Access to cash in Germany – results of a representative public survey

For the German public to be able to use cash, there needs to be a nationwide and cost-effective network of cash dispensers. At the end of 2021, the Bundesbank investigated the state of this coverage as part of a representative public survey. The analysis considers three questions. What is the outlay in terms of monetary cost, time and effort involved in withdrawing cash from an automated teller machine (ATM)? Does provision fall short when it comes to people from rural areas or vulnerable groups? And what is the relationship between the individual outlay associated with withdrawing cash and the use of cash as a means of payment? This provides insights into whether people in Germany are able to pay by cash or cashless means of payment according to their preferences or whether their choice is indirectly impaired by a lack of options for making cash withdrawals.

The empirical analysis shows that, at present, it is very easy for the German population to access cash. Overall, 94% of respondents say they need to exert little or very little effort to get to an ATM. The average time required per withdrawal is approximately nine minutes. Vulnerable groups report needing somewhat longer. However, they, too, consider the effort involved to be low. There is no evidence that rural areas specifically are undersupplied with cash.

A regression analysis does not reveal any statistically significant relationship between the individual outlay for withdrawing cash and payment behaviour. ATM coverage therefore appears to be good enough to allow consumers to pay in cash as and when they wish. In a hypothetical context, however, many respondents state that they would be increasingly inclined to move away from cash if provision were to deteriorate significantly. There would then be the danger of a downward spiral of reduced cash infrastructure and falling cash usage. Lower cash use entails rising cost pressures for private sector players in the cash cycle, such as cash-in-transit (CIT) companies and commercial banks. This could cause the existing cash infrastructure to be scaled back in the medium or long term, which in turn would adversely affect cash usage.

Introduction

Cash has advantages for the individual …

Changing preferences and new developments in the payments space mean that more and more purchases are being paid for by card or smartphone instead of in cash. This trend was amplified by the COVID-19 pandemic. Nevertheless, cash remains a highly popular means of payment. According to a representative Bundesbank survey, 58% (2017: 74%) of day-to-day payments are still made using cash. The general public like that cash protects privacy, provides a clear overview of spending and means you can rely on the fact that the payment transaction has been properly settled.[1]

… and is of social importance

Of at least equal importance with the benefits of cash for the individual is its meaning for society as a whole. As the only physical payment instrument, cash can be used without intermediaries. This means that it remains largely usable even in the event of local power outages or problems with technical infrastructure and it constitutes an important component of crisis preparedness. It should also be borne in mind that some population groups – especially children – are not easily able to utilise cashless means of payment and are reliant on cash.[2]

Nationwide and cost-effective provision are key to unrestricted cash use

This is why the Bundesbank and the Eurosystem as a whole advocate for freedom of choice between cash and cashless means of payment. The idea is for citizens to be able to decide for themselves whether to pay in cash or use a cashless option. For that to work, there needs to be an unrestricted and cost-effective supply of cash because – unlike in the case of cashless means of payment – cash is "used up" when a payment is made; the consumer always has to source fresh cash for the next time.[3]

Downward spiral: falling demand for cash can lead to erosion of cash infrastructure, and vice versa

The inherent risk of a cost-driven downward spiral makes it all the more important to maintain a good cash infrastructure. Alongside the Bundesbank, the business of supplying cash also involves commercial banks and CIT companies, and those stakeholders are subject to economic cost pressures. The provision of cash is fixed-cost intensive, meaning that when cash use goes down, unit costs go up – as happened recently during the COVID-19 pandemic. This cost pressure could lead to a reduction in the cash infrastructure in place in the future. ATMs that are less frequently used could be taken out of operation as a result, for example. This could be the start of a downward spiral whereby a poorer supply of cash leads to lower use of cash, and vice versa. Those members of the public who wish to carry on using cash or who are reliant on it would be the first to bear the brunt of this. But since cash – as a physical means of payment – also constitutes an important component of crisis preparedness, risks for the security of society as a whole may ensue.[4]

Eurosystem uses geographical indicators to monitor developments in cash infrastructure

With this in mind, the Eurosystem keeps a constant eye on developments with regard to the cash infrastructure and, in particular, the availability of ATMs. There are currently around 55,000 ATMs in Germany, which equates to roughly 70 ATMs per 100,000 inhabitants.[5] That figure has remained broadly stable over the past ten years. This places Germany in the top quarter of European countries, fundamentally indicating a good state of provision. Alongside the number of ATMs, another factor that is of at least equal importance is how those machines are distributed. They should be present wherever they are needed and be available even in sparsely populated regions. One good way of measuring the extent to which this requirement is met is to look at the distance between the place of residence and the nearest ATM. According to the ECB, in most

