The costs of payment methods in the retail sector

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SUMMARY

This study examines the costs of using cash and cashless payment methods in brick-and-mortar retail and related industries. While consumers generally do not bear direct costs for individual payment transactions, retailers incur various expenses – such as transaction fees, administrative expenses or costs of transporting cash. The analysis distinguishes between monetary costs (e.g. fees, charges, equipment costs) and non-monetary costs (time commitment).

The results show that cash and girocard are the most cost-effective payment methods in the retail sector in Germany – albeit to differing degrees depending on the reference variable used. On average, cash costs €0.43 per transaction and is therefore the least expensive when looking at the costs per payment transaction. In terms of the ratio of cost to turnover, girocard is the most efficient method, at an average cost of 0.8% of turnover. International debit and credit cards, particularly Mastercard and Visa, perform worse overall and are a drag on retail trade, mainly owing to higher fees. Which means of payment are used thus has a significant impact on the costs to firms that are involved.

Another key finding concerns firm size: smaller firms bear higher relative costs. By contrast, larger merchants benefit from economies of scale and have greater bargaining power, meaning that their costs are significantly lower both per transaction and in relation to turnover. The differences between small and large merchants are particularly evident in the case of cashless procedures. Acceptance rates also vary: cash is almost universally accepted, while girocard and international debit cards are becoming increasingly widespread, but particularly in larger firms. For small businesses, transaction fees and investment costs remain a barrier to the acceptance of cashless means of payment.

The analysis of costs is based on time measurements of around 13,000 transactions at 15 points of sale and on a survey of 268 merchants of various sizes and in various sectors. Both the direct costs (e.g. fees or payment-specific equipment costs) and the indirect costs (e.g. general equipment costs) are taken into account. The study thus builds on an earlier Bundesbank study (Cabinakova et al., 2019), but expands it to include a larger sample, differentiated analyses by sector and firm size, and a revised process for recording cost components. At the same time, it complements international work and provides the most comprehensive, empirically sound overview of cost structures in the German retail sector possible.

The aim of the study is to provide real-world insights for retailers, policymakers, commercial banks, central banks and all other actors in the area of payments. The results highlight not only the relevance of cost-effective payment options for businesses, but also their importance for an efficient and competitive payment infrastructure. At the same time, the study underlines the need for cost transparency – for cash and cashless procedures alike. For only if the costs are transparent can central banks and other agents work towards efficient payments.

FOREWORD

Dear reader,

The "bouquet" of payment methods that consumers can use to make payments at the point of sale has become more colourful and larger in recent years. Alongside traditional means of payment such as cash and plastic, digital options are becoming increasingly important. Whether using smartphone or smartwatch – mobile payments have become part of everyday life for many people. This change in payment behaviour also poses new challenges for retailers. This is because even though the individual payment transaction is almost always free of charge for the final consumer, it creates costs for the retail sector, such as the expense of purchasing card readers or paying fees to payment service providers. This means that payments – and this covers all procedures – are not free of charge. At the same time, payments are essential for the economy and society to function smoothly. The resulting costs are thus counterbalanced by a fundamental value added.

The Bundesbank already examined the specific costs incurred by German retailers when using payment methods in 2019. In this new study, we are expanding our approach to develop an even deeper understanding of the cost structures of payment options in the retail sector. To this end, we look not only at individual payment methods, but also at differences between firm sizes and industries. The aim is to gain practical insights that are important for the various players in payments.

A sound understanding of the costs of various payment methods is also of considerable interest to central banks. In our function as issuers of euro banknotes and because of our central position in the economic system, we have a vital interest in safe and efficient payments. Empirically based knowledge of the costs of payment methods enables us to better understand the market for payment services and to work more effectively towards cost-efficient payments. These findings will continue to become more relevant in the future. For example, the potential introduction of a digital euro is also informed by the aim of offering a cost-effective digital payment option that is broadly accepted by retailers and consumers.

Our objective as a central bank is clear: Payments must remain secure and efficient. At the same time, consumers should continue to have the freedom to choose between cash and cashless payment methods, now and in future. It is therefore crucial that both cash and cashless payment options are made cost-efficient in order to ensure their widespread acceptance and use. The retail sector, as a central hub of everyday life and the economy, will play a key role here. I would like to express my sincere thanks to the authors of this study for their valuable insights and wish you, dear reader, an inspiring read.

Frankfurt am Main, November 2025

Burkhard Balz
Member of the Executive Board of the Deutsche Bundesbank

1. INTRODUCTION

Whether cash, cards or other cashless payment methods – every means of payment generates costs to the retail sector. This study looks at the costs per payment and their individual components. While cash or card payments at the point of sale do not usually entail direct costs for consumers,[1] the retail sector does indeed incur costs. These are not always transparent and are sometimes difficult to quantify. This is because they are made up of a large number of components that are variable and not always clearly attributable. Examples include transaction fees, maintenance costs for payment terminals, or personnel costs for managing cash received. In addition, digitalisation has altered the payments landscape and thus also payment habits and regulatory frameworks. All of these aspects have an impact on the costs associated with the means of payment and can influence which payment methods retailers offer to their customers.[2] This makes it even more important to obtain up-to-date information on the costs of different means of payment for the retail sector in Germany.

Costs are only one of several factors influencing the supply of payment methods in the retail sector. For example, merchants can choose to accept certain means of payment, even if these are more expensive than alternatives – for example, if a particularly large number of customers want to use them. Political and regulatory initiatives also influence the supply of payment methods. These include, for example, policy measures to strengthen cash acceptance or to promote cashless payment options[3] as well as the potential introduction of a digital euro that could be linked to a requirement for acceptance for parts of the retail sector. In addition, there are initiatives and incentives by private actors to promote cashless payments.

As the central bank for Germany, the Bundesbank has the task, amongst other things, of ensuring safety and efficiency in cash and cashless payments. In fulfilment of this public mandate, following an initial study in 2019[4], it is once again examining the cost structures of various, frequently used means of payment from a retailer's perspective. To this end, the present study empirically determines and compares the costs of cash and card payments in brick-and-mortar retail stores. The results are intended to contribute to the objective discussion on the costs of payment methods. Greater cost transparency can strengthen competition and enhance the efficiency of payment settlement at this juncture. The Bundesbank is also committed to peoples' freedom to pay as they choose. This requires that both cash and cashless payment methods be able to be used safely, efficiently and cost-effectively.

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1 Surcharges (i.e. price mark-ups) for card payments, which are governed by Regulation (EU) 2015/751 on interchange fees, have been prohibited in the EU since 2018 under the second Payment Services Directive (PSD 2). In Germany, this is codified in Section 270a of the Civil Code (Bürgerliches Gesetzbuch). The European Commission's recommendation (2010, p. 70, No 4) stipulates that no mark-ups should be applied to payments made using euro banknotes and coins. However, discounts are permitted depending on the means of payment.
2 According to the regular study by the EHI Retail Institute, the issue of the costs of payment systems has recently been becoming increasingly important to firms (see EHI Retail Institute, 2025).
3 For example, the current Federal Government's coalition agreement envisages that cash payment and at least one digital payment option should be offered in all day-to-day business (see Federal Government (2025)).
4 See Cabinakova et al. (2019).

The study focuses on the direct and indirect costs incurred by the bricks-and-mortar retail sector in connection with the acceptance of payment methods – costs incurred by online retailers or other actors such as credit institutions, payment service providers, CIT companies or the central bank are ignored. This means that not all the costs associated with a means of payment in an economy are captured. Nonetheless, looking at the retail sector is a particularly suitable analytical approach, as many of the costs incurred by the aforementioned actors and service providers are ultimately passed through to the retail sector. The study thus provides an important piece of the puzzle for the macroeconomic analysis of payment costs.

The study is structured as follows. Chapter 2 presents the structure of the retail sector in Germany, provides an overview of past international and national studies on the costs of payment methods from merchants' perspective, and describes challenges in determining such costs. The results of the survey are presented in Chapter 3. Chapter 4 puts key findings in context and concludes with an outlook.

