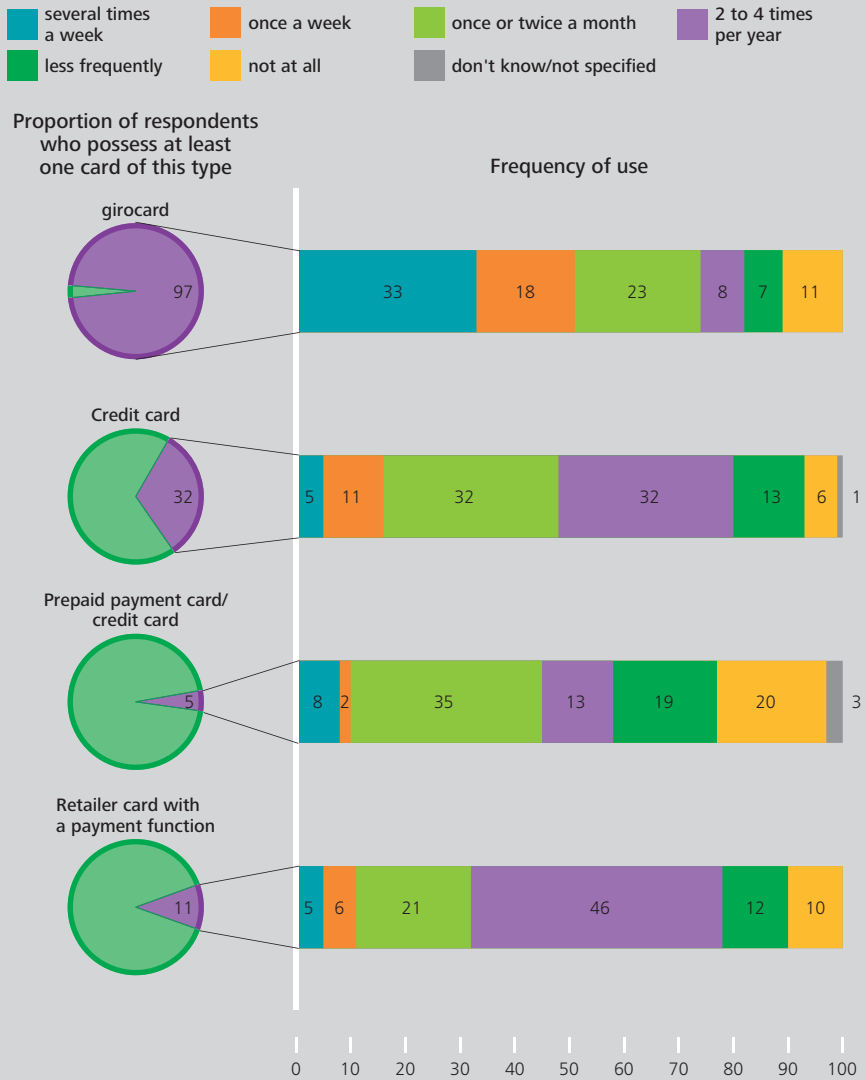
Almost all respondents (98%) paid in cash at least once during the diary week. So what proportion of respondents made at least one card payment during the seven-day period and which card type did they use for this purpose?

56% of respondents carried out at least one transaction using a girocard, which is an increase of eight percentage points compared with the previous study. 7% of respondents used their credit card, which equates to a fall of two percentage points. In total, 58% of girocard holders and 22% of credit card holders made actual use of their cards during the week in question. In both cases, however, the actual level of use proved higher than the respondents' recorded expectations according to their self-assessment. Just 51% of girocard holders and 16% of credit card holders stated that they use these cards at least once a week. This shows that actual and perceived payment behaviour can differ quite significantly from one another.

### Ownership and use of different payment cards

Figure 13

2014, figures in per cent; as reported by respondents



#### 4.4.1 Deciding between a debit and credit card

33% of all respondents report owning at least one girocard and a credit card, thus giving them the choice of either payment instrument at the POS, provided both are accepted. 79% of those respondents expressed a preference for the girocard over the credit card. Here too, there is a clear difference between men and women in their payment preferences. 87% of women prefer the girocard, compared with just 72% of men. Age also seems to play a part in the choice of card used. 94% of the youngest participants in the study (18 to 24 year-olds) are more inclined to choose the girocard than a credit card. Moreover, the highest percentage of people preferring a credit card to the girocard is to be found among respondents with a higher level of education. At 29%, a disproportionately large number of people with a college/university degree prefer to use a credit card. Payment by girocard also tends to be favoured by individuals on a lower household income.

At 28%, credit card preference is also disproportionately high among respondents who, according to the evaluated diary information, effected a relatively large number of transactions during the week. The figures also reveal that a particularly large number of those respondents who did not replenish their cash supply even once during the diary week prefer to use a credit card. By contrast, the more frequently cash is replenished, the greater the representation of girocard user.

What motivates respondents to choose a girocard if both options are open to them? Of those who would choose a girocard, 54% attribute their decision to outlets' preferences, stating that girocard payment is preferred by retailers. This is supported by the fact that credit cards are accepted less often at the POS than a girocard. A further 47% indicate that they are more accustomed to the girocard. Evidently, girocard is a tried-and-trusted payment instrument that is widely used and well-known. Both of the specified reasons are significantly more important to respondents living in eastern Germany than to those living in the western part

of the country. A markedly high proportion of respondents with modest educational qualifications feel more comfortable with the girocard. However, for individuals living in western Germany, the more critical factor is that, if they use a girocard, they are less tempted to spend more money than they initially intended. Credit cards with a deferred debit date are common in Germany but, unlike many other countries, little use is made of the actual credit card function of extending this period over and above the time delay of the debit (ie granting the holder a credit line and repayment in instalments). This significantly minimises the risk of excessive spending. A number of respondents explicitly indicated that they preferred the girocard to the credit card because the amount is debited to their account earlier. This attitude is probably related to a desire for tighter controls on spending. However, the overdraft facility normally granted by a bank in conjunction with a current account offers a limited opportunity to go overdrawn, which is similar to the credit function of a credit card. Besides wanting to keep an eye on spending, the subjective feeling of security also influences the user's choice of payment instrument. 16% of respondents believe that paying by girocard is more secure than using a credit card. It is striking that, at 27%, a particularly high percentage of 55 to 64 year-olds believe that a girocard offers greater security, doubtless because they are more familiar with it. A further 21% of respondents said that they simply were less likely to have their credit card on them when shopping.