1 For detailed information on current payment behaviour in Germany and what happened during the COVID-19 pandemic, see Deutsche Bundesbank (2022a).
2 See https://www.ecb.europa.eu/euro/cash_strategy/cash_role/html/index.en.html
3 See https://www.ecb.europa.eu/euro/cash_strategy/html/index.en.html
4 For example, the Federal Office of Civil Protection and Disaster Assistance recommends that the public keep a sufficient reserve of cash at home in case of a power outage. See https://www.bbk.bund.de/EN/Prepare-for-disasters/Recommendations/Electric-power-breakdown/electric-power-breakdown_node.html
5 See Deutsche Bundesbank (2022b).

euro area countries, 95% of the population live no more than five kilometres from their nearest ATM, as the crow flies.[6]

Survey data show actual outlay involved in withdrawing cash …

This article fleshes out these geographical analyses for the euro area with findings from a public survey carried out in Germany. Using data from the Bundesbank's 2021 payment behaviour study, the analysis explores three questions. First, what is the outlay (in terms of time, monetary cost and effort) of withdrawing cash from an ATM? Second, does provision fall short with respect to people from rural areas or vulnerable groups – in other words, people who might be disadvantaged, for example, because of their social status? And, third, what is the relationship between the individual outlay associated with withdrawing cash and the use of cash as a means of payment?

… and whether freedom to choose between cash and cashless means of payment could be impaired

The results can be used to ascertain how well the population in Germany is actually supplied with cash. They also enable inferences to be made as to whether citizens are able to freely choose between cash and cashless means of payment when making payments or whether proximity to the nearest ATM sometimes makes that decision for them.

Data basis: the Bundesbank's 2021 payment behaviour study

Study series on payment behaviour in Germany

The following analysis is built on data from the "Payment behaviour in Germany" survey. These are studies undertaken by the Bundesbank every two to three years to examine how consumers in Germany pay and to find out what views and opinions exist as far as cash and other means of payment are concerned.[7] The data are representative of the German-speaking population aged 18 and over. The survey period for 2021 ran from 8 September to 5 December. During this time, a total of 5,870 people were randomly selected and interviewed by telephone. In addition, 4,197 of these respondents completed a diary in which they recorded three days' worth of purchases together with the payment method that they used.

Cash has been used less frequently since COVID-19 pandemic, but is still popular

The survey shows that cash is currently the most widely used means of payment in Germany, even if its use has declined sharply as a result of the COVID-19 pandemic. 58% of all day-to-day payments are settled in cash, which corresponds to 30% of expenditure in terms of value. In the 2017 survey, these shares stood at 74% and 48%, respectively. The move towards internet shopping and many retailers asking customers during the pandemic to refrain from paying in cash are the main reasons for this decline. Nonetheless, 69% of respondents consider it important to be able to continue using cash in the future.[8]

Survey contains information about payment and cash withdrawal behaviour

This study drew on a sub-sample of 2,487 people who were asked additional questions about cash withdrawals in the telephone interviews. Information about the amount and frequency of withdrawals as well as the outlay involved is available for these respondents. Together with the records from the payment diaries, this provides a detailed overview of how people in Germany obtain cash and use it to make payments.

Cash access points in Germany

Consumers in Germany can obtain cash at ATMs, bank counters and points of sale

People who want to withdraw cash in Germany can choose from various options: ATMs, bank counters, and points of sale at retailers that offer cash withdrawals as part of a purchase or via a cash service provider ("cashback" or "cash-in-shop").

6 For an overview of the current state of provision in the Eurosystem, see, for example, European Central Bank (2022), Stix (2020), Banco de España (2021) and Banque de France (2021).
7 For more information on the "Payment behaviour in Germany" study series, see https://www.bundesbank.de/en/publications/reports/studies/payment-behaviour-in-germany-738024
8 See Deutsche Bundesbank (2022a).

ATMs the most frequently used source for obtaining cash …

The table on this page outlines the relevance of the various withdrawal sources in Germany; the top section shows general usage while the bottom section focuses on intensity of use. 96% of respondents use ATMs for cash withdrawals, making 81% of their withdrawals there on average. These percentages have hardly changed since the last survey in 2017. This means that ATMs are still by far the most important source for withdrawing cash. By contrast, only 20% (2017: 38%) of respondents now go to a bank counter, where they withdraw on average 11% of the cash they need (2017: 14%). Withdrawals at the point of sale, on the other hand, have become more significant in recent years, with one in three people now making use of this service. Overall, respondents withdraw on average 8% of their cash this way.

… and especially important from a logistical point of view

Although a growing number of retailers now allow customers to make withdrawals at the point of sale, this type of cash supply is more of a complementary solution than a fully-fledged alternative to bank-operated ATMs. Withdrawal at the point of sale usually requires the customer to purchase goods at the shop offering the service and is only possible during the shop's opening hours.[9] Moreover, the cash is not checked for authenticity by machine before it is paid out. Lastly, withdrawals at the point of sale are only available if the till contains cash withdrawn from ATMs or bank counters by customers making cash payments over and above the amount the cashiers need to make change. This article therefore focuses in particular detail on access to the bank-based cash infrastructure, i.e. ATMs and bank counters. These cover most of the everyday need for cash and guarantee that cash can be supplied even if retailers experience technical disruptions or in the event of a crisis (see also the box on pp. 59 f.).