2. THE COSTS OF PAYMENT METHODS IN THE RETAIL SECTOR: OVERVIEW AND LITERATURE

2.1. The structure of Germany's retail sector

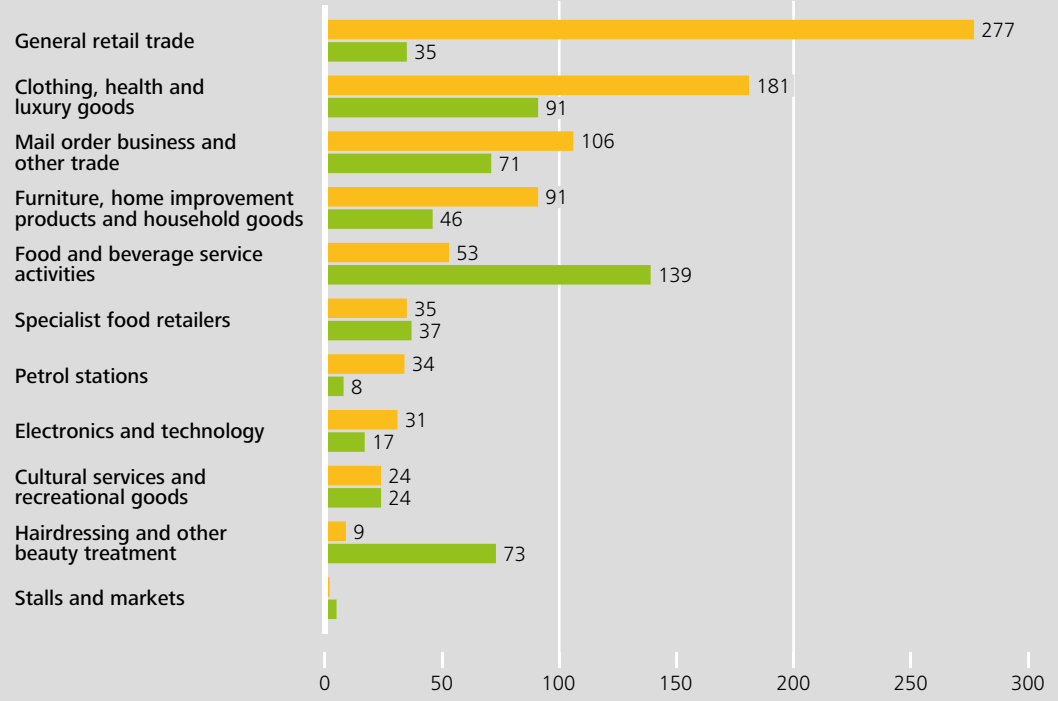
The retail sector in Germany is characterised by a high degree of heterogeneity in terms of industries, firm sizes, types of sales outlets and accepted payment methods. As there is no universally accepted definition of the retail sector, it is not always possible to clearly define the corresponding economic segments. In general, retail refers to the part of the trade where goods or services are sold directly to final consumers – both in bricks-and-mortar stores and via online shops and other points of sale. According to the Federal Statistical Office's Classification of Economic Activities 2008 (WZ 2008), retail comprises Section 47, which includes, amongst other things, food retailers, clothing stores and DIY stores.[5] In addition, there are other economic industries in which goods or services are sold to final customers – such as restaurants or hairdressers. It therefore seems logical to include a wide range of consumption-related industries when analysing the costs of payment methods. This study therefore takes into account not only retail as defined in WZ 2008, but also parts of food and beverage service activities[6] and hairdressing and other beauty treatment[7]. For analytical purposes, these three industries are summarised as follows: (1) retail in the narrower sense, (2) food and beverage service activities and (3) hairdressing and other beauty treatment. Whenever the term "retail sector" is used in the following, the term refers to these three groups collectively, unless otherwise noted.

5 See Section 47 (Retail trade except motor vehicles and motorcycles), Federal Statistical Office (2024).
6 See Group 56.1 (Restaurants and mobile food service activities), Group 56.30.1 (Public houses), and Group 56.30.3 (Bars), Federal Statistical Office (2024).
7 See Group 96.02 (Hairdressing and other beauty treatment), Federal Statistical Office (2024).

Structure of German retail trade

Chart1

Sales and number of companies per sector — **Turnover** in € billion — **Number** in thousands



Source: Federal Statistical Office (2024).

Measured in terms of turnover, general retail trade is by far the largest segment within the sector[8]. This is followed by clothing stores and pharmacies, mail order business, as well as furniture, home improvement and household goods stores (see Chart 1). Many companies in these segments with high turnover (especially supermarkets/discounters, clothing stores, furniture stores and DIY stores) have high market shares, strong brand presence and often large branch networks. Owing to their size, they also benefit from economies of scale and standardised payment processes. Looking at the number of establishments, however, food and beverage service activities are ranked first, followed by businesses in the clothing, health and luxury goods as well as hairdressing and beauty treatment segments. Many of these segments are very small-scale and characterised by proprietor-run businesses with a specialised range of services and high customer loyalty. At the same time, the large number of small acceptance points leads to a high degree of heterogeneity in terms of payment methods, technological features and cost structures.

8 Segments are subdivided using the Federal Statistical Office's Classification of Economic Activities according to WZ 2008 (2024): retail sale in non-specialised stores (47.1), retail sale of food, beverages and tobacco in specialised stores (47.2), retail sale of automotive fuel in specialised stores (47.3), retail sale of information and communication equipment in specialised stores (47.4), retail sale of other household equipment in specialised stores (47.5), retail sale of cultural and recreational goods in specialised stores (47.6), retail sale of other goods in specialised stores (47.7), retail sale via stalls and markets (47.8), retail sale not in stores, stalls or markets (47.9), food and beverage service activities (56.1, 56.30.1, 56.30.3), and hairdressing and other beauty treatment (96.02).

German retailers accept a wide variety of payment methods. Alongside cash, these include payment cards that can be broken down further into debit and credit cards. Added to this is the increased use of mobile payment methods, where payments are made using a smartphone or smartwatch on which a card is usually stored. Acceptance differs significantly between bricks-and-mortar retailers and online retailers. While online retailers generally do not accept cash and primarily offer advance payment, purchase on account or digital payment methods such as PayPal, cash and card payments continue to dominate in bricks-and-mortar retail. According to the Bundesbank's payment behaviour study, cash payments were accepted in 94% of the transactions recorded in 2023 and cashless payments were also possible in 81% of cases.[9] This means that cash is accepted in virtually all payment situations under consideration. Although the acceptance of cashless payment methods is lower, it has risen significantly in recent years.

Cash and debit cards are the most frequently used means of payment in bricks-and-mortar retail. According to the results of the payment behaviour study, cash accounted for 51% of transactions (27% of turnover) and card payments for 42% (57% of turnover) in 2023. At 37% (47% of turnover), debit card transactions were the dominant form of card payments, the majority of which being via girocard. Credit cards stood at 5% (9% of turnover). Mobile payment methods such as Apple Pay or Google Pay accounted for 6% of the transactions and turnover – a significant increase compared with 2021. Other payment methods, such as in-store credit transfers or purchase on account, played only a minor role, each accounting for less than 2% of transactions and turnover. However, the results of the payment behaviour study can only be compared with the present study to a limited extent, as they are based on consumer data and also cover points of sale that do not fully comply with the definition of the retail sector used here.

9 Deutsche Bundesbank (2024).

2.2. The cost components of payment methods in the retail sector

Regardless of which means of payment consumers choose, every method generates costs. Costs are generally understood as depreciation that arises in the context of the performance of operational activities. These can be monetary or non-monetary. Monetary costs are measurable in monetary units and include expenditure such as wages, purchases or charges. Non-monetary costs, typically time costs, cannot be expressed directly in monetary terms and must therefore be converted using suitable methods – for example, using wage equivalents. Time costs can also have a significant impact on the efficiency and effectiveness of retail trade. In order to obtain a complete picture of the costs associated with the use of payment methods, both monetary and non-monetary costs should therefore be recorded and assessed.

In the retail sector, the main costs can be broken down into the categories equipment, fees, loss/theft and time costs. Some of these costs are directly attributable to a means of payment, while other – more indirect – costs are generated irrespective of the method used, but have to be assigned to the respective means of payment via allocation keys. Such a distinction concerns, for example, equipment costs, which can be divided into general and payment method-specific equipment costs. For instance, POS systems are required regardless of the accepted method in each case and their costs are therefore distributed proportionally across all means of payment. By contrast, the purchase or hire of payment method-specific devices is different. In the case of card payments, this mainly applies to terminals, the hire of purchase of which generates additional costs. There are differences according to device type: while high-performance terminals are often used in bricks-and-mortar retail, markets and delivery services are increasingly relying on low-cost mobile solutions. Cash also generates specific equipment costs, such as for cash deposit and counterfeit detection devices or vaults.

Fees for services related to transactions are another key type of cost. For card payments, these are, in particular, transaction fees incurred per transaction and usually consist of a percentage of the sale and a fixed amount. These may include interchange, network operator and acquirer fees, amongst other things. In addition, payment service providers often charge ongoing service fees for the use of their infrastructure as well as set-up fees for initial installation or connection. Cash is also subject to fees: credit institutions sometimes charge deposit, withdrawal or administration fees – especially in the case of larger cash volumes. There is also a charge for the provision of coin rolls. Furthermore, larger retailers often commission security services to collect and transport cash for a fee. Such fees are typically incurred either as fixed costs per deposit or as a percentage of the total amount deposited.

Theft, fraud and associated insurance costs are also a form of monetary cost. Cashless procedures can result in payment disruptions, payment defaults or chargebacks, the costs and potential fees of which sometimes have to be borne by retailers. In order to hedge against this, some retailers take out insurance. For cash, external perpetrators as well as own staff pose an increased risk of theft. Moreover, cash differences can arise as a result of incorrect change being issued or cash withdrawal errors. In order to reduce these risks, some retailers also take out policies to secure cash holdings as well as the transport of cash. The cost of the insurance premiums varies depending on the risk profile and the insured amount.

A key form of non-monetary costs is the time spent dealing with payment methods both at the point of sale and in administration. Provided that the payment is not made via self-service systems, sales staff must process the transaction. Additional time is required to prepare and follow up the checkout process. The total amount of work involved differs depending on the means of payment. Card payments require, for example, terminals to be operated and updated, receipts to be sorted and archived as well as reconciliation with payment service providers. These activities involve technical support, regular monitoring and training. Cash payments entail different requirements: checking banknotes for authenticity, issuing change, arranging repeat orders or cashing up after a shift. In addition, the cash received must be counted, packaged and handed over to the bank or transported – processes that require special care and security.

