EUROPEAN CENTRAL BANK

EUROSYSTEM

Study on the payment attitudes of consumers in the euro area (SPACE)

December 2020

SPACE is dedicated to Hannah Schwabl (18.08.1989 – 27.07.2019), a dedicated and cheerful ECB colleague, who was deeply involved in the initial stage of the work on this study.

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Foreword

Retail payments have to be reliable, efficient and inclusive in order to maintain confidence in the euro. In the digital age, innovation in retail payments is influencing the way people pay. In view of the continuing transformation towards a more digital payment landscape, the Eurosystem is committed to carefully monitoring new trends and the nature and extent of the changes in consumers' payment preferences.

In 2019 the ECB launched a new survey to investigate the payment behaviour of euro area citizens. The results are described in this report, together with provisional findings on how consumers paid during the initial phase of the coronavirus crisis. The survey results indicate that cash is still the most used retail payment instrument in the euro area, but cashless means of payment are increasing their share across euro area countries, albeit at varying speeds. The trend towards cashless payments seems to have accelerated during the pandemic, although the consolidation of this provisional finding is still uncertain.

The evidence presented in this report will help the Eurosystem to understand actual consumer demand and evolving market trends and facilitate the implementation of the Eurosystem's cash and payment strategies. These strategies entail fostering competitive and innovative pan-European market solutions, while guaranteeing that efficient and resilient payment options remain available to all euro area citizens. For cash, this commitment has been laid down in the Eurosystem's Cash 2030 strategy, which aims to ensure access to and the acceptance of cash in the euro area. Guaranteeing and enhancing consumers' freedom to choose their payment method and the financial inclusion of all groups in society are of the utmost importance to us.

Fabio Panetta
ECB Executive Board Member

Executive summary

In 2019, the European Central Bank (ECB) conducted a study on the payment attitudes of consumers in the euro area (hereafter referred to as SPACE). This report presents the key SPACE results and compares them, to the extent possible, with an earlier ECB study conducted in 2016, the study on the use of cash by households in the euro area or SUCH (Esselink and Hernández, 2017).

SPACE assesses consumers' use of cash and non-cash payment instruments at the level of each participating euro area country and for the euro area as a whole. The scope of SPACE includes purchases by individuals at the physical point of sale (POS) and person-to-person (P2P) payments, as well as payments made remotely (i.e. for online shopping, telephone orders and mail orders, bill payments and recurring payments). SPACE also explores the factors influencing individuals' payment attitudes and behaviour. Such factors are consumers' self-reported payment preferences, as well as consumers' access to and merchants' acceptance of payment instruments.

SPACE fieldwork was conducted in 2019. Between mid-March 2019 and mid-December 2019, 41,155 respondents in 17 euro area countries reported their transactions in one-day payment diaries. The payment diaries of 2,061 respondents in Germany and 22,103 respondents in the Netherlands collected in the context of national surveys in 2017 and 2019 respectively were included in the SPACE analysis where possible (see De Nederlandsche Bank, 2020, and Deutsche Bundesbank, 2018). While payment diary data for Germany stem from 2017, the Deutsche Bundesbank collected some survey data in 2019 (see Box 1) in parallel to the ECB survey.

The SPACE results (including Dutch and German data) show that:

- consumers still predominantly use cash for POS and P2P payments: 73% of the volume of POS and P2P transactions was carried out using cash as a payment instrument and 27% using non-cash payment instruments;
- cards were the predominant payment instrument used for cashless payments (24%);
- this compares with a cash usage of 79% in terms of the number of transactions and a card usage of 19% reported in the previous study[1] (SUCH);
- among all card payments, 38% of the transactions were made using contactless technology;
- in value terms, cash transactions accounted for 48% of all transactions, versus 41% for card transactions;

[1] In the previous study, P2P transactions were not part of the scope and online transactions were included.

- euro area citizens made on average 1.6 POS and P2P transactions per day, with an average transaction value of €25.6;
- 48% of the POS and P2P transactions were conducted in local shops for day-to-day retail purchases (shops, supermarkets, street markets) and 19% in restaurants, bars, cafés and hotels.

Excluding Germany, for which comparable data on remote payments (i.e. online and bill payments) are not available, the SPACE results also show that:

- 96% of all online transactions were cashless, using cards (49% of the online transactions), e-payment solutions (27%) and credit transfers (10%); cash was used in 4% of the online transactions[2];
- euro area citizens made on average 0.16 online transactions (using the internet, including also telephone and mail purchases) per day, with an average value of €66.9;
- 89% of all bill payments were cashless; 41% of the bill payments were made using direct debit and 20% using credit transfer as the payment method; 11% of the bill payments were in cash;
- euro area citizens made on average slightly less than one bill payment per week (0.93 transactions).

Consumers' self-reported preferences for payment instruments contrast with the actual high usage of cash, as there seems to be a preference for using cashless payment instruments. Almost half (49%) of the respondents stated that they preferred using cards or other cashless payment instruments (up from 43% in 2016 according to SUCH), whereas 27% said that they preferred cash (down from 32% in 2016), while the remaining 24% said that they were indifferent. Asked about the importance of cash, 55% of the respondents stated that it is important or very important for them to still have the option to pay with cash in the future.

The SPACE results also reveal that cash is used by respondents to top up their wallets, as an alternative way of savings for precautionary motives (e.g. as a safeguard against events such as electronic payment outages or crises), since 34% of the respondents stated that they stored cash at home or in a safe place.

The SPACE results show that there are significant differences in consumers' payment behaviour and attitudes across the euro area countries. Not only between countries, but also within different groups of the population, there are substantial differences in payment behaviour (for example, access to payment instruments and preferences for using them may depend in particular on income, education and age groups). This is consistent with the results of SUCH and with payment surveys conducted in other developed countries (Bagnall et al., 2016; Arango-Arango et al., 2018).