Importance of different withdrawal sources*

%

Item	2017	2021
Share of users		
ATM	95	96
Bank counter	38	20
Point of sale	23	34
Average share of annual total withdrawals		
ATM	84	81
Bank counter	14	11
Point of sale	2	8

* Data based on the Bundesbank's 2017 and 2021 payment behaviour studies.
Deutsche Bundesbank

Outlay involved in withdrawing cash from ATMs and bank counters

Outlay involved in obtaining cash has multiple components

How well can the general public access cash? To capture the outlay involved in making withdrawals from ATMs or bank counters, respondents were asked first to describe their usual route there and then to assess the effort required. This may depend, for example, on how long the journey is, what means of transport is used, whether the withdrawal can be combined with other errands and whether fees are charged for the withdrawal.

Most people combine withdrawing cash with other activities

The first aspect – the situations in which respondents withdraw cash and the means of transport they use when doing so – are summarised in the table on p. 61. Most people combine cash withdrawals with going shopping (47%) or to work (17%), meaning that the outlay is less of a factor. Only 15% leave home solely to get cash out. In total, when withdrawing cash, 58% of respondents travel by car, 21% on foot, 12% by bicycle and 8% by public transport. The most common scenario involves withdrawing cash while going shopping by car.[10]

How much time does it take respondents to withdraw cash from an ATM or a bank coun-

9 Cash-in-shop withdrawals do not require any goods to be purchased. However, the person making the withdrawal has to sign an agreement with a cash service provider.
10 As these questions were only asked in the 2021 survey, a comparison cannot be made with previous years.

Increased demand for cash due to card reader disruptions

From the second half of May 2022, Germany experienced frequent disruptions to retail card payments due to a software error affecting a certain type of card payment terminal which is used by many large retail chains. The EHI Retail Institute estimates that around 10% of all terminals in Germany's retail sector were affected by the disruptions.[1] Until the problems were resolved, only cash payments were accepted at the businesses affected.

At the same time, the Bundesbank branches registered unusually large deposits and withdrawals of cash, indicating its increased use in the retail sector. In August, the Bundesbank conducted a public survey in order to shed more light on the causes of the increase in cash turnover and the effects of the disruptions. In the Bundesbank Online Panel – Households (BOP-HH), a representative monthly online survey of several thousand people, respondents reported the extent to which they were affected by the disruptions and what consequences this had for their personal behaviour.

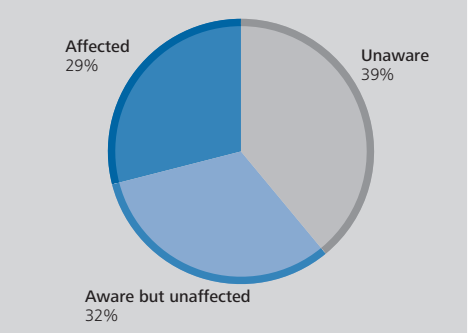
As shown in the adjacent chart, 29% of respondents were personally affected by the disruptions. Moreover, 32% were not affected but had heard about them, whereas 39% were wholly unaware of the problems.

What did the disruption mean for respondents' shopping? Of those affected, 62% had enough cash on them and were able to continue shopping without any problems (see the upper chart on p. 60). People who had insufficient cash bought less (13%), stopped shopping in order to get cash (15%), or stopped shopping altogether so they could pay by card later or elsewhere (11%).

The results show that the majority of those affected were able to continue shopping unhindered because they had sufficient cash in reserve. According to the Bundesbank's payment behaviour study, people in Germany carry an average of €100 in cash – a fairly high transaction balance compared with other European countries, which actually proved useful when the disruption occurred.[2]

What did consumers do as a consequence of the incidents, and do they carry more cash on them to be safe? Looking at the group of people who had heard about the disruptions and/or were affected by them, 18% reported carrying more cash in reserve, at least for a short period of time. While 11% always carry more cash, 71% have not made any change to their cash re-