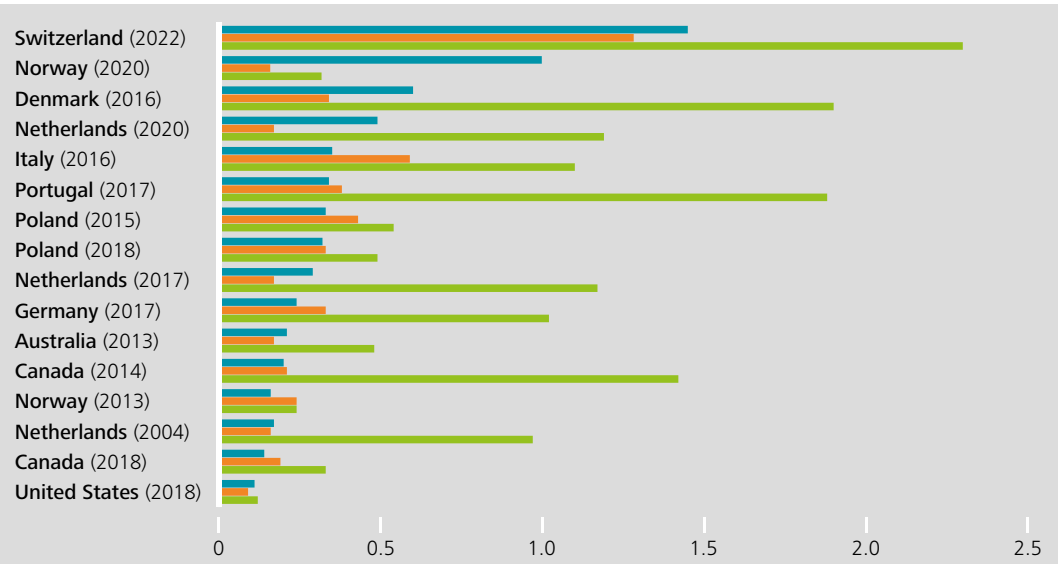
All of these cost categories can vary significantly depending on firm size and transaction frequency. Larger retailers benefit more from economies of scale as they distribute their fixed costs across higher transaction volumes, enabling them to use their infrastructure more efficiently. In addition, the high volumes provide a good starting point for negotiating better conditions with service providers. Smaller retailers lack these volumes, meaning they often pay higher fees per transaction. There is also a clear difference in time costs: while in larger firms it mainly leads to monetary outflows due to staff being deployed and remunerated, in smaller firms it is often the owners themselves who take on these activities. Time savings do not then automatically result in a reduction in monetary outflows. Accordingly, the cost structures of individual retailers differ considerably both in terms of nature and size.

2.3. Overview of the literature on the costs of payment methods in the retail sector

There is a large number of studies that address the costs of payment methods from a retailer's perspective. While some studies focus exclusively on the retail sector,[10] others examine total payments,[11] including retail. The aim of these studies is either to estimate business expenses or to determine aggregate payment costs. In addition to country-specific analyses, there are also comparative international studies that not only show differences and similarities across national borders, but also reveal different methodological approaches.[12] Although this heterogeneity makes comparability more difficult, it provides valuable insights into national payment habits and cost structures.

Cross-country comparison of the costs of payment methods per transaction*

Chart 2



Sources: Authors' compilation based on selected studies by Brits and Winder (2005), Norges Bank (2014, 2022), Stewart et al. (2014), Kosse et al. (2017), van Marwijk et al. (2018, 2021), Banco de Portugal (2019), Cabinakova et al. (2019), Danish Payments Council (2019), Przenajkowska et al. (2019, 2020), Banca d'Italia (2020), Felt et al. (2019), Junius et al. (2022), Trütsch et al. (2024). * Year of data collection in brackets. If a study reports figures for both national debit card systems and international debit card systems (Visa/Mastercard), the lower figure from the national debit card system was generally used.

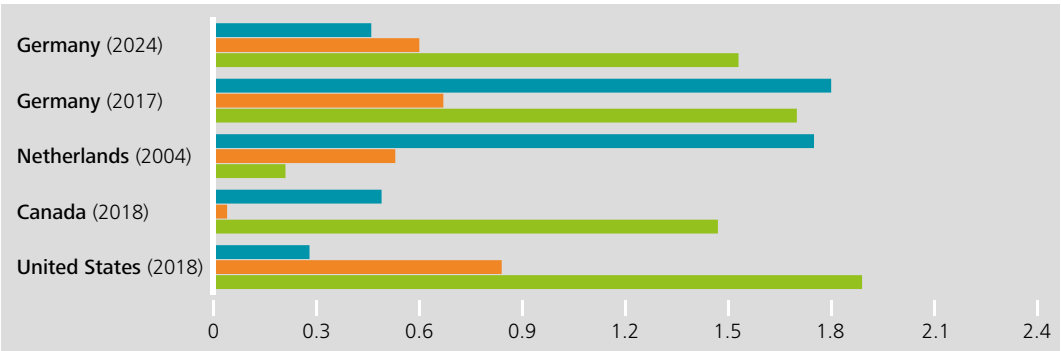
10 See, for example, Cabinakova et al. (2019) or Ibi Research (2025).
11 Studies that seek to calculate the costs of using payment methods for the economy as a whole often focus on "resource costs", i.e. costs that remain in a sector, such as time costs. This avoids double counting of costs in different sectors.
12 See, for example, Schmiedel et al. (2012) and Junius et al. (2022).

International studies show a clear dispersion of the costs per means of payment across countries. As shown in Chart 2, the average cost of cash payments per transaction is between €0.11 (United States, 2018) and €1.45 (Switzerland, 2022). Debit card payments cost between €0.09 (United States, 2018) and €1.28 (Switzerland, 2022), while credit card payments tend to be most expensive, with values between €0.12 (United States, 2018) and €2.30 (Switzerland, 2022). Most studies primarily compare the three categories "cash", "debit card" and "credit card"; mobile payment methods are reported less frequently, as they are often based on card payments and have similar fee models. There is no discernible pattern regarding relative costs: the highest costs are for cash in some analyses, while in others it is the most cost-effective option. For example, Italy (2016) reveals cash costs (€0.35) that are lower than those of debit cards (€0.59), while, at €0.60 and €0.34, respectively, the opposite is true for Denmark (2016). In some countries, cash and debit card costs are almost on a par (e.g. Poland (2018)). In some countries, developments over time are also striking: in Norway and the Netherlands, for example, cash costs rose from €0.17 (2013) to €1.00 (2020) and from €0.16 (2004) to €0.49 (2020), respectively. At the same time, a sharp reduction in the cash infrastructure was observed in both countries.[13] The differences illustrate that not only the respective means of payment, but also the frequency of use and thus the fixed costs attributable to transactions, as well as market structures and regulatory frameworks, influence overall costs.

Cross-country comparison of the costs of payment methods per turnover*

Chart 3

As a percentage of turnover



Sources: Authors' compilation based on selected studies by Brits and Winder (2005), Cabinakova et al. (2019), Felt et al. (2020), Ibi Research (2025). * Year of data collection in brackets. If a study reports figures for both national debit card systems and international debit card systems (Visa/Mastercard), the lower figure from the national debit card system was generally used.

13 The observed increase in unit costs is likely to be due, amongst other things, to the fact that the reduction of cash infrastructure has resulted in longer distances as well as higher fees and fixed costs being distributed across a smaller number of transactions.

In addition to the costs per transaction, some studies also report the costs in relation to turnover. Even though the dataset here is much narrower, differences between countries and payment methods are still evident (see Chart 3). In the United States (2018), costs were on average 0.28% of turnover for cash, 0.84% for debit cards and 1.89% for credit cards. In Canada (2018), 0.49% was recorded for cash, 0.04% for debit cards and 1.47% for credit cards, making debit cards exceptionally cheap. The Netherlands (2004) also exhibits such a range: cash, however, resulted in the highest costs, at 1.75% of the transaction amount, while debit and credit cards were significantly cheaper at 0.53% and 0.21%, respectively. These findings suggest that, also in relation to turnover, credit cards are usually associated with the highest relative costs by international comparison, while debit cards, in particular, can be significantly cheaper in some countries. In addition to fee models, differences between countries can also be explained by different average purchase amounts: in markets with a high share of cash and low transaction amounts, the relative cost of cash appears higher, as fixed costs plays a greater role.

For Germany, there are several reliable studies on the costs of payment methods from the retail perspective. In a joint study conducted by the Bundesbank and the EHI Retail Institute, average costs per transaction were calculated at €0.24 for cash (1.80% of turnover), €0.33 for debit cards (0.67% of turnover) and €0.97 for credit cards (1.70% of turnover).[14] The EHI Retail Institute also regularly documents the fees retailers are charged and considers girocard payments, in particular, to be particularly cost-effective. Krüger and Seitz (2011) show that, while cash is beneficial for small transaction amounts, the relative costs increase with higher-priced consumption baskets. Current figures from Ibi Research (2025) show average cash costs of 0.46% of turnover, costs for girocard payments of 0.60% of turnover and significantly higher figures for international debit cards (1.24%) and credit cards (1.53%).

A key methodological difference between the studies concerns the cost types and reference variables considered. While some studies focus on direct transaction fees, others also include non-monetary aspects such as staff costs. These are often captured using valuation approaches such as fair value measurement, which leads to methodological inconsistencies. In addition, the underlying reference variables vary: some studies determine costs per transaction, others in relation to turnover. The choice of reference variable has a major bearing on the interpretation of the results, especially in the case of highly volatile payment amounts. Furthermore, there is the complexity of cashless payments, which often involve multiple actors (acquirers, network operators, payment service providers). The resulting fee models are often multi-tiered and opaque. Regulatory differences (such as in the case of interchange fees) also affect the results.

14 See Cabinakova et al. (2019).

Overall, it can be stated that the costs of payment methods vary considerably in an international comparison – both per transaction and relative to turnover. The results depend heavily on the market penetration of the respective payment method, on retailers' negotiations with service providers and on the transaction structure (e.g. average amount, frequency). Viewed in terms of transactions, cash tends to perform better, as it is often used for many, smaller payments. In terms of turnover, however, debit cards usually prove beneficial, as they are used to settle higher amounts on average. Another important factor is whether these are national card systems (such as girocard in Germany) or international debit cards (such as Visa Debit, Mastercard Debit) – the latter are usually more expensive for retailers. Credit cards almost always generate the greatest costs due to high fees. Country-specific studies that take into account not only the types of costs but also the context of use and the institutional framework conditions are therefore essential for reliable comparisons.