So what are the motives for preferring to use a credit card? 57% of respondents value the free credit facility offered by a credit card owing to the fact that their account will be debited at a later date. For individuals living in western Germany, this is more important than for their compatriots in the east. It is also cited as a reason by a disproportionately large number of people with a higher level of education and a sizeable income. Furthermore, 26% of respondents stated that they also use a credit card when they have insufficient funds in their account at the time of the purchase. 27% of the respondents who expressed a preference for credit

cards feel that credit card payments are more secure and 27% of them benefit from discounts and bonus points if they pay by credit card. Security therefore seems to be a highly subjective factor, as the same motivating argument is cited for the girocard. For individuals living in eastern Germany in particular, discounts and bonus points are the deciding factor when choosing to pay by credit card.

To summarise, girocards are generally preferred to credit cards as a means of payment at the POS. The key factors at play here are, first and foremost, broad availability and the familiarity this engenders combined with a high level of acceptance at the POS. The chief motives for using a credit card are the associated credit line or the facility to pay at a later date, as well as the dispensing discounts and bonus points.

#### **4.4.2 Satisfaction with level of acceptance**

67% of respondents are satisfied with the level of acceptance of the girocard at the POS and another 23% are fairly satisfied. This adds up to an overwhelming majority of 9 out of 10 people. It is striking that a high percentage of persons who use the option of making cash withdrawals at a supermarket or petrol station till are unreservedly satisfied with the level of acceptance.

Opinions on the acceptance of credit cards are less clear-cut. 28% of respondents say they are satisfied and a further 24% say they are fairly satisfied. This adds up to a majority of 52%. As this question was also put to people who do not own a credit card, the majority of the other respondents (42%) did not comment. This reflects the lower usage of credit cards compared with girocard. The greater prevalence of the girocard means that consumers are more likely to consider its acceptance at the POS.

## Risk inclination and payment behaviour

For the first time, experimental economic methods were used as part of this study to draw conclusions about payment behaviour and its determinants. Specifically, after being interviewed the survey participants were offered the opportunity of taking part in a behavioural experiment. During this experiment, participants had to decide whether they would rather receive a definite gift of €10 or throw a die for the chance of winning €0 (if they rolled a 1, 2 or 3) or €20 (if they rolled a 4, 5 or 6). Depending on how the die landed for the participants who chose the “double or nothing” option, the sums were paid out in cash after the experiment was conducted. As the expected pay-out is the same for both options, a risk-neutral and income-maximising participant would be indifferent about his decision. However, the participant’s attitude to risk can influence his decision, meaning that a participant who is risk-seeking will be more inclined to throw the die and a risk-averse participant will tend to choose guaranteed payment.

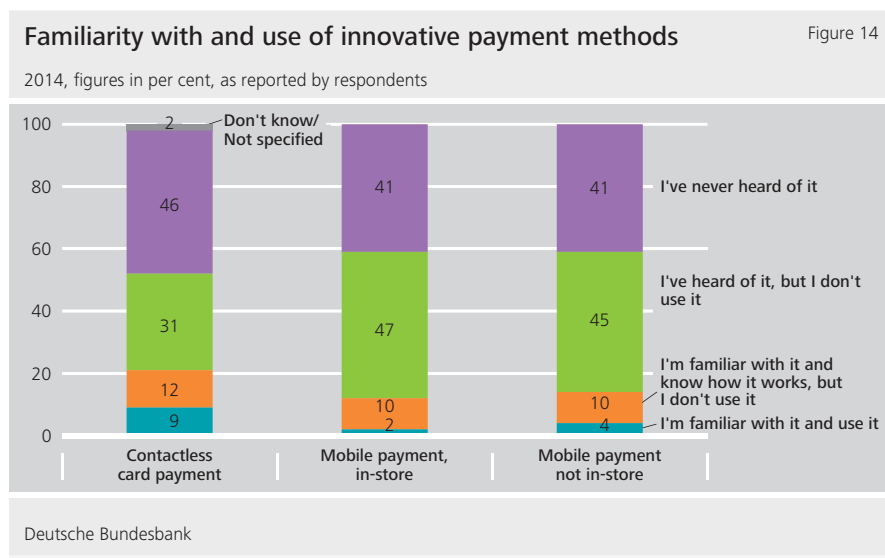
Almost 52% of participants in the experiment decided on the definite cash prize. Willingness to throw the die decreases significantly with age: 60% of people aged over 65 opt for the guaranteed pay-out. How much money individuals have available is demonstrably linked with the outcome of the decision: participants with a household income of less than €3,000 decided in almost 56% of cases to take the guaranteed payment while those with a household income in excess of this did so in just 45% of cases. The connection between self-assessed risk affinity and the outcome of the decision is, however, even stronger. Participants tending to agree with the statement „He who dares, wins“ decide in almost 65% of cases to throw the die.

In light of the information gleaned from the survey about payment behaviour, a number of connections can also be made with the decision in the experiment. 59% of those who pay purely in cash decided on the risk-free cash prize. Conversely, 59% of those who mainly use cashless payment methods chose to throw the die. Respondents who make several online purchases each week decided to throw the die in 67% of cases. It is noticeable that 77% of participants who frequently use €500 bank notes chose the die option.

Although these findings would require more detailed follow-up research to arrive at clear conclusions, it is nonetheless apparent that there is a likely connection between a person's risk propensity and their payment behaviour. This also underlines the importance of taking into account security aspects and the manner in which these are perceived by customers when developing innovative payment methods, for instance. If risk-averse individuals are to be persuaded to try new payment methods, those methods need to be particularly secure.

## 4.5 Use of and reasons for not using innovative payment methods

As was the case in 2011, the questionnaire for this year's survey contains a question about familiarity with and use of a range of innovative payment methods. Compared with 2011, 9% rather than 6% of respondents now indicate that they use contactless card payment. However, very few transactions recorded in the weekly diaries involved this payment type. Compared with traditional card payments, the role of contactless card payments remains negligible.