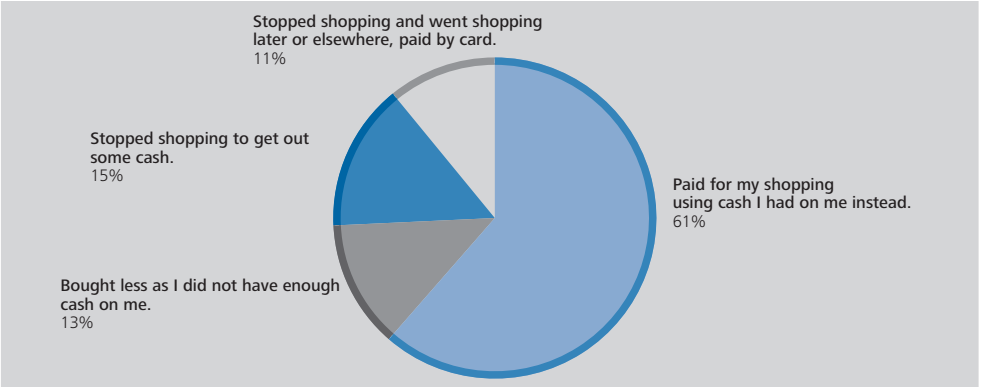
Disruption to card terminals*



Source: Bundesbank Online Panel – Households (BOP-HH). Basis: all 8,996 respondents. * Questions: Were you aware of these disruptions? Were you affected by the disruptions when shopping?
Deutsche Bundesbank

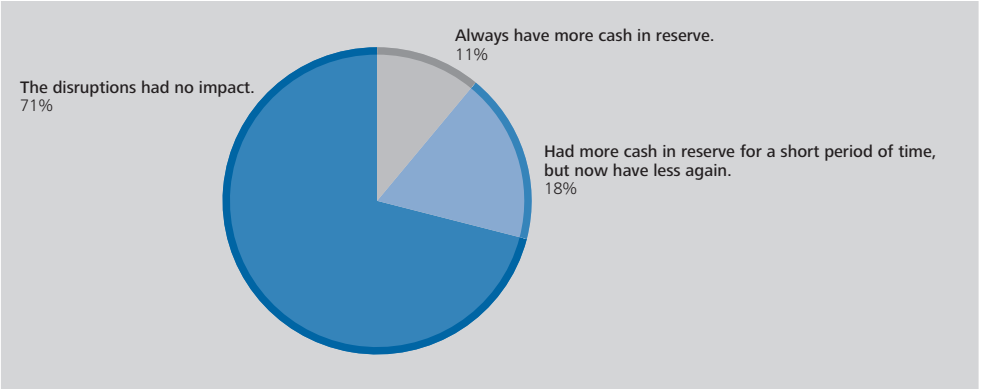
1 See the "Handelsblatt" article: https://www.handelsblatt.com/unternehmen/handel-konsumgueter/stoerung-bei-bezahlterminals-finanzaufsicht-untersucht-probleme-bei-kartenzahlungen-/28383042.html
2 See Deutsche Bundesbank (2022a) and European Central Bank (2020).

Impact of the card terminal disruption on shopping*



Source: Bundesbank Online Panel – Households (BOP-HH). Basis: 2,647 respondents who were affected by the disruptions to card terminals. * Question: How did the disruptions affect your shopping?
Deutsche Bundesbank

Impact of the card terminal disruption on cash reserves*



Source: Bundesbank Online Panel – Households (BOP-HH). Basis: 5,306 respondents who were aware of the disruptions to card terminals. * Question: Broadly speaking, how have the disruptions to card readers affected the way you use money?
Deutsche Bundesbank

serves because of the disruptions (see the lower chart on this page).

The analysis confirms increased demand for cash in connection with the disruptions to card terminals in Germany. Around 75% of those affected made their purchases in cash instead of using a card as planned. This underscores the importance of a nationwide, bank-operated cash infrastructure in the event of crisis or disruption. Without Germany's broad network of ATMs and bank branches, retailers and consumers would potentially have faced much greater problems.

Three-quarters of respondents need no more than ten minutes to withdraw cash from an ATM or bank counter

ter? Respondents were asked how much time the round trip or the detour took them, and how long it took to make the withdrawal itself. The chart below shows the average time taken and its distribution. On average, it takes respondents nine minutes to get cash. 55% of respondents need no more than five minutes, and 75% no longer than ten minutes. Only 1% need three-quarters of an hour or more.[11]

Withdrawal fees are only rarely charged

Besides involving a logistical effort, withdrawals can be subject to fees. The top chart on p. 62 shows how often respondents have to pay charges when withdrawing cash. Overall, 82% of respondents report never or only rarely having to pay fees, while a total of 9% say they are charged fees more frequently and as many as 5% pay a fee for every withdrawal.[12]

Satisfaction with access to ATMs is high

The statistics presented so far suggest that the time and monetary outlay involved in withdrawing cash from ATMs or bank counters in Germany is low. But how do the respondents themselves assess their outlay? 94% say it is very or fairly easy to get to an ATM or bank counter (see the bottom chart on p. 62), while only 6% find it fairly or very difficult. In a survey conducted by the ECB in 2019 for the euro area as a whole, 9% of respondents reported that it was very difficult to access cash.[13] The outlay in Germany, then, appears to be lower than the European average.