3. EMPIRICAL ANALYSIS OF THE COSTS OF PAYMENT METHODS IN THE GERMAN RETAIL SECTOR

3.1. Methodology

Two complementary survey approaches were combined to determine the costs of payments in the retail sector: time measurements of transactions and a survey of merchants. The time measurements were used to quantify average cashier time per payment transaction. The total duration was recorded, from when the cashier at the point of sale stated the purchase price to when the cashier handed over a receipt or closed the till. In addition, contextual information such as the type of transaction, unique elements of the process (e.g. PIN errors, a lack of change, cash withdrawals), and customer characteristics were documented. A total of around 13,000 transactions were collected at 15 points of sale in different sectors and cities, covering different days of the week and times of the day in order to obtain the most representative picture of typical payment processes possible.

The additional survey of firms included small, medium-sized and large firms from the retail sector, food and beverage service activities and hairdressing and cosmetics salons. This was based on a quota sample according to sector and firm size to ensure sufficient coverage of the retail structure. A total of 500 questionnaires were completed, 268 of which were used to calculate costs due to completeness and sufficient sample numbers. Differences between the sample and the population were later offset by applying a weighting. All types of payment-related costs were surveyed, including equipment costs, fees, administrative and staff costs, insurance costs and losses resulting from theft.[15]

The main outcome of the study is the calculation of total costs per payment method. Two ratios were formed to compare the payment methods: costs per transaction and costs relative to turnover. While the first ratio allows a uniform analysis irrespective of the frequency of use of a payment method, the second shows the relative share of costs in turnover and allows conclusions to be drawn about the ratio of costs to turnover. The combination of these perspectives provides a comprehensive picture of the cost structure of the different payment methods. Based on this, further evaluations were carried out, broken down by firm size and industry.

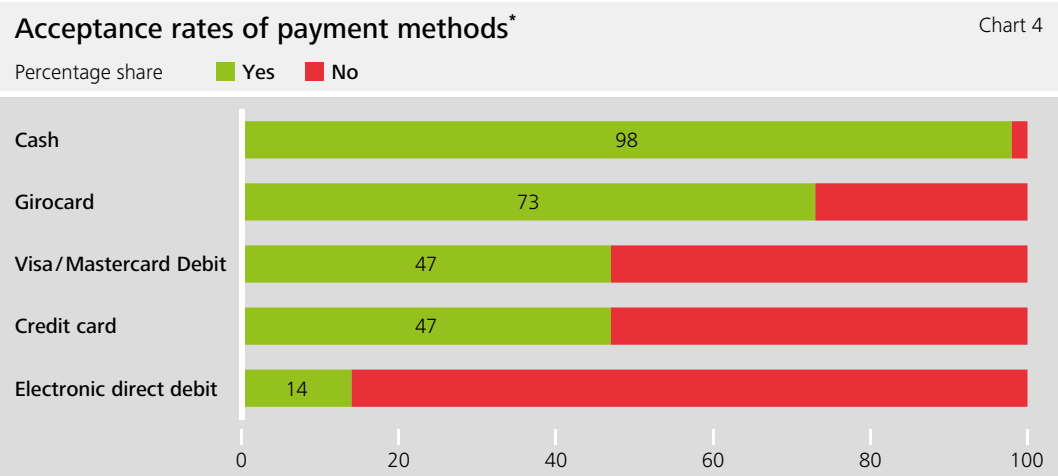
15 A more detailed description of the survey approaches, the sampling process and the individual evaluation steps can be found in the methodological annex.

3.2. Acceptance rates of payment methods

In order to be able to record the costs of individual payment methods per firm, the first step was determining which payment methods the surveyed firms accepted for incoming payments. Only these payment methods were subsequently included in the cost calculations. At the same time, the collection of acceptance rates allows the significance of each payment method to be categorised within the sample.[16] Cash was almost universally represented with an acceptance rate of 98%, making it the most widely used means of payment (see Chart 4). This was followed by girocard, which had an acceptance rate of 73%. By contrast, only around half of firms accepted Visa and Mastercard debit cards and credit cards.[17] The electronic direct debit scheme had the lowest acceptance rate among all common payment methods, at just 14%. This relatively low acceptance – even compared with previous years – is consistent with the results of other studies.[18] Due to this low prevalence, only a few observations were available for electronic direct debit, meaning that no robust cost analysis could be carried out for this payment method (see Section 3.3).

Acceptance rates of payment methods*

Chart 4



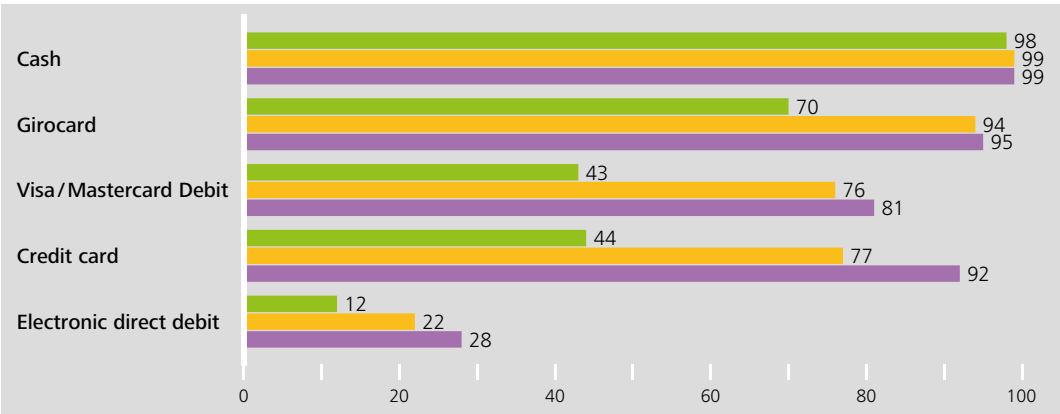
* Basis: All firms surveyed (n=473). Question: Which of the following payment methods do you accept in your bricks-and-mortar stores? Multiple responses possible.

16 For information on the acceptance of cash and cashless payment methods in retail stores, see, for example, Deutsche Bundesbank (2024), Ibi Research (2025) and European Central Bank (2024b). For more information on the acceptance of the various payment methods in online retail, see, for example, EHI Retail Institute (2024a).
17 While the acceptance rates of Visa and Mastercard credit cards were at the same level, American Express credit cards were accepted much less frequently in 2023 (22% in the total sample). This is consistent with other studies (e.g. Ibi Research (2025)).
18 See, for example, Ibi Research (2025), showing 15% at bricks and mortar retailers.

Acceptance of cashless payment methods increases with firm size. While almost all surveyed firms – regardless of their size – accepted cash, the prevalence of cashless procedures increases markedly as the size of the business grows (see Chart 5). For example, more than 90% of firms with at least ten employees accept girocard, while the corresponding share for small enterprises (under ten employees) is 70%. A similar pattern is observed for Visa and Mastercard debit cards as well as credit cards, which are accepted less frequently than girocards overall. Here, too, there are clear differences by firm size: Less than half of small firms accept these cards, while the share is considerably higher for larger firms.

Acceptance rates of payment methods by firm size

Chart 5

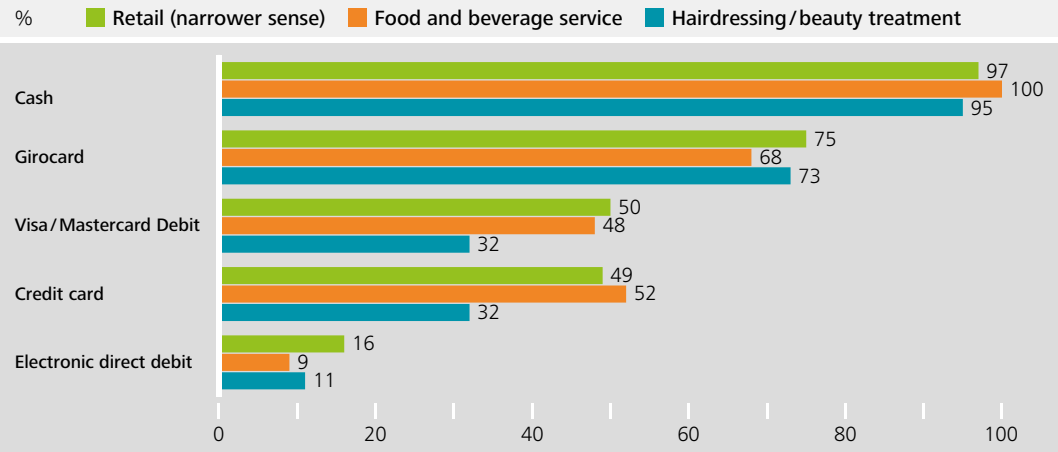


Acceptance rates also differ greatly between the industries under review. Cash is almost fully accepted across industries; the acceptance rate is 97% in retail (narrower sense) and 95% at hairdressers and cosmetics salons. In food and beverage service activities all surveyed firms accepted cash (see Chart 6). At 75%, girocard is accepted more frequently in retail (narrower sense) than in food and beverage service activities (68%) and is also slightly more often than at hairdressers and beauty salons (73%). Visa and Mastercard debit cards are accepted by around one in two (50% and 48%, respectively) of the surveyed companies in the retail (narrower sense) and in food and beverage service activities and have considerably more widespread acceptance there than at hairdressers and beauty salons (32%). This pattern is also evident for credit cards: These are accepted by around one in two companies in retail (narrower sense) and in food and beverage service activities, while they are much less common in the hairdressing and cosmetics sector, at around one-third.[19] Electronic direct debiting is most widely used in the retail sector (16%), followed by hairdressers/beauty salons (11%) and food and beverage service activities (9%).