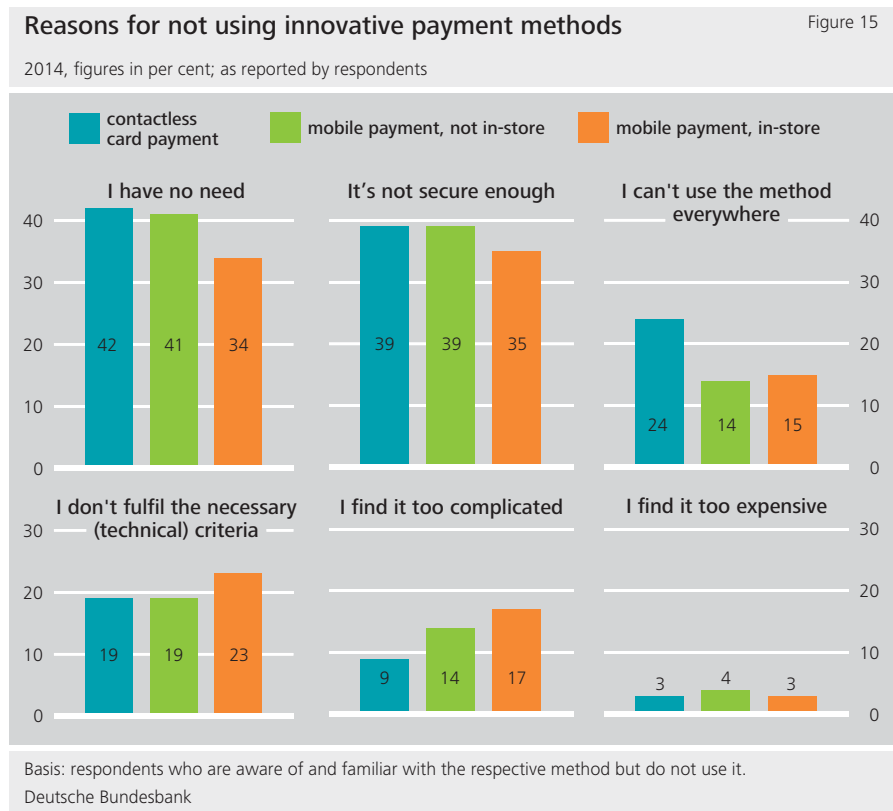


Even less use is made of mobile payments, be it in-store or in other environments (ie not in-store). Just 2% and 4% respectively of respondents use their mobile phone for this purpose. As with contactless card payment, very few transactions in the weekly diary are initiated by mobile phone.



Overall, therefore, these three innovative payment methods still play only a minor role in Germany. Respondents making no use of these three payment methods but who are aware of them and are familiar with how they work were therefore asked for their reasons for not using them.

For all three methods, insufficient need and security concerns were cited as the main reasons, mirroring the previous study (see Figure 15). However, a detailed breakdown reveals that the motives differ not only for the method under consideration but also depending on socio-demographic factors.



As regards contactless card payment, compared with the previous survey there seems, in particular, to be a growing awareness among potential users of the lack of associated infrastructure, as 24% of respondents indicate that the main reason for not using this method is the lack of opportunity. Growth in both the percentage of debit and credit cards that have the contactless function in Germany and the percentage of terminals equipped to take them in the retail sector is slow. Broken down according to socio-demographic factors, at 47%, young respondents in particular, aged between 18 and 24, feel that the lack of opportunities to use the method prevents them from deploying it whilst insufficient need (16%) and security concerns (29%) are less important.

As regards mobile payment in-store, besides insufficient need and security concerns, the non-fulfilment of technical criteria is cited by 23% of respondents meaning, for instance, that they do not have a mobile phone with the required features. As with contactless card payment, younger respondents aged 18 to 24 in particular differ from the average across all respondents, with 38% of them citing a lack of the individual technical prerequisites and 31% insufficient opportunities for deployment as reasons for not making use of mobile payment in a store. By contrast, insufficient need or security concerns are only of key relevance for a few members of this age group. The younger respondents are also more likely to cite lack of opportunities and of the technical prerequisites as their reasons for not paying by mobile phone in an environment other than a store, whereas respondents as a whole are more likely to mention insufficient need and security concerns.

To sum up, from the perspective of consumers, it is in particular their subjective perception of security, personal need and added benefit compared with traditional cashless payment methods that determines their behaviour when deciding for or against the use of innovative payment methods; however, owing to a lack of practical experience, consumers are only able to assess need and added benefit in theoretical terms. Aside from personal factors, however, technical prerequisites – ie their

fulfilment on the part of consumers and accepting parties – are a decisive factor. For contactless payment using a card or mobile phone to work, retailers' card readers need to be equipped with the necessary technology. In addition, the corresponding payment options ought to be offered by, for instance, parking ticket vending machine operators and local public transport companies. Nowadays, young respondents aged between 18 and 24 seem not only to be very open to innovative payment methods, but to have a definite need for them. And yet these methods are not widely available. Therefore, as well as supplying solutions that win over consumers with their added benefit compared with traditional payment methods and guaranteed security, providers of innovative payment methods must also speed up the roll-out of the necessary terminal infrastructure for accepting innovative payment methods.

## 4.6 Evaluation of payment behaviour by place/purpose of payment at the point of sale

The following section describes spending behaviour in terms of individual preferences for specific payment instruments depending on the place and purpose of payment.

As in the previous surveys from 2008 and 2011 (see Table 2), during the survey period in 2014 the majority of transactions related to **retail purchases for day-to-day needs**. Out of a total of 19,247 recorded transactions, 45.3% were attributable to this kind of transaction, which is slightly more than in previous years. At 35.2%, this category's share of the total value of purchases during the week has likewise increased slightly, whilst the average transaction value of €20.30 was somewhat lower than in previous years and each respondent effected 4.3 such retail transactions during a week.

The transaction-based ranking of payment locations has not changed significantly since the 2011 survey. Accounting for a share of 12.3% (unchanged since the last survey), the second most common location in terms of the number of transactions was **cafes/bars/snack bars/fast-food restaurants**. With the frequency of visits per respondent remaining unchanged and a constant average amount per transaction, the share in the total amount of all transactions by value compared with the average of previous years has risen by one-sixth, to 4.5%. This is due to the lower total turnover volume. **Filling stations** have maintained a constant share of total transactions and value of 8.2% and 12.1% respectively.<sup>28</sup> The average amount spent has fallen slightly compared with the previous survey.

Looking at a breakdown of the various transactions, **longer-term retail purchases** come fourth in the overall ranking, accounting for 5.1% of all acquisitions. Ranked in terms of the value of effected transactions, this category of purchase actually ranks second, with a share of 12.4%. However, both percentages are heading downward. The same is true of the average value per transaction and the number of transactions initiated by each respondent. For longer-term purchases, the physical POS is increasingly losing market share to online merchants.