How people get to an ATM or bank counter*

%

Route	Means of transport				Total
	Walking	Bicycle	Car/ motorbike	Public transport	
Shopping for day-to-day retail purchases	9	5	30	3	47
Journey to work	2	2	11	2	17
Shopping/ eating out/ going into town	2	1	3	1	8
Journey to the petrol station	0	0	1	0	1
Other business	3	2	6	1	12
Separate journey from home	7	2	6	1	15
Total	21	12	58	8	100

* Data based on the Bundesbank's 2021 payment behaviour study. Question: With which business do you combine the journey to an ATM/bank counter most frequently and which means of transport do you generally use?

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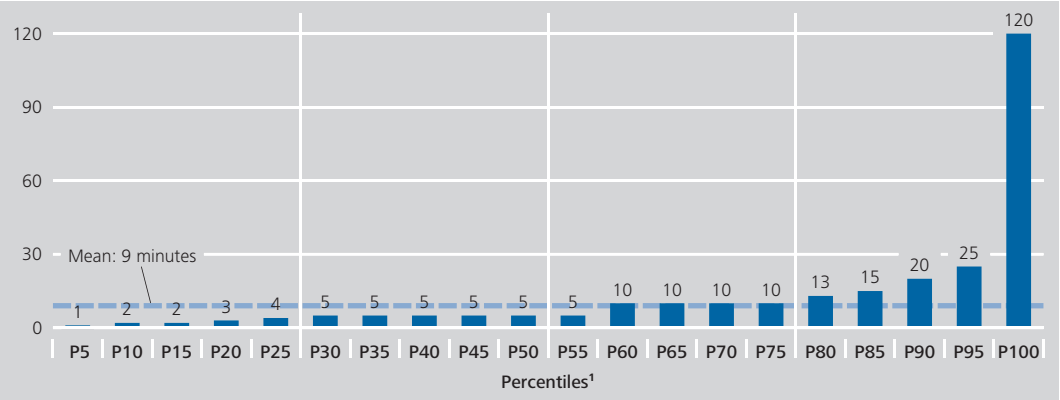
11 See footnote 10.
12 See footnote 10 on p. 58.
13 See European Central Bank (2020).

Time required to get cash at an ATM*

Minutes



* Data based on the Bundesbank's 2021 payment behaviour study. Question: How long do you need in total for the detour to the ATM or bank counter as well as for the withdrawal itself? **1** For example, in the case of the 75th percentile (P75), 75% of respondents need a maximum time of 10 minutes to get cash at an ATM.

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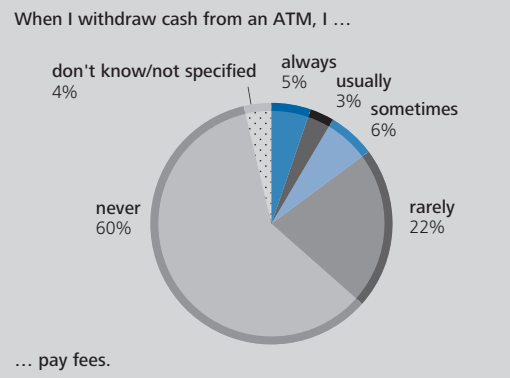
Withdrawal fees*



* Data based on the Bundesbank's 2021 payment behaviour study. Question: Assume you want to withdraw cash from an ATM with your girocard (previously EC card) or other debit card. Which of the following statements applies to you?

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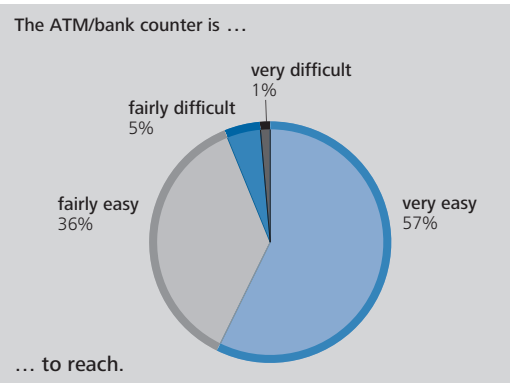
Ease of accees to cash withdrawals*



* Data based on the Bundesbank's 2021 payment behaviour study. Question: When you want to withdraw cash from an ATM or the bank, how easy or difficult do you usually find it to get there?

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Vulnerable people need longer to withdraw cash, but are equally satisfied

What is the provision of cash like for vulnerable groups of people in particular, i.e. people who might be socially disadvantaged owing to their health or social status? In the following, respondents' age and employment status are used as indicators to assign them to this group. A comparison shows that people over the age of 65, those who are unemployed and people unfit for work take on average 3.8 minutes longer to withdraw cash from ATMs than other people. Nevertheless, they consider the outlay involved to be similarly low. This could be because of a certain type of habituation effect as they may also be accustomed to facing challenges in other areas of their lives. By contrast, they are charged fees somewhat less often, possibly because they make more specific efforts to avoid them and instead accept that they may have to make a longer journey to withdraw cash.