19 American Express was accepted less frequently across all sectors under review. Acceptance rates were well below those for Visa and Mastercard credit cards in retail trade (23%), food and beverage service activities (26%) and hairdressers and beauty salons (8%).

Acceptance rates of payment methods by industry

Chart 6



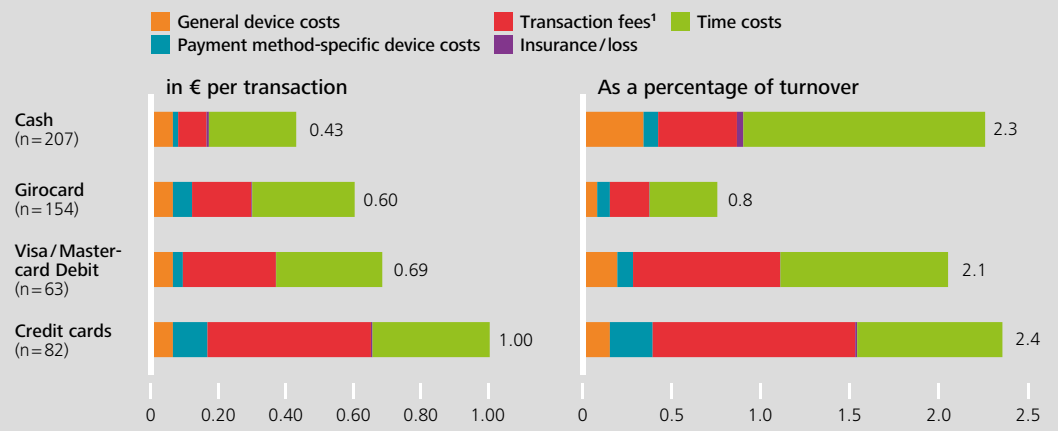
These results illustrate that, in addition to the high prevalence of some payment methods overall, there are significant differences across firm sizes and industries. Cash and girocards are firmly established in almost all segments and are accepted almost always or relatively frequently across all firm sizes and industries. However, the acceptance of girocards is markedly lower for small firms (fewer than 10 employees). By contrast, international debit and credit cards as well as electronic direct debit are generally accepted less frequently. Their prevalence varies both between industries and depending on firm size. Smaller firms, hairdressers and beauty salons in particular, have low acceptance rates, while larger firms and retailers in the narrower sense, in general, achieve significantly higher acceptance rates.

3.3. The costs of payment methods in the German retail sector

Cash has the lowest cost per transaction, while girocard is the cheapest in relation to turnover. On average, the costs per transaction for cash amount to €0.43, while girocard costs €0.60 (see Chart 7). Although the cost of cash per payment transaction is lower, the picture changes when examined in relation to turnover: girocard has the lowest cost at 0.8%, while cash is significantly higher at 2.3%. Visa and Mastercard debit cards, at €0.69 per transaction and 2.1% of turnover, move above girocards. At €1.00 per transaction and 2.4% of turnover, credit cards generate the highest costs. This means that the retail sector in Germany has two cost-effective options: cash and girocard. Which is more cost-effective depends largely on the approach used (costs per transaction or costs in relation to turnover).

Total costs per payment method*

Chart 7



***** Calculation: Weighted aggregate costs per payment method divided by the aggregate number of transactions or aggregate turnover.
1 Cash: fees for supply and removal.

The payment methods differ not only in the amount, but also in the structure of their costs. Table 1 shows the individual cost components for cash, girocard, debit cards from Visa and Mastercard and credit cards – both per transaction and in relation to turnover. It is striking that, in the case of cash, it is mainly time that makes up a large share of costs, while transaction fees play a key role in card schemes – particularly in the case of credit cards. Equipment costs consist of a general share (e.g. POS purchases and maintenance), which is the same for each transaction across all payment methods, and a payment-specific share. This is somewhat more pronounced for card procedures than for cash. Insurance costs and theft losses are virtually negligible in all procedures, but they are nevertheless somewhat higher for cash, as the physical handling of banknotes and coins entails additional risks.

Cost components per payment method by transactions and turnover Table 1

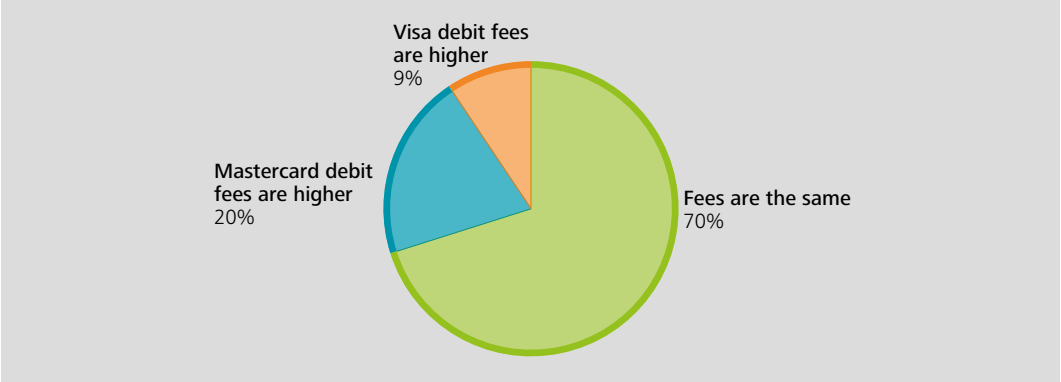
	Cash	Girocard	Visa/ Mastercard Debit	Credit cards
Cost per transaction				
General device costs	€0.07	€0.07	€0.07	€0.07
Payment method-specific device costs	€0.02	€0.06	€0.03	€0.10
Transaction fees/ fees for supply and removal	€0.08	€0.18	€0.28	€0.48
Insurance & loss	€0.01	€0.00	€0.00	€0.00
Time costs	€0.26	€0.30	€0.31	€0.35
Total	**€0.43**	**€0.60**	**€0.69**	**€1.00**
Cost as a percentage of turnover				
General device costs	0.3%	0.1%	0.2%	0.2%
Payment method-specific device costs	0.1%	0.1%	0.1%	0.2%
Transaction fees/ fees for supply and removal	0.4%	0.2%	0.8%	1.1%
Insurance & loss	0.0%	0.0%	0.0%	0.0%
Time costs	1.4%	0.4%	0.9%	0.8%
Total	**2.3%**	**0.8%**	**2.1%**	**2.4%**

There are significant differences in the size of transaction fees between card schemes. The average girocard fees are lowest, at €0.18 per transaction, or 0.2% of turnover. By contrast, the fees charged on international providers' debit cards are already markedly higher, at an average of €0.28 and 0.8%, respectively. Credit cards, at €0.48 per transaction and 1.1% of turnover, are around three times more expensive for the firms under review than girocard. This is likely to be due to the resulting interchange fees and, in particular, additional scheme fees, which are higher for credit cards than for debit cards.[20] Fee amounts may vary not only between the procedures themselves, but also between individual service providers. However, it seems justified to consider Visa and Mastercard debit cards together: most firms estimate the fees for Visa and Mastercard debit cards to be the same. For example, 70% of firms that accept both Visa Debit and Mastercard Debit indicated that the fees were identical (see Chart 8). Of the remaining enterprises, 20% reported that Mastercard Debit was more expensive, while 9% reported that Visa Debit was more expensive. On average, the fees for Visa are therefore likely to be somewhat lower.

20 The EHI's regular study on card systems in the retail sector, for example, also provides a more comprehensive list of fee structures; see EHI Retail Institute (2025).

Comparison of fees between Mastercard Debit and Visa Debit

Chart 8



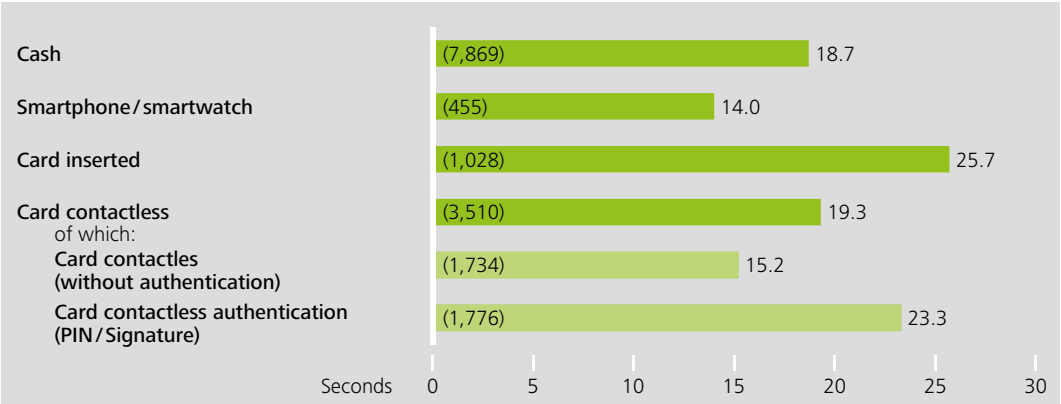
Basis: All surveyed companies that accept Visa Debit and Mastercard Debit (n = 225). Question: What is the fee rate for an average payment using Mastercard Debit compared with an average payment using Visa Debit?

Time expenditure is calculated using cashier times and expenses for administrative activities. In order to determine the cost of cashier time, payment times for different payment methods were collected (see Chart 9). These differ significantly in some cases: The fastest way to settle is by smartphone or smartwatch (14 seconds on average), while card payments with authentication take the longest time on average (around 26 seconds). Cash is in between at around 19 seconds, but is faster than traditional card payments with PIN entry. Cashier times account for around 30% of total time costs across all payment methods, with no significant differences in the share between cash and card payments. For all payment methods, the larger share of costs in time required is thus attributable to upstream or downstream administrative activities.