The respondents made as many visits to a **restaurant** as in previous years, but spent an average of €29 per transaction each time, which is around one-fifth less than before. As a share of all transactions, restaurant visits rank fifth, at 3.8%. Their transaction-based share of total expenditure remained virtually unchanged from 2011 whereas the share by value (4.1%) dropped slightly.

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<sup>28</sup> Fuel prices were similar in both survey periods. The average cost in Germany of one litre of premium E10 petrol was 152.2 cents in October 2011 and 155.8 cents in June 2014 (source: <http://www.adac.de/infotestrat/tanken-kraftstoffe-und-antrieb/kraftstoffpreise/kraftstoff-durchschnittspreise>, in German only).

In terms of their share in the value of all transactions (5.0%), **services outside the home** still number among the top five payment locations, although that position is weakening. The same is true of this category's share in the number of transactions and the average transaction value.

A further interesting point highlighted by the payment diaries is the fact that mail order transactions as a share of the total number and value of all transactions have more than halved compared with the previous years, while at the same time **e-commerce** is gaining in significance. Whilst the number of online transactions has risen by a third compared with the first survey in 2008, to a level of 1.8%, and the average value per transaction has remained constant at just over €70, this kind of transaction's share of total value grew by just under 50%, to 4.9%. Reflecting this trend, the internet now ranks among the five most important „shopping locations“ in terms of volume.

What is also notable is the rise in payments made to **private individuals**. Compared with the average amount of €31 recorded by previous surveys, the latest findings show respondents spending just under €38 on this category of transaction and its share of total expenditure rose from around 3% to 3.9%.

Alongside the pattern of distribution of transactions according to the individual payment locations, the method of payment used is also of interest. When choosing a payment method, the size of the amount payable is a decisive factor. The larger the transaction amount, the lower the proportion of cash payments, on average. Not only the amount but also the payment location affects the extent to which various means of payment are used. Not every location offers a choice of payment method, partly because the necessary infrastructure for cashless payments is not available (eg bakeries and kiosks) and partly because, by its nature, the payment location or reason itself has a particularly strong influence on the choice of a particular payment instrument (eg mail order and online purchases, payments to private

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

Place/purpose of payment	Number of transactions				Value of transactions	
	Number	Share in % (2014)	Share in % (2011)	Share in % (2008)	Value in euro	Share in % (2014)
Retail purchases for day-to-day needs	8,710	45.3	42.1	44.3	176,805.42	35.2
Cafes, bars, snack bars, fast-food restaurants	2,368	12.3	12.4	11.1	22,757.82	4.5
Filling station	1,580	8.2	8.3	7.8	60,897.71	12.1
Longer-term retail purchases	987	5.1	6.0	6.2	62,145.51	12.4
Restaurant	726	3.8	3.9	3.6	20,721.08	4.1
Pharmacy	699	3.6	3.7	4.1	12,973.36	2.6
Leisure activities	659	3.4	3.4	3.6	14,498.46	2.9
Vending machines	650	3.4	4.0	4.8	4,201.10	0.8
Services outside the home	607	3.2	3.7	3.9	25,089.13	5.0
Payments to private individuals	522	2.7	2.8	2.8	19,816.10	3.9
E-commerce	337	1.8	1.5	1.3	24,544.62	4.9
Pocket money for children	256	1.3	1.8	1.7	5,443.51	1.1
Household services	151	0.8	0.8	0.9	15,389.56	3.1
Mail order	84	0.4	0.9	0.9	5,277.76	1.1
Hotel, guesthouse	33	0.2	0.1	0.3	7,145.42	1.4
Other	826	4.3	4.4	0.0	23,710.03	4.7
Place/purpose of payment not stated	52	0.3	0.3	0.9	1,127.51	0.2
<b>Total</b>	<b>19,247</b>		<b>19,870</b>	<b>24,437</b>	<b>502,544.10</b>	

Table 2

		Average value per transaction			Average number of transactions		
Share in % (2011)	Share in % (2008)	Transaction in euro (2014)	Transaction in euro (2011)	Transaction in euro (2008)	Per respondent (2014)	Per respondent (2011)	Per respondent (2008)
32.0	34.5	20.30	23	22	4.34	4.0	4.9
4.2	3.5	9.61	10	9	1.18	1.2	1.2
12.1	10.2	38.54	44	38	0.79	0.8	0.9
14.9	15.5	62.96	75	71	0.49	0.6	0.7
5.0	4.5	28.54	38	36	0.36	0.4	0.4
2.3	2.5	18.56	18	17	0.35	0.3	0.5
2.7	2.3	22.00	24	19	0.33	0.3	0.4
0.8	1.2	6.46	6	7	0.32	0.4	0.5
7.8	8.8	41.33	64	65	0.30	0.3	0.4
2.8	3.2	37.96	30	32	0.26	0.3	0.3
3.6	3.3	72.83	75	73	0.17	0.1	0.1
1.3	1.0	21.26	22	18	0.13	0.2	0.2
2.0	2.9	101.92	70	87	0.08	0.1	0.1
2.6	2.7	62.83	89	84	0.04	0.1	0.1
0.6	1.6	216.53	130	149	0.02	0.0	0.0
5.0	0.0	28.70	34	30	0.41	0.4	0.0
0.3	1.0	21.68	25	32	0.03	0.0	0.1
597,280 €	700,438 €	26.11	30	29	9.60	9.4	11.1

individuals). The following section presents the main findings of the study with respect to the use of the various means of payment by place and purpose of payment and illustrates the changes this time round compared with previous years.

An overview of the shares of means of payment in terms of turnover for each payment location and reason can be found in Figure 16. **Payments to private individuals, pocket money** and transactions in **cafes/bars/snack bars/fast-food restaurants** account for the highest proportion of cash payments. Firstly, these often involve smaller amounts and secondly, the use of cashless payment instruments is not always possible due to infrastructure constraints. The proportion of cash payments is highest in cafes/bars/snack bars/fast-food restaurants, although this is on a slight downward trend compared with the preceding surveys. The girocard and other cashless means of payment are being used with increasing frequency at these places. Credit transfers were used to effect the majority of cashless payments of pocket money and to private individuals.

Spending habits at **vending machines** and in cafes/bars/snack bars/fast-food restaurants provide a particularly clear demonstration of how infrastructure affects the choice of means of payment. Although the average transaction amount at vending machines which accept cashless means of payment is lower than in cafes/bars/snack bars/fast-food restaurants, cash is deployed far more frequently (93.5% of the time) at the latter payment location than at vending machines where just 75.4% of sales are paid for in cash. The girocard is used for most of the remaining transactions initiated at vending machines.