People in rural regions are well supplied with cash, but are reliant on their cars

A comparison of the urban and rural population shows that it takes people living in rural regions roughly the same amount of time to withdraw cash from ATMs as people who live in a town or city. They, too, consider the outlay involved to be low. There is thus no evidence that rural areas specifically are undersupplied with cash.[14] It is worth noting, however, that people in rural regions are more likely to travel by car when withdrawing cash, mostly in connection with other activities. As a result of poorer local amenities and transport infrastructure, people in rural regions have higher mobility costs overall. However, the additional outlay involved in withdrawing cash does not appear to be a factor in this.

The relationship between the outlay involved in obtaining cash and withdrawal and payment behaviour

Hypotheses from the economic model

Findings collected from the interviews show that, on the whole, the outlay involved in withdrawing cash from ATMs is limited for most people in Germany. All the same, there are some who have further to travel to reach an ATM or who are charged withdrawal fees. Do these individuals adjust their withdrawal behaviour in response to this greater outlay? Or do they go so far as to reduce the amount of cash they use?

According to the classic economic model of Baumol (1952) and Tobin (1956), an increased

14 A similar study conducted by the Bundesbank in 2017 came to the same conclusion. See Deutsche Bundesbank (2020).

outlay per withdrawal (time involved or in the form of fees) lowers withdrawal frequency. Consequently, individuals may choose, for example, to regularly withdraw larger amounts, hold cash in reserve or additionally withdraw cash at the point of sale. But it is also conceivable that they would reduce their demand for cash and (by necessity) use cashless means of payment more frequently. In this case, using cash as a means of payment would be restricted by the high outlay involved in obtaining it.

Linear regression to estimate relationship between withdrawal and payment behaviour, on the one hand, and outlay involved in obtaining cash, on the other

To find answers to these questions, various linear regression models are estimated below in which respondents' withdrawal and payment behaviour (dependent variable) is attributed to the outlay involved in obtaining cash (explanatory variable).[15] The dependent variables used to describe withdrawal behaviour are (i) the number of ATM withdrawals per year, (ii) whether a person withdraws cash to keep in reserve and (iii) withdrawals at the point of sale as a share of total annual withdrawals. Dependent variables describing payment behaviour are (iv) the share of cash payments made at shops measured by the number of transactions and (v) by the value of the transactions. Explanatory variables that reflect the outlay involved in obtaining cash are the time involved in making withdrawals and whether a person often pays fees when withdrawing cash. In addition, the models contain numerous socio-demographic control variables. The models describing withdrawal behaviour ((i) to (iii)) also contain the sum withdrawn annually at ATMs, the point of sale and bank counters. In other words, they analyse how individuals adjust their withdrawal behaviour for each type of cash use.

Description of withdrawal and payment behaviour

Descriptive statistics on the variables used can be found in the adjacent table. Looking at withdrawal behaviour, the statistics show that respondents visit ATMs an average of 31 times a year. 43% withdraw cash to keep it in reserve. In addition, 8% of respondents' total withdrawals are made at the point of sale. Looking at payment behaviour, the statistics show that respondents make an average of 59% of their shop purchases in cash, which corresponds to 48% of their expenditure.[16]

Descriptive statistics*

Estimation variables	Mean	Standard deviation
Dependent variables		
(i) Number of withdrawals per year	31	28
(ii) Withdrawal to keep in reserve (0/1)	0.43	.
(iii) Share of withdrawals at the point of sale	0.08	0.17
(iv) Share of cash payments measured by number of transactions[1]	0.59	0.36
(v) Share of cash payments measured by turnover[1]	0.48	0.41
Explanatory variables		
Time required per withdrawal (in minutes)	9	8
Withdrawal fees (0/1)	0.08	.
Age (in years)	52	18
Male (0/1)	0.48	.
German citizenship (0/1)	0.96	.
Senior school-leaving certificate (0/1)	0.30	.
Equivalised net income in euro	1,804	943
Residential area (0/1)		
Rural	0.22	.
Suburban	0.35	.
Urban	0.43	.
Vulnerable group (0/1)	0.32	.
Financial problems (0/1)	0.15	.
Sum withdrawn annually in euro	6,947	7,802
Number of observations	2,487	

* Data based on the Bundesbank's 2021 payment behaviour study. 1 Number of observations: 1,737.

Deutsche Bundesbank

The results of the regressions (coefficients and standard errors) can be found in the above table. Columns (i) to (iii) show how withdrawal behaviour and the outlay involved in obtaining

15 For general information on the linear regression model, see, for example, Wooldridge (2010).

16 The respondents' average cash payment shares provided here denote the average expenditure shares covered by individual respondents using cash. They should not be equated with cash payment shares in the German economy, which refer to cash transactions as a percentage of total transactions (currently 58% in terms of the number of transactions and 30% in terms of turnover; see Deutsche Bundesbank (2022a)).