Payment duration over total sample

Chart 9

Number of measurements in brackets



The order of costs for a payment method varies depending on perspective and is closely related to differences in payment behaviour. On average, cash is used more frequently for smaller amounts, while card payments are typically made for larger amounts. For example, the median amount of a cash payment is €26, while the median amount for card payments is around €40 (see Table 2).[21] This pattern is also evident at the 25th and 75th percentiles, as cash payments predominantly take place in lower amount ranges, while girocard, Visa and Mastercard debit and credit cards are used more frequently for higher amounts. As a result, the fixed cost components of a cash payment (e.g. cash management) are more important in relation to turnover and thus explain the high cost share of this ratio. Other studies show a similar picture: In the Bundesbank's payment behaviour study, cash accounted for 76% of sales below €5, while cash accounted for only 18% of sales between €100 and €500.[22] Conversely, 24% of small amounts were paid by card, while higher transactions between €100 and €500 saw the share of cards rise to 82%. In the regular EHI study, the average sale amount for cash payments, at €15, was significantly lower than that of card payments, such as girocard at €36 and credit cards at €33.[23]

Average sale amount of payment methods Table 2

	Cash	Girocard	Visa/ Mastercard Debit	Credit cards
25th percentile	€14.04	€23.33	€20.00	€15.38
Mean	€19.07	€79.94	€33.42	€42.61
Median	€25.71	€41.67	€40.00	€44.44
75th percentile	€50.00	€80.00	€50.00	€90.00

The reported 25th percentile, median and 75th percentile are based on company-specific average transaction values. For this purpose, the average transaction amount per payment methods was calculated for each firm; the corresponding location measures were then derived from the distribution of these firm-specific values. The reported mean values represent the average transaction amounts at the payment-method level and were calculated as the ratio of aggregated transaction turnover to the aggregated number of transactions for the respective payment methods.

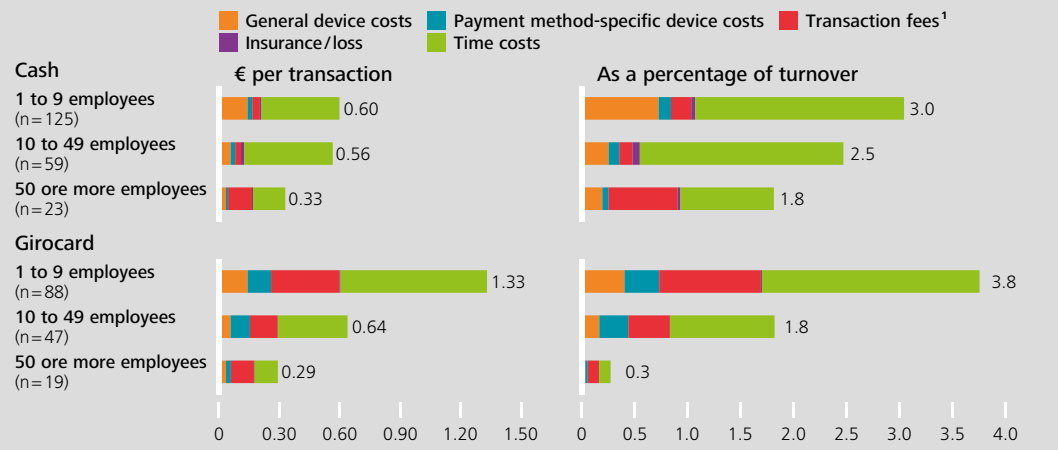
21 As individual very high transaction amounts raise the average sharply, the mean value for all payment methods is above the median.
22 See Deutsche Bundesbank (2024).
23 See EHI Retail Institute (2025).

3.4. Selected further analyses

3.4.1. Costs by firm size

The costs of payment methods differ significantly depending on firm size. Larger firms with 50 or more employees tend to have lower relative costs for settling payments – both per transaction and in relation to turnover (see Chart 10). The main reasons for this are economies of scale and efficiency: In small businesses with fewer than ten employees, the same people often take over all the steps of payment settlement in the context of and in addition to their sales activities, while larger firms can employ specialised employees. Larger firms also have larger transaction and turnover volumes, which allows them to spread their overhead costs across a larger number of payments or higher payment values. Neither Visa and Mastercard debit cards nor credit cards are included in this analysis, as the sample size was too small to allow a robust differentiation by firm size.

The costs of cash and girocard by firm size Chart 10



1 Cash: fees for supply and removal.

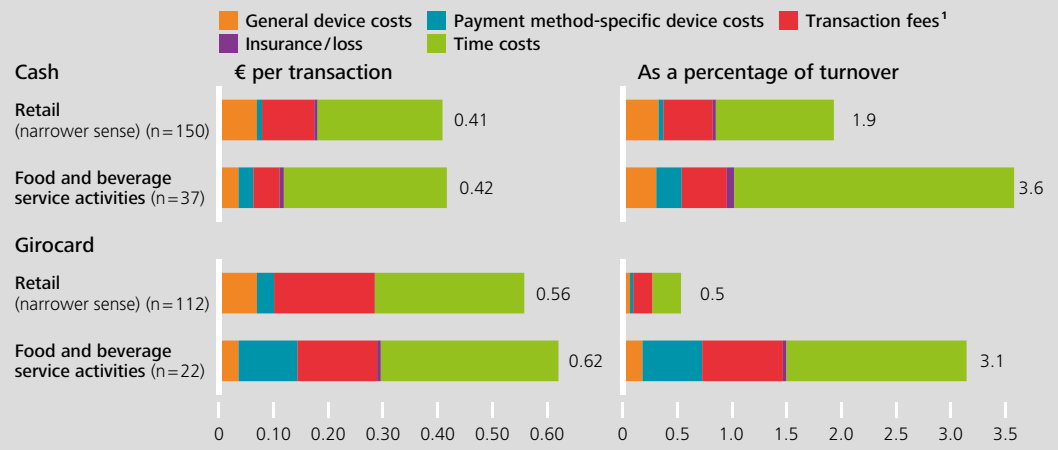
The costs of both cash and girocards fall as firm size increases, but the differences are more pronounced for girocards. In addition, while a marked decline in cash only starts at large firms, the costs of girocards decline across all the size categories considered. This is due, amongst other things, to the fact that small and medium-sized firms often manage and dispose of their cash holdings themselves, while larger firms hire specialised service providers. This reduces the time required to handle cash at large firms, while at the same time incurring higher transaction/service fees. For girocards, both time and transaction/service fees decrease as the firm size grows. Larger firms benefit from internal economies of scale, on the one hand and from better bargaining power vis-ŕ-vis payment service providers on the other, letting them negotiate less cost-intensive conditions. In the case of equipment costs, linear economies of scale affect both cash and girocard, as fixed

costs for general POS systems or terminals can be distributed across a larger number of transactions or higher payment values. Losses from theft and insurance costs occur only to a small extent overall. They are still the most pronounced among medium-sized firms in cash.

3.4.2. Costs by industry

The costs of payment methods also differ significantly by industry in some cases. In retail (narrower sense), the costs per transaction are similar to those in food and beverage service activities (see Chart 11). In terms of the share of turnover, however, costs in food and beverage service activities are significantly higher. The main reason for this is the typically lower turnover amounts per transaction in food and beverage service activities (especially for snack bars, cafés and ice cream parlours), which are reflected in all the payment methods evaluated. For example, the average sale amount per transaction in food and beverage service activities for cash payments is around €12, while it is higher in retail in the narrower sense at €21. A separate evaluation of the hairdressing and cosmetic salons category was not carried out, as the sample size in this industry was too small and did not allow robust cost evaluations. In addition, Visa and Mastercard debit cards and credit cards were again excluded, as the sample size was too small for each industry.

The costs of cash and girocard by industry Chart 11



1 Cash: fees for supply and removal.

Costs also differ by type of payment within industries. While the cost of cash per transaction is similar in retail (narrower sense) and the food and beverage service activities sector, girocard payments in retail (narrower sense) show a more favourable cost structure than in food and beverage service activities. In food and beverage service activities, payment method-specific equipment costs and time costs for girocards, in particular, have a greater impact, while general POS costs are lower than in retail (narrower sense). Seen in terms of turnover, these differences are amplified and are likely to be largely attributable

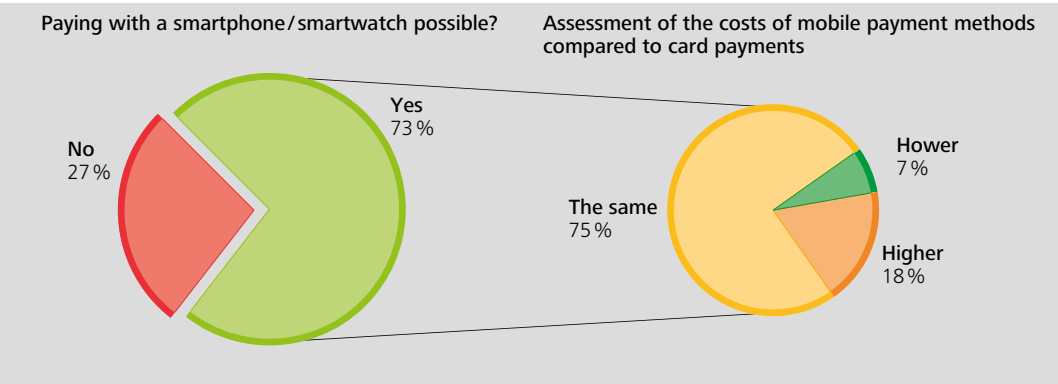
to the lower average turnover amounts per transaction in food and beverage service activities. Differences in time could be explained by longer distances and more complex processes in food and beverage service activities, but possibly also by lower levels of professionalisation. Relatedly, part of the difference between the two industries is likely to be due to the share of smaller firms in food and beverage service activities being somewhat larger than in retail (narrower sense), which is reflected in correspondingly higher average cost structures (see Section 3.4.1).