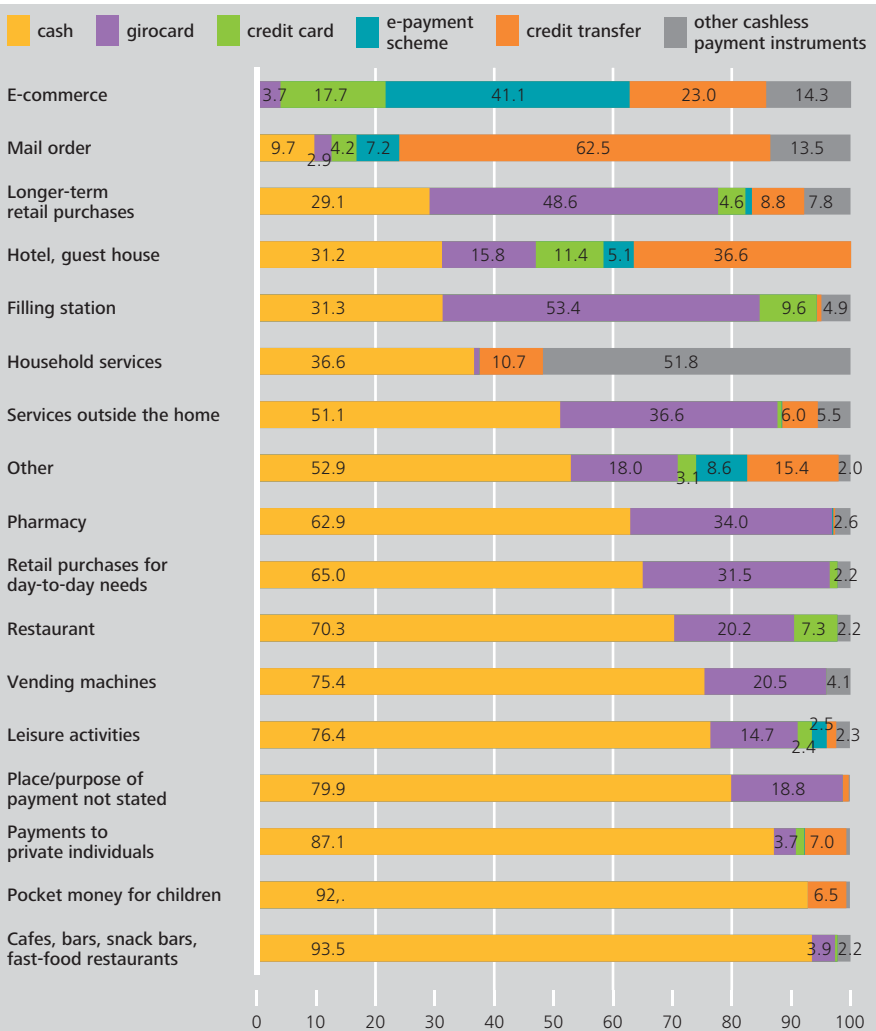
Of **retail purchases for day-to-day needs**, the vast majority of payments are still made in cash (65%), although this figure is contracting compared with previous years. As Table 3 shows, the proportion of cash payments in the first survey in 2008 stood at 69%, going down to 68.3% in 2011. In **restaurants**, by contrast, the proportion of cash payments has increased slightly from 68.8% in 2011 to 70.3% in



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

Figure 16

2014, figures as a percentage of turnover; according to payments diary



For reasons of clarity, labels for a number of payment instruments (accounting for less than 2%) were omitted. Deviations from 100% due to rounding.

2014. The remaining share of payments in restaurants is settled using a credit card or a girocard, whilst the girocard is the sole means of cashless payment used for everyday purchases at retailers. This may also be because credit cards are accepted less frequently there than the girocard.

Cashless payment instruments generally dominate at payment locations where the average transaction amount exceeds €40. In the case of **filling stations, mail order firms, e-commerce** and **longer-term retail purchases** as well as **hotels/guesthouses** and **household services**, preference is given to cashless payment methods over cash. Services outside the home, half of which are paid for in cash, constitute the exception among payment locations/reasons recording above-average turnover per payment.

The cashless means of payment used depends heavily on the respective place or purpose of payment. At hotels/guesthouses, cash and credit transfers each account for around a third of transaction value while in the case of mail order transactions, credit transfers are by far the most common payment method in terms of value (62.5%).

The girocard is used for the highest share of transactions in terms of turnover at filling stations and for longer-term retail purchases. At these payment locations, transaction amounts are higher than the overall average and the use of cashless payment instruments is accordingly more likely. Credit card use at filling stations has barely changed over time and no clear trend is discernible with regard to longer-term retail purchases. Credit transfers are primarily used to effect payment online (see Section 4.7 on online payment behaviour).

To summarise, the choice of payment method depends to a very great extent on the transaction amount. The higher the amount payable, the more likely it is that cashless payment instruments will be used. Needless to say, the infrastructure available at the payment location also dictates the payment method because, in

**Use of payment instruments broken down by selected places of payment in 2014, 2011 and 2008** Table 3

		Percentage share in total value of transactions for each payment location		
		2014	2011	2008
Cash	Retail purchases for day-to-day needs	65	68.3	69
	Longer-term retail purchases	29.1	26.3	44.6
	Filling station	31.3	33.8	40.7
	Pharmacy	62.9	68.3	82.4
	E-commerce	0.3	1.7	2.9
	Restaurant	70.3	68.8	76.2
girocard	Retail purchases for day-to-day needs	31.5	30.3	27.7
	Longer-term retail purchases	48.6	51	44
	Filling station	53.4	55.1	45.7
	Pharmacy	34	26.6	13.1
	E-commerce	3.7	6.3	6.6
	Restaurant	20.2	15.1	18.2
Credit card	Retail purchases for day-to-day needs	1.3	0.8	0.9
	Longer-term retail purchases	4.6	12.3	6
	Filling station	9.6	10.4	11.4
	Pharmacy	0	0.6	2.1
	E-commerce	17.7	24.6	6.9
	Restaurant	7.3	15.9	3.8
Credit transfer	Retail purchases for day-to-day needs	0	--	0.3
	Longer-term retail purchases	8.8	9.7	2.2
	Filling station	0.8	0	0.1
	Pharmacy	0.3	2.4	1.1
	E-commerce	23	22.6	56.6
	Restaurant	0	--	--

the absence of a terminal that can accept card payments or innovative payment methods, cash is the only possible payment option. Equally, however, there are payment locations (eg online shops) at which cashless payment instruments are, in principle, the obvious first choice. All in all, consumers' choice of means of payment at most payment locations has not changed very much compared with previous surveys, with one notable exception: e-commerce (see Section 4.7).