Regression results for withdrawal and payment behaviour[o]

Explanatory variables	Number of withdrawals per year (i)	Withdrawal to keep in reserve (0/1) (ii)	Share of withdrawals at the point of sale (iii)	Share of cash payments measured by number of transactions (iv)	Share of cash payments measured by turnover (v)
Time required per withdrawal	– 0.1879*	0.0026*	0.0015*	0.0005	0.0006
	(0.0503)	(0.0010)	(0.0005)	(0.0009)	(0.0011)
Withdrawal fees	– 3.8342*	0.0526	– 0.0016	0.0441	0.0664
	(1.6005)	(0.0361)	(0.0138)	(0.0334)	(0.0391)
Age	– 0.1599*	0.0047*	0.0001	0.0050*	0.0044*
	(0.0433)	(0.0008)	(0.0002)	(0.0007)	(0.0007)
Male	2.4155*	– 0.0502*	– 0.0402*	– 0.0028	0.0006
	(0.9104)	(0.0187)	(0.0071)	(0.0165)	(0.0191)
German citizenship	0.0157	0.0392	– 0.0091	0.0431	0.0089
	(2.6110)	(0.0580)	(0.0235)	(0.0546)	(0.0601)
Senior school-leaving certificate	– 1.7529	– 0.0549*	0.0147	– 0.0624*	– 0.0685*
	(0.9644)	(0.0204)	(0.0077)	(0.0179)	(0.0206)
Equivalised net income (in euro thousands)	– 1.1039*	– 0.0355*	0.0060	– 0.0390*	– 0.0352*
	(0.4106)	(0.0094)	(0.0038)	(0.089)	(0.0099)
Residential area					
Rural	Ref.	Ref.	Ref.	Ref.	Ref.
Suburban	– 1.0072	– 0.0073	0.0065	– 0.0280	– 0.0295
	(1.2636)	(0.0257)	(0.0090)	(0.0229)	(0.0271)
Urban	0.2994	0.0073	0.0233*	– 0.0748*	– 0.0667*
	(1.2868)	(0.0251)	(0.0094)	(0.0222)	(0.0261)
Vulnerable group	– 2.5228	0.1221*	– 0.0384*	– 0.0331	– 0.0007
	(1.4128)	(0.0290)	(0.0105)	(0.0250)	(0.0293)
Financial problems	5.2216*	– 0.0610*	0.0003	0.0381	0.0631
	(1.7189)	(0.0299)	(0.0118)	(0.0281)	(0.0329)
Sum withdrawn annually (in euro thousands)	1.3441*	0.0116*	0.0000	–	–
	(0.1271)	(0.0017)	(0.0004)		
Constant	31.4545*	0.1269	0.0813*	0.4085*	0.3375*
	(3.4848)	(0.0724)	(0.0273)	(0.0682)	(0.0760)
Number of observations	2,487	2,487	2,487	1,737	1,737
R-squared (adjusted)	0.17	0.15	0.03	0.09	0.07

[o] Note: The table shows the estimated coefficients of various linear regressions (ordinary least squares) and their robust standard errors in parentheses. Data based on the Bundesbank's 2021 payment behaviour study. * denotes statistical significance at the 5% level. Regression unweighted.

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Regression results: if ATM withdrawals involve a higher outlay, larger amounts are withdrawn to keep in reserve and use is instead made of cashback services, …

cash are related, while columns (iv) and (v) concern payment behaviour. Statistically significant correlations can be seen with regard to withdrawal behaviour (columns (i) to (iii)). For example, if respondents need five minutes longer to make an ATM withdrawal, they make on average one less trip to the ATM a year (and instead withdraw larger amounts). Furthermore, the probability of cash being kept in reserve after it is withdrawn increases by somewhat more than 1 percentage point, while the share of cash withdrawn at the point of sale goes up by 0.75 percentage point.[17] Individuals who are at least occasionally affected by fees make an average of four fewer withdrawals per year (and instead withdraw larger amounts). However, fees do not appear to affect whether cash is kept in reserve after it is withdrawn or whether withdrawals are made at the point of sale. Overall, the regression results for withdrawal behaviour are consistent with the economic model.[18]

17 In a complementary analysis, a number of interaction terms were used to determine whether the means of transport used by respondents plays a role when it comes to the time it takes to travel to an ATM. This was not the case.

18 As a robustness check, in a further estimation of model (i), the share of withdrawals at the point of sale was included as an explanatory variable. This variable can be seen as an additional proxy for payment method preference. The inclusion had hardly any effect on the coefficients of the outlay variables.