3.4.3. Costs of mobile payment methods

Mobile payment methods are now widely used in bricks-and-mortar retail stores and have become an integral payment option. In the survey, around three-quarters (73%) of card-accepting firms stated that they also accepted mobile payments (see Chart 12). According to the payment behaviour study, the market share of mobile payment methods in the bricks-and-mortar retail sector stood at 6% at the time of data collection in 2023.[24] As mobile payment methods are usually based technically on existing card infrastructures and are usually initiated via NFC at the card terminal, their cost structure largely corresponds to that of the debit or credit card stored in each case. For retailers, mobile payments are therefore usually not a separate type of cost, but merely an alternative authorisation method.

Mobile payments compared with card payments*

Chart 12



* If yes, question on the assessment of the costs: How much does an average payment using the following payment methods at your points of sale or branches cost compared with a normal card payment?

The survey results show that mobile payments are predominantly perceived as cost-equivalent to traditional card payments in practise. A large majority (75%) consider the cost of mobile payments to be the same as normal card payments (see Chart 12). 18% report additional costs, while 7% report lower costs. The shorter average payment times for mobile payments could result in lower costs. By contrast, higher costs could be attributable to the fact that mobile wallets often contain debit or credit cards from inter-

24 See Deutsche Bundesbank (2024).

national card systems, which on average incur higher fees than, for example, girocard. Those firms that expected higher costs reported on average that they were around 16% higher for mobile payments than traditional card payments. In summary, the cost results presented in Chapter 3.3 can thus also be transferred to mobile payments, with the specific cost level depending on the card type stored in each case.

4. CONCLUSION

4.1. Classification of study results

The exercise shows that cash and girocard are the most cost-effective payment methods in the German retail sector. Depending on the perspective taken, cash or girocard is most cost-efficient. In terms of costs per transaction, cash costs the least, at an average of €0.43, while relative to turnover girocard is the cheapest, at 0.8%. International debit cards (Visa/Mastercard) and credit cards cause higher costs overall. At the same time, the cost structures reveal that for cash the time costs account for a larger share, while for card schemes transaction fees play a greater role. There are significant differences between the card schemes: girocard has the lowest average transaction fees, followed by Visa/Mastercard debit cards, with credit cards bringing up the rear. Overall, the results illustrate that the cost level depends on both the perspective taken and firm-specific factors.

Patterns are similar to those observed in the Bundesbank study from 2019. The cost level has generally increased in absolute terms, with both cash and girocard seeing the average costs per transaction rising by around 80% since the last study. One major driver is likely to be the general cost increases caused by wage and price developments. In the case of cash, the decline in the share of transactions will have strengthened this effect as well, given that fixed costs are spread across a smaller number of payments. Another factor is the overall decline in the cash infrastructure, which is forcing smaller firms to spend more time on and, in some cases, also pay higher fees for cash transactions. For girocard, the increase in costs per transaction has come about because smaller merchants, in particular, have begun to accept card payments in recent years and are paying higher transaction fees compared with larger merchants. As a result, the average value has increased even though girocard's prevalence has risen. Viewed in per-transaction terms, the costs of credit card payments are roughly as high as they were in 2019 (at around €1 per transaction), but relative to turnover they have increased as well. Visa and Mastercard debit cards are new in this year's study, and rank between girocard and credit cards in terms of their costs. Lastly, a number of differences compared with 2019 may also be due to the methodology used – while the 2019 study was built upon a smaller number of expert interviews, the current one uses a broad questionnaire-based approach. So while the findings are comparable overall, these methodological differences should be borne in mind when interpreting the results.

The results are broadly consistent with findings from other studies on the costs of payment methods in the German market. The study by Ibi Research (2025) likewise found that cash and girocard are cost-efficient options from a retail perspective, while Visa and Mastercard debit cards are twice as costly as girocard. Compared with the current survey, Ibi Research identified deviations in the costs of cash, putting the number at 0.46% of turnover. Amongst other things, this could be because the average basket of

goods for cash payments that was used as the basis for the Ibi study was higher in price. In addition, the time costs in the Ibi study were calculated using the minimum wage, while the present study takes firms' actual hourly wages into account. Furthermore, the sample of firms observed to calculate the cash-related costs in the Ibi study was significantly smaller. For card payments, the results are broadly identical: The relations between girocard and Visa/Mastercard debit cards are similar in both surveys, with girocard offering a significant cost advantage over Visa and Mastercard debit cards. However, the total costs calculated in the Bundesbank survey are higher overall, mainly on account of the broader approach used to record costs. A comparison with the regular EHI survey reveals much the same picture: The average transaction fees identified there for girocard payments are close to the values calculated in this study, and there is likewise a significant size degression with higher transaction fees on average for smaller firms.[25]

25 See EHI Retail Institute (2025).

4.2. Outlook

Secure, efficient and cost-effective payment methods are a key element of the economic cycle. They are as indispensable for merchants, food and beverage service activities and other firms as they are for consumers. The present cost analysis can provide a starting point for an even more comprehensive future assessment of the role played by individual payment methods in the German retail sector and for further discussion in light of both macroeconomic and European objectives. This study's findings show that international card schemes (especially Visa/Mastercard) are more costly for the retail sector compared with cash and girocard. At the same time, these schemes are seeing more frequent use by consumers in Europe. At present, around 60% of card payments in the euro area are based on non-European systems.[26]26 Given the high prevalence of international card schemes, however, it is not just a matter of the economic implications, but also a question of the effects on national and European sovereignty in the payments space. In many European countries, card payments are routed exclusively through the systems of international card providers. Some countries have a national card system as well, like Germany's girocard,[27] which prevents excessive reliance on non-European providers. At the same time, however, there is a lack of European alternatives for settling pan-European payments.

Competition in the market for payment methods as well as European alternatives based, for example, on instant credit transfers could play a significant role in lowering the costs for merchants. For this reason, the Bundesbank has teamed up with the European Central Bank and the other Eurosystem central banks as part of the Eurosystem Retail Payments Strategy to advocate the establishment of European payment methods, greater competition in the payments space, and the further dissemination of instant payments.[28] SEPA instant credit transfers offering payment settlement within the space of seconds are a powerful piece of European infrastructure that can also serve as a platform for quick and cost-effective payments in the retail sector. Payment methods based on instant credit transfers have already become a mainstay in other European countries, such as Spain. Furthermore, market initiatives are already under way to promote payment methods based on instant credit transfers that can ideally be used across Europe and also at the point of sale. One example of this is the Wero payment app provided by the European Payments Initiative, which is also backed by German banks and payment service providers. In addition, the planned digital euro is likely to boost competition, sovereignty and resilience in European payments, besides offering an attractive alternative for the retail sector in particular. European legislators, too, play an important role in the cost structures of payment transactions, for example because they regulate interchange fees by means

26 European Central Bank (2025).
27 In the euro area, Germany, Italy, France and Portugal have a national card system of their own.
28 European Central Bank (2024a).

of the Regulation on interchange fees for card-based payment transactions. Moreover, there are discussions, for example as part of the revision of the second Payment Services Directive (PSD2), on how legislation can further boost transparency surrounding fee structures for card payments. In this context, the ban on surcharging under PSD2 – a step aimed at increasing price transparency and competition – has come in for repeated criticism among merchants because it constrains their scope to vary the prices they charge consumers for differently priced payment methods.

The cash infrastructure should be kept in place even if usage falls. Despite the ongoing decline in cash use, cash remains a cost-effective and dependable payment method for many merchants. Cash is indispensable for many consumers, too: Around 75% of the German population reported in 2023 that they wanted to be able to use cash to the same extent as hitherto or more strongly again in the future.[29] This response would suggest that cash fulfils not just an important economic function, but also a social function. For things to remain that way, it is necessary to ensure the continued acceptance of cash in the retail sector as well as a functioning cash infrastructure. This includes having reliable cash points nearby, such as bank branches and ATMs, where cash can be obtained and deposited at low cost. Both of these are highly important for merchants and consumers because they are the only way to ensure an efficient and safe use of cash. Bearing this in mind, it remains a key task to keep the cash cycles stable. This matters not just for cost and supply efficiency in the retail sector, but also for preserving freedom of choice, resilience and participation in society in European payments.

29 Deutsche Bundesbank (2025).

List of references

Banca d'Italia (2020). Il costo sociale degli strumenti di pagamento in Italia. Tematiche Istituzionali.

Banco de Portugal (2019). Custos sociais dos Instrumentos de pagamento de retalho em Portugal.

Brits, H. and Winder, C. (2005). Payments are no free lunch. Occasional Studies Vol. 3/No 2. De Nederlandsche Bank.

Cabinakova, J., Horst, F. and Knümann, F. (2019). The costs of cash payments in the retail sector. Deutsche Bundesbank

Danish Payments Council (2018). The costs of consumer-to-business payments have decreased significantly. Series: Costs of Payments in Denmark 2016. Danmarks Nationalbank.

Deutsche Bundesbank (2025). Current opinions on the role of cash in German society. Monthly Report, April 2025.

Deutsche Bundesbank (2024). Payment behaviour in Germany.

Deutsche Bundesbank (2023). Schnelles Bezahlen mit Bargeld und kontaktlosen EHI Retail Institute (2025). Zahlungssysteme im Einzelhandel 2025 – Daten, Fakten, Marktstrukturen.