### Payment behaviour during the World Cup

The data for the 2014 payment behaviour study was collected between the start of May and the end of July 2014. All the German national team's matches in the 2014 men's football world championship in Brazil took place during this period. As this event was avidly followed by much of the population in Germany, it may well have had an impact on payment behaviour. On the German national team's match days, for instance, the number of transactions in cafes and bars may have risen or even in the retail sector for day-to-day needs, as the population bought more drinks and snacks. It is also possible that the match results affected purchasing behaviour, such as an increase in impulse buying following a successful game. Furthermore, a number of retailers offered discounts for each goal scored.

To verify these hypotheses, Table 3 shows the shares of the payment locations „Retail purchases for day-to-day needs“ and „Cafes, bars, snack bars, fast-food restaurants“ for match days, non-match days and days between match days.<sup>29</sup>

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<sup>29</sup> Match days refers only to games played by the German national team. Non-match days may fall between match days, but also include the weeks before and after the World Cup; days between match days comprise all days between 16 June and 13 July on which there was no event involving the German team.

The figures reveal that, on match days, far more retail transactions were effected for everyday necessities but somewhat fewer transactions in cafes, bars, snack bars and fast-food restaurants. The average transaction amounts are similar on all days. The World Cup might therefore explain why, in this year’s study of payment behaviour, the proportion of retail transactions relating to daily essentials (45.3%) is higher than in the two previous studies, when it totalled 44.3% (2008) and 42.1% (2011).

It is also possible, however, that the difference in the transaction shares for retail purchases for day-to-day needs on match days and non-match days is driven by factors unrelated to the World Cup. For instance, a number of matches may have fallen on particularly turnover-intensive days when it comes to buying everyday necessities – ie Friday or Saturday.<sup>30</sup> What is more, the differences may be

**Transaction shares at selected payment locations**

Table 4

Transaction shares at selected payment locations (in %)	Day of payment			
	Match day	Non-match day	Day between match days	Total
Retail purchases for day-to-day needs	50.2	44.9	46.3	45.4
Cafes, bars, snack bars, fast-food restaurants	11.1	12.5	12.4	12.3

**30** If, for instance, a disproportionate number of match days were to fall on a Friday or Saturday, this could result in a higher transaction share accounted for by retail purchases of daily essentials on match days compared with non-match days. If this were so, this difference could not be ascribed to a particular purchasing behaviour in connection with a match, but rather to the purely coincidental fact that match days fall on week days on which a greater number of purchases are made, even without the World Cup. When comparing match days and non-match days, it is therefore necessary to exclude the influence of weekdays.

attributable to how public holidays (Ascension Day, Whitsun and Corpus Christi) and the summer holidays fall in the calendar. Shifts in the socio-demographic profiles of the diary-keepers during, before and after the World Cup could also have contributed to differences in the recorded payment behaviour on match days and non-match days.

For this reason, the likelihood of a retail purchase for day-to-day needs was modelled using econometric methods. These allow the study to separate the influence of match days from the effect of the other factors mentioned on the likelihood of such a transaction. The key finding - that the proportion of transactions in retail purchases for day-to-day needs is higher on match days - is the same even after applying these methods.

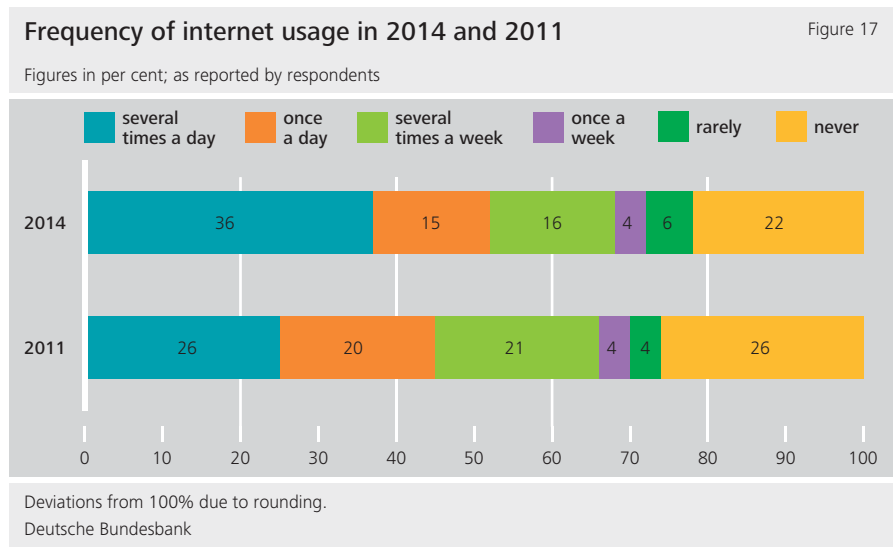
## ■ 4.7 Evaluation of online payment behaviour

### 4.7.1 Internet use in general and for shopping

As the number of internet users continues to grow, so too does online shopping in Germany, which in turn affects payment behaviour. In light of this, online payment behaviour was analysed in great detail in the previous study.

To be able to gauge online payment behaviour and its influence on the market as a whole, the study first ascertained the extent of general internet use among the population. 51% of respondents now specify that they use the internet at least once a day (2011: 46%) and 36% even say that they use it several times a day (2011: 26%). Just

22% (2011: 26%) of respondents report that they never make use of the internet. Broken down by socio-demographic factors, the trends evident in the 2011 survey have been confirmed. Younger respondents, men and persons boasting a higher level of education and a higher household income are disproportionately well represented among internet users and, in addition, they use it on a particularly frequent basis.



The most popular device for accessing and using the internet is the laptop, which is used by 64% of respondents who surf the internet at least occasionally. Desktop PCs and smartphones are used by 50% and 46% respectively. It is striking that, among younger respondents aged 18 to 24, the most widely used device for internet access is their smartphone (83%) whereas among respondents aged 65 and over it is mainly the desktop PC (68%).

Use of the internet for shopping and, consequently, the significance of the internet with regard to payment transactions have increased in recent years. In 2014, 63%

of all respondents shopped online. In 2008 the proportion was just 42% but that had already risen to 57% by 2011. In terms of turnover, the internet is now the fifth most important shopping location of all those studied (see Section 4.6).