… but payment behaviour remains the same

By contrast, looking at payment behaviour (columns (iv) and (v)) reveals no statistically significant correlations with the individual outlay involved in obtaining cash. In the estimated models, the amount of cash used by respondents cannot be explained by the cost of withdrawing it. The regression therefore does not give any indication that cash use might currently be restricted by an excessive outlay involved in obtaining it.

Alternative analysis using hypothetical scenarios

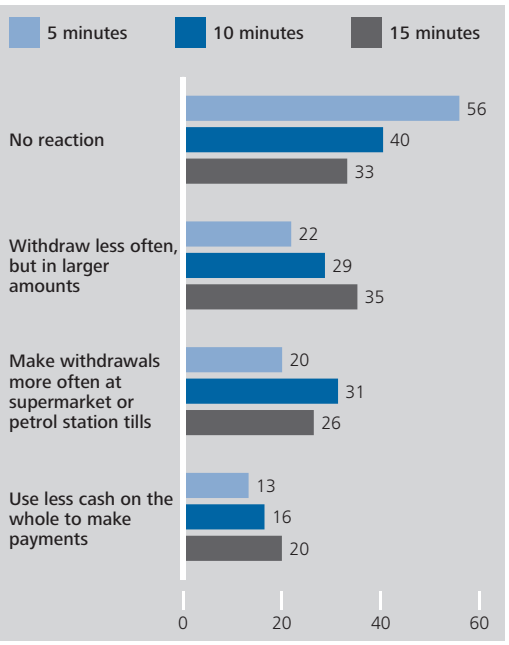
In addition to the regression analysis, the empirical relationship between the outlay involved in obtaining cash and withdrawal and payment behaviour can also be approached using hypothetical scenarios. To this end, survey participants were asked the following question: "Assume it took 5 (or 10 or 15) minutes longer than it does now to reach the nearest ATM or bank counter belonging to your bank or savings bank. What would you probably do in this case?" The responses are shown in the adjacent chart.

If options for withdrawing cash worsened, respondents would adjust their withdrawal and payment behaviour

Five extra minutes to reach an ATM would have no impact on 56% of respondents. Still, 42% would adjust their withdrawal behaviour by withdrawing less frequently at ATMs, instead withdrawing larger amounts (22%) and/or withdrawing cash at the point of sale (20%). 13% would even (additionally) change their payment behaviour and use less cash. As the amount of time to reach an ATM increases (10 or 15 extra minutes), even more respondents lean towards adjusting their behaviour. At 15 minutes, only one-third of respondents would withdraw cash and use it to make payments as before. Overall, 61% would adjust their withdrawal strategy and 20% would use less cash. So if the number of ATMs were reduced, many consumers would adjust not only their withdrawal behaviour but also their payment behaviour. These individuals would then be limited in their freedom to choose between cash and cashless means of payment.

Reaction if the distance to the nearest ATM or bank counter increases*

%, multiple responses allowed



* Data based on the Bundesbank's 2021 payment behaviour study. Question: Assume it took 5/10/15 minutes longer to reach the nearest ATM or bank counter belonging to your bank or savings bank. What would you probably do in this case?

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Conclusion

Empirical analysis of data from the 2021 payment behaviour study shows that the general public in Germany still has very good access to cash. Overall, 94% of respondents estimate that the outlay involved in making withdrawals at ATMs is either low or very low. The average time required per withdrawal is approximately nine minutes. Vulnerable groups report needing somewhat longer. However, they, too, consider the effort involved to be low. There is no evidence that rural areas specifically are undersupplied with cash.

A regression analysis of the data shows statistically significant correlations between the outlay involved in withdrawals and withdrawal behaviour. The results suggest that those who are currently faced with a higher outlay adjust their withdrawal behaviour in an economically rational manner by withdrawing higher amounts

of cash at ATMs that they then keep in reserve or by withdrawing additional cash at the point of sale. However, the regression does not show any statistically significant correlations between the outlay involved in withdrawals and the use of cash as a means of payment. At the moment, access to cash can be interpreted in such a way that consumers are largely free to choose whether or not to use cash at the point of sale. In other words, the Eurosystem's objective of ensuring the freedom of choice between cash and cashless means of payment does not appear to be impaired at present.

In a hypothetical context, however, many respondents state that they would be increasingly inclined to move away from cash if the supply of cash were to deteriorate significantly. In this scenario, they would be limited in their choice of means of payment. Furthermore, this risks setting in motion a cost-driven downward spiral: if cash usage were to fall, cost pressures would rise for private sector stakeholders in the cash cycle, such as CIT companies and commercial banks. This could cause the existing cash infrastructure to be further scaled back in the medium or long term, which in turn would adversely affect cash usage. In order to prevent such a turn of events in the Eurosystem, it is important to continue statistically recording and evaluating the use and availability of cash.

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