EHI Retail Institute (2024). Online-Payment 2024 – Zahlungsarten im E-Commerce, Strategien, Herausforderungen und Perspektiven.

European Commission (2010). Commission Recommendation of 22 March 2010 on the scope and effects of legal tender of euro banknotes and coins (2010/191/EU). Official Journal of the European Union L 83.

European Parliament and Council of the European Union (2015). Regulation (EU) 2015/751 of 29 April 2015 on interchange fees for card-based payment transactions. Official Journal of the European Union L 123.

European Central Bank (2025). Report on card schemes and processors.

European Central Bank (2024a). The Eurosystem's retail payments strategy – priorities for 2024 and beyond.

European Central Bank (2024b). Use of cash by companies in the euro area in 2024.

Federal Government (2025). CDU, CSU und SPD.

Federal Statistical Office (2024). Statistical report. VAT statistics (preliminary returns). Reporting period 2022. Datasheet 73311-03.

Felt, M.-H., Hayashi, F., Stavins, J. and Welte, A. (2020). Distributional Effects of Payment Card Pricing and Merchant Cost Pass-through in the United States and Canada. Research Working Papers. Federal Reserve Bank of Kansas City.

Ibi Research (2025). Gesamtkosten von Bezahlverfahren 2025: Eine empirische Erhebung.

Junius, K., Devigne, L., Honkkila, J., Jonker, N., Kajdi, L., Kimmerl, J., Korella, L., Matos, R., Menzl, N. Przenajkowska, K., Reijerink, J., Rocco, G. and Rusu, C. (2022). Costs of retail payments – an overview of recent national studies in Europe. Occasional Paper Series No 294. European Central Bank.

Kosse, A., Chen, H., Felt, M.-H., Dongmo, J., Nield, K. and Welte, A. (2017). The Costs of Point-of-Sale Payments in Canada. Staff Discussion Paper 2017-4. Bank of Canada.

Krüger, M. and Seitz, F., (2014). Costs and benefits of cash and cashless payment instruments: Overview and initial estimates. Deutsche Bundesbank.

Norges Bank (2022). Costs in the Norwegian payment system 2020. Papers No 3/2022. Norges Bank.

Norges Bank (2014). Costs in the Norwegian payment system. Papers No 5/2014. Norges Bank.

Przenajkowska, K., Polasik, M., Maciejewski, K. and Koźliński, T. (2019). Costs of payment instruments on the Polish market. Narodowy Bank Polski.

Przenajkowska, K., Polasik, M., Kotkowski, R. and Krawczyk, W. (2020). Costs of payment instruments on the Polish market broken down into fixed costs and variable costs. Narodowy Bank Polski.

Schmiedel, H., Kostova, G. and Ruttenberg, W. (2012). The social and private costs of retail payment instruments – a European perspective. Occasional Paper Series No 137. European Central Bank.

Stewart, C., Chan, I., Ossolinski, C., Halperin, D. and Ryan, P. (2014). The Evolution of Payment Costs in Australia. Research Discussion Paper 2014-14. Reserve Bank of Australia.

Trütsch, T., Huber, J. and Bralovic, N. (2024). The costs of point-of-sale payments in Switzerland. University of St. Gallen.

van Marwijk, M., de Ruiter, M. and van der Zeijden, P. (2021). Kosten van het toonbankbetalingsverkeer in 2020. Dutch Payments Association.

van Marwijk, M., de Ruiter, M. and van der Zeijden, P. (2018). Kosten van het toonbankbetalingsverkeer in 2017. Dutch Payments Association.

Methodological annex

To survey the costs merchants in Germany to use payment methods, the market research institute Forsa – acting on behalf of the Deutsche Bundesbank – collected data in two main ways: by taking time measurements of transactions at selected points of sale and by running a survey of merchants. The time measurements made it possible to quantify the average amount of time needed for payments at the point of sale – in other words, the quantity of working time directly associated with the payment process. This factor is particularly relevant because staff expenses can account for a substantial proportion of the total costs of payments in the retail sector. The survey of merchants, meanwhile, aimed to record the remaining cost categories – including equipment costs, fees, administrative costs as well as losses resulting from theft and insurance costs. By combining time measurements and survey insights, it was possible to compute the total costs per payment method both per transaction and relative to turnover, thus laying key groundwork to assess the efficiency of individual payment methods.

The time measurements were carried out from 8 to 13 August 2022, with around 13,000 transactions being recorded at 15 points of sale. Measurements were taken of the time needed for a payment transaction, starting when the cashier at the point of sale states the purchase price and ending when the cashier hands over a receipt or closes the till. In addition to the payment method, other information on the transaction was documented as well, including the customer's age and gender (estimated by the person recording the transaction) as well as circumstances or particular factors surrounding the payment that could delay the transaction, such as faults with a card payment (e.g. PIN incorrect, payment card not readable), the cashier not having the right change, the customer asking to withdraw cash (as part of the purchase), the cashier checking a banknote for authenticity (using a testing device, say), the payment transaction being interrupted because of a customer or discount card, the customer having the right money, the customer or cashier being distracted (e.g. by a conversation), the transaction being delayed because the goods were packed, money only being paid out (return of goods, receipt for a return of empties or a cash withdrawal without a purchase), the cashier recording the customer's post code, the customer searching for coins, fuel vouchers being issued, fault with a smartwatch payment (not readable). The main measurements took place in three German cities. Five points of sale were included in each city. The survey covered different days of the week and times of day to capture typical shopping and payment behaviour patterns – such as in the morning before the start of work, during core opening hours or in the evening after work. It also recorded different customer groups – for example, younger people using mobile payment methods or older people paying in cash. Measurements covered the entire business week from Monday to Saturday during normal retail opening hours.

The survey of merchants to record how much it costs them to accept payment methods was carried out between 14 August and 15 December 2023. Besides traditional retail firms (in the narrower sense), the survey also included food and beverage services establishments as well as hairdressing and beauty treatment salons. This approach aimed to capture the retail sector just as it was defined as the population of the analysis in Chapter 2.1. The surveyed firms varied greatly in terms of size categories, ranging from small firms with fewer than ten employees to large retail chains with more than 2,500 employees. The survey captured both the costs that generally arise in connection with payments (general equipment costs, staff expenses) and payment method-specific costs.

The survey used quota sampling to select the firms to be surveyed so as to guarantee the broadest possible coverage of different retail areas and firm sizes. Quotas were based on the following characteristics: industry (retail trade in the narrower sense, food and beverage service activities, hairdressing/beauty treatment salons) and firm size (small firms < 10 employees; medium-sized firms 10-49 employees; large firms ≥ 50 employees). Compared with the population in the commercial register, a disproportionately high number of larger firms were targeted in order to allow robust findings to be calculated for this group of firms as well. Differences between the sample and the population were later offset by applying a weighting.

Firms were recruited by telephone. The first step was to collect key structural features (e.g. industry, point of sale type, number of branches, number of employees, annual turnover) and get the firms to agree to take part. Once the firms' consent had been obtained, they were sent a link to the online questionnaire. As a supplementary measure, firms were invited to participate via the German Retail Federation (HDE) as well. To this end, Forsa sent a mail with a personalised registration link through which interested firms could register. The link to the questionnaire was then automatically sent by email.

A total of 500 questionnaires were completed, but because the complex questionnaire was not always completed in full, it was not possible to account for all the observations in every area. For example, only 268 usable firm datasets were available for the cost calculation because around half had to be excluded during data cleansing, mainly because the entries were incomplete. Some of the firms reported that they were unable to provide granular information on their fee structures for card payments, especially because fees were invoiced based on package prices/fixed prices, not broken down by card type. An observation point was generally considered to be incomplete if not all the data needed to calculate the costs for an accepted payment method were available. One exception was the labour costs. Any data missing in this category were replaced by the industry average on account of their low dispersion. In addition, datasets were excluded in cases where a payment method was used for fewer than 50 transactions per year, so as to prevent distortions caused by atypical use patterns. In this context, certain payment

methods for which the number of observations was very small – such as the electronic direct debit scheme – were excluded from the analysis as well. Originally, online retailers were also included in the survey. However, the number of cases in this area was too small, so the assessment of this area was abandoned. As a result, the analysis relates exclusively to bricks-and-mortar retailers.

The data collected in the survey were used to calculate what each payment method costs. This was done by adding together the cost components for each payment method. These comprise the following: 1) equipment costs, comprising both general costs and payment method-specific costs; 2) fee and service costs; 3) time costs for administration and point of sale; and 4) insurance costs and losses resulting from theft. While equipment costs, fees and the cost of insurance or losses are immediately available as monetary amounts, time costs were initially recorded in a non-monetary form. It was given a value by multiplying the measured times by the average hourly wages of administrative staff and cashiers at the point of sale. This way, it was possible to convert non-monetary components into monetary equivalents. After all the cost components had been recorded and assessed, the total costs were calculated.

Two ratios were formed to compare the payment methods: costs per transaction and costs relative to turnover. The first ratio allows payment methods to be analysed in a uniform manner, regardless of how often they are used. The second ratio, meanwhile – costs relative to turnover – expresses total costs in relation to the payment volume. The latter shows what percentage of turnover is absorbed by costs, thus making it a particularly important metric for assessing the profitability of a payment method from a corporate perspective. These two ratios therefore highlight different aspects of cost efficiency and, when viewed in parallel, deliver a comprehensive picture of profitability.

To calculate the total costs per payment method, for each payment method the sum of the weighted costs of all firms was divided by the sum of the weighted number of transactions or the weighted turnover of all firms. The costs were also analysed separately by firm size and industry, but separate results were not reported if the number of observations was too small. By combining these assessment methods, it is possible to perform a comprehensive analysis that takes into account both the general cost efficiency of individual payment methods as well as industry-specific and size-dependent differences.