The internet users surveyed (78% of all respondents) form the sample population for the following analysis of e-commerce. 81% of internet users shop online (2011: 74%). There are likely to be a number of reasons for the growing popularity of e-commerce. Unlike over-the-counter retail, there are no restricted opening times, the consumer gets a better overview of the entire range and can save time by not having to travel. To a large extent, the effects of socio-demographic factors identified in the previous survey on online shopping behaviour still apply. Younger and middle age groups still indulge in online shopping more frequently than older respondents. Also, the frequency of purchases increases as household income rises, with women and men shopping online at roughly the same frequency, although men still use the internet more frequently. Only the discrepancy identified in the previous survey between residents of western and eastern Germany in terms of their use of the internet for shopping is no longer in evidence. In 2011, individuals living in eastern Germany indicated significantly more often than their western counterparts that they shopped online.

#### **4.7.2 Online payment habits**

Persons confirming that they use the internet for shopping were asked about their payment habits when shopping online. Multiple answers were possible for each question. Compared with the 2011 study, it is apparent that the ranking of the payment instruments used to pay for online purchases according to the respondent self-assessments has changed in some respects and, in particular, the significance of e-payment schemes such as PayPal, giropay and "SOFORT Überweisung" has once again increased markedly, with e-payment schemes now the preferred method of

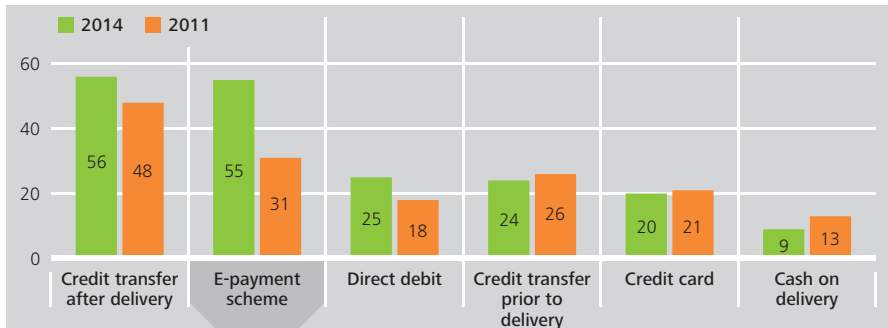


payment on the internet for 55% of respondents (2011: 31%). Their growing popularity is also confirmed by users' payment behaviour as actually noted in the diaries. Whilst in 2011 the turnover-related proportion of e-payment schemes on the internet was 34%, in 2014 that had risen to 41.1% (see Figure 16). Overall, people who are more inclined to take risks seem more likely to use e-payment schemes. Just half of the respondents who, in the experiment to measure risk inclination (see the box on page 52 to 53), chose the guaranteed payment option report that they use e-payment schemes, compared with a share of 61% among

### Payment of e-commerce transactions in 2014 and 2011

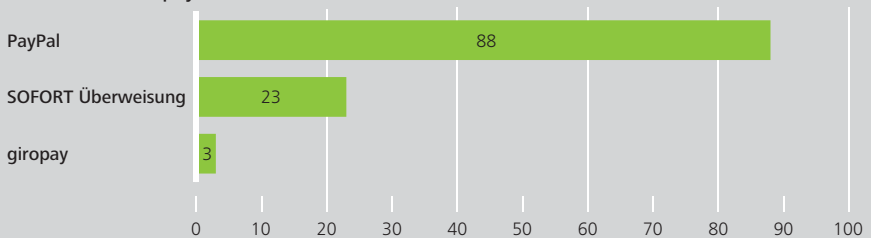
Figure 18

Figures in per cent, multiple responses possible; as reported by respondents



Memo item:

#### Breakdown of e-payment schemes in 2014



Basis: respondents stating that they shopped online.

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participants who are more willing to incur risk. It is striking that neither the amount of net household income nor the ownership of debit or credit cards influences openness to e-payment schemes. The same cannot be said of age. Younger respondents aged up to 34 are most likely to use e-payment schemes at an above-average rate, whilst respondents aged 35 or over prefer to pay by credit transfer after delivery and by credit card. As with other innovative payment methods, the respondents who are aware of e-payment schemes but do not use them cite security concerns and insufficient need as the main reasons. In terms of popularity, payment by credit transfer after delivery/receipt of goods still ranks in first place, with 56%, and that percentage has increased since 2011 (48%). However, according to the diaries, only 23% of turnover is generated by credit transfer, either before or after delivery.

Whilst payment by direct debit is now used by 25% of respondents (2011: 18%) and accounts for a higher proportion by value according to the diaries, at 24% payment in advance continues to lose ground (2011: 26%). This is followed in fifth place by payment using a credit card, at 20% (2011: 21%), whereby a higher household income also gives rise to heavier credit card use when paying online. According to the diaries, the volume of credit card transactions arising from online shopping has dropped from almost 25% in 2011 to just under 18%. Payment by cash on delivery is now used by no more than 9% of respondents (2011: 13%).

To summarise, e-payment schemes are becoming more and more popular compared with traditional, cashless payment methods and are being used more frequently. E-payment schemes have established themselves as the preferred payment method for online purchases, alongside credit transfers. Although almost one in six internet users surveyed would prefer to keep to the familiar set of payment instruments, institutional constraints at the payment location appear to be creating a demand for specialised payment instruments.

## **5 Development of and outlook for payment behaviour in Germany**

The findings of this study are summarised below, along with the outlook for the future development of payment behaviour in Germany.

### **Cash remains the most widely-used means of payment in Germany**

At €103, the average amount of cash carried in wallets and purses has not changed since the previous survey in 2011. Usage of cash at the POS has also stabilised over the last three years, covering 53% of turnover. The downward trend in the use of banknotes and coins visible between 2008 and 2011 has slowed down considerably, at least for the time being, contrary to the expectations voiced in the 2011 study of payment behaviour. A six-year comparison between 2008 and 2014 reveals that the proportion of cash payments has fallen at an annual rate of by 0.8 percentage points.

Measured against the number of transactions, however, the proportion of cash payments has fallen further, from almost 83% in 2008 to 82% in 2011, and down to 79% in 2014. The cash payment share has also declined in the area of retail purchases for day-to-day needs - the number one payment location - and in western Germany. Whilst low and medium-value transactions (less than €100) are now more frequently paid for by cashless means than in 2011, as yet no such trend is discernible for the payment of larger sums, which have a major influence on the absolute volume of cash payment.

### **girocard is available everywhere and its use is becoming more frequent**

According to the figures, 97% of respondents have at least one girocard and this payment method now accounts for approximately 30% of turnover generated at the POS, as opposed to just 25.5% in 2008. At the same time, girocard payments

with a PIN are gaining more and more ground over electronic direct debit schemes. girocard payments as a share of the overall number of effected transactions is also rising continuously. The girocard is therefore by far the most important cashless payment instrument in use at the POS and offers a sound basis for payment card-related innovations thanks to its broad distribution and very high level of acceptance in the retail sector.

### **Mobile and contactless payment methods are becoming more widely familiar**

People are becoming more and more familiar with mobile and contactless payment methods. Intensified activity on the part of international credit card companies has probably been instrumental here. However, up to now the methods have failed to catch on in Germany on account of insufficient acceptance by retailers but also due to consumers still lacking the required technical devices. From the point of view of consumers, security and the added benefit compared with traditional cashless payment instruments and also cash are the main determining factors when it comes to deciding for or against using innovative payment processes. Nowadays, young respondents aged between 18 and 24 seem not only to be very open to innovative payment methods, but also to have a need for them. And yet these methods are not widely available. If contactless payment methods were to catch on, this could make it easier to settle low-value payment transactions in particular on a cashless basis, which would have a pronounced impact on the proportion of transactions paid for in cash.

### **Rising internet sales are changing payment behaviour**

Services and goods, including longer-term retail purchases, are increasingly being ordered online. This development promotes the use of cashless payment instruments, and specialised e-payment schemes in particular are continuing to gain ground. Although there are innovations which allow online purchases to be paid

for in cash, it is fair to assume that consumers will continue to much prefer cashless payment instruments. Overall, although the influence of online payment behaviour on general payment behaviour is increasing due to the growth in internet purchases, not all cashless payment methods are likely to benefit in equal measure, as the success of one cashless payment method can easily be at the expense of another.

### **Half of people are decided on their choice of payment instrument**

Providers of payment instruments and methods are all dependent on competing for custom in Germany. At some filling stations and in a number of supermarkets, cash can be paid out at the till using the cash-back method and the presence of ATMs is relatively high. These factors serve to promote cash payment. However, cashless payment can also be made using established cashless payment instruments such as the girocard and credit cards or innovative solutions involving a smartphone or e-mail address in combination with a password. This means that each time they make a payment, consumers are spoilt for choice when deciding how to pay the amount due.

That said, half of customers are already clear in their minds regarding their choice of payment instrument: 33% of respondents say they always pay in cash, while 17% pay without cash wherever possible. Although the latter still have the option of choosing between various cashless payment instruments, they always rule out the option of paying in cash. In principle, such pre-determined behaviour can hinder innovative payment methods in catching on.

### **Many people appreciate freedom of choice when it comes to choosing a payment method**

However, for the population to have that freedom of choice in the first place, ie whether to always pay cash, mainly use cashless instruments or use either method

depending on what they are buying, a variety of interchangeable payment instruments must be available. 83% of consumers in Germany at least occasionally pay in cash at the POS, even though, in most cases, cashless payment would be possible. This signals their preference for having a choice of several payment instruments.

### **Payment behaviour is only slowly changing**

Looking at the big picture, a comparison of the three studies on payment behaviour conducted so far reveals that Germans are only slowly adjusting their behaviour. Abrupt changes to payment habits cannot be anticipated at present. Nevertheless, the growing tech-savvy generation could bring about a change in payment behaviour, causing cash payments as a share of turnover to dip below the 50% mark in the medium term.

## ■ Glossary of payment instruments

### **Bitcoin**

see the box on pages 23 to 24

### **Contactless card**

Payment card for which the data required to make a payment are transferred by contactless means, using NFC, to the POS terminal or the NFC-enabled smartphone.

### **Contactless payment with a card**

Payment method based on the use of a contactless card.

### **Credit card**

Payment card which normally involves an account being debited after a certain period of time has elapsed; if used several times, this entails either the deduction of a single amount or debiting in instalments. Payment to the retailer is guaranteed.

### **Credit transfer**

Transfer of funds, initiated by the payer, to the payee's payment account.

### **Debit card**

Payment card linked to a current account, which is debited immediately after payment is made.

### **Direct debit**

Instruction given by the payee to debit the payer's payment account, with the latter's consent.

## **EC card**

Old name for girocard.

## **Electronic direct debit scheme (ELV)**

Payment method under which a debit is generated using a debit card and authorised by the customer's signature. In contrast to a girocard payment, payment is not guaranteed by the card-issuing bank because from a legal and a practical perspective this constitutes a reversible debit.

## **e-payment scheme**

Method based on credit transfers using the payer's online banking setup (eg giro-pay, "SOFORT Überweisung") and special, internet-based electronic payment methods which enable the primary payment to be processed within a proprietary network (eg PayPal) and are merely linked to the payment account or a given payment card.

## **girocard**

Debit card scheme operated by the German banking industry under which the card can be used at ATMs and POS terminals. Once the matching PIN has been entered, payment by the card-issuing bank is guaranteed.

## **girocard with PIN**

see girocard.

## **girocard with signature<sup>31</sup>**

see electronic direct debit scheme.

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<sup>31</sup> The description „girocard with signature“ is, to all intents and purposes, a misnomer. Among consumers, however, the Electronic Direct Debit Scheme is perceived more as a card payment than a debit, which is why, for simplicity's sake, the term „girocard with signature“ was used in the survey.



### **Mobile payment, in-store**

Payment method under which payment can be made using a mobile phone, in the customer's presence, at the POS terminal on the retailer's premises. NFC technology is frequently used for this purpose, although there are other possible systems such as the use of QR codes.

### **Mobile payment, not in-store**

Payment method under which payment is made using a mobile phone at a location other than the retailer's premises. The most widespread use of this technology is SMS payment for public transport tickets or parking charges.

### **Near field communication (NFC)**

This is a standard technology used for the contactless transmission of data over a distance of a few centimetres.

### **Prepaid credit card**

Credit card that must be preloaded with funds before it can be used.

### **Retailer card with a payment function**

A customer or bonus card issued by certain retailers, or a similar card which is issued by a cooperating bank if it can additionally be used to make payments. Payment itself is usually made at a later point in time, either by direct debit or charging the amount to a credit card.

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