[2] Cash is sometimes used to pay for purchases made online, e.g. when paying for food delivered to your door.

Comparing the results of the SPACE survey with those of the SUCH survey carried out three years ago, it appears that cash is still the predominant payment instrument for POS and P2P payments, and that consumers' payment behaviour is only changing gradually. The share of cash usage for day-to-day transactions in the total number of payments has declined from 79% to 73% in three years. The ongoing coronavirus (COVID-19) pandemic appears to have accelerated this trend for at least some consumers. This seems to be confirmed by the results of a separate survey on the impact of the pandemic on cash trends which was carried out on behalf of the ECB in July 2020 in all euro area countries. 40% of the respondents to this survey replied that they have used less cash since the start of the pandemic, and almost 90% of them stated that they would continue to pay less with cash (46% certainly and 41% probably) after the pandemic was over.

Interestingly, the most often-mentioned reason for the change in perception was the fact that electronic payments have been made more convenient during the pandemic, e.g. by increasing the threshold for the contactless card holder having to enter his/her personal identification number (PIN) for payment authorisation into the card terminal.

The decline in cash use for making payments raises the question about the availability of cash and its acceptance as a payment instrument. The SPACE results show that a large majority of respondents were still satisfied with their access to cash via automated teller machines (ATMs), bank branches and post offices in 2019, but compared with the 2016 results there has been a decline in the ease of access to them (from 94% to 89%) in all euro area countries. Cash acceptance at the POS is still high in most euro area countries, but in a few countries it can no longer be said that cash is universally accepted.

With the SPACE survey, a detailed analysis of payment behaviour for online, telephone and mail orders could also be made for the first time. The results show that online shopping has become an important element in the retail payments landscape, as in 2019 online transactions made up almost 7% of all payments made at the point of interaction[3] (POI). In value terms, the share of online transactions in total POI transactions was 17% in 2019. However, there are large differences in the relevance of online transactions between euro area countries, ranging from an average of 1.75 transactions per week in Luxembourg to an average of 0.14 transactions in Cyprus. For making online payments, cards were the most used payment instrument, electronic payment solutions (such as PayPal) being the second most used option. Bill payments were mostly done via direct debits or credit transfers, although in a few euro area countries the use of cash, in particular when paying for utilities, was non-negligible. Cards are also very often used for certain types of bill payments (e.g. medical expenses).

All-in-all, the study shows that depending on the type of purchase, different payment instruments are preferably used by consumers.

[3] Point-of-interaction transactions include point-of-sale, person-to-person and online transactions.

Introduction

Innovative non-cash payment instruments have been developed and rolled out across the euro area in recent years. At the same time, recent surveys on consumers' payment attitudes and behaviour conducted in several countries show that the use of cash as a means of payment appears to be declining over time. Euro area citizens' attitudes and behaviour with regard to new payment solutions and cash need to be understood. Moreover, the ECB and the national central banks (NCBs) have a fundamental responsibility to ensure a smooth supply of cash and facilitate the use of cash in payments by citizens and businesses. Cash is still the only form of public money that is directly accessible to all citizens, ensuring autonomy, privacy and social inclusion. As a strategic response to various developments having an impact on the availability and acceptance of cash, the ECB adopted a 2030 strategy with the vision to preserve euro cash as a generally available, attractive, reliable and competitive payment instrument and a store of value of choice.

Having a reliable source of information on payment behaviour in the euro area may help in providing the Eurosystem and the relevant payment system stakeholders with key information for the development of their policies and strategic decisions, which can contribute to improving the efficiency of the cash cycle and of the payment system.

For this purpose, the ECB carried out the study on the payment attitudes of consumers in the euro area (SPACE) in 2019. SPACE covers the instruments which euro area consumers use to make payments, including POS payments[4] and P2P payments[5], online payments, payments by mail and on the phone, as well as bill and recurring payments. SPACE also analyses the factors influencing individuals' payment attitudes and payment behaviour.

The main objectives of the study were to estimate for the euro area the number and value of transactions carried out by consumers at POS and P2P (broken down by payment instrument and place of purchase) and to get an indication of the way in which payments carried out remotely (i.e. for online shopping, telephone and mail orders, and bills) were made, split into payment instrument and category.

Further objectives of the study were to understand payment preferences and access to the different payment instruments, the attitudes towards new payment instruments and the influence of demographic characteristics on consumers' payment behaviour.

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4 Point-of-sale payments include those payments made at supermarkets, restaurants, bars, cafés, small shops for day-to-day items, petrol stations, street or market selling points, shops selling durable goods, vending or ticketing machines, venues for culture, sports or entertainment, offices of public authorities, and hotels or similar, as well as for services outside the home (e.g. hairdressers, dry cleaning, bicycle repair) and at other physical locations. If a respondent could not allocate the place where the transaction had taken place, it was included under "Don't know".

5 Person-to-person payments include all payments made between two individuals, e.g. payments for services in and around the house, charitable donations and other P2P payments such as pocket money, gifts, repayments of shared restaurant bills, as well as payments at a flea market, in a church and to street artists.

1 Research method

1.1 Scope

The study on the use of cash by households (SUCH)[6] published in 2017 was the first study of its kind, in which consumers' payment behaviour at POS and P2P[7] was analysed for all 19 euro area countries[8] based on a survey consisting of a payment diary and a questionnaire. Consumers' payment behaviour at POS and for P2P transactions is also the focus of this second study. However, in this new survey, questions about online payments and remote payments were included, allowing a deeper understanding of the way these payments are carried out.

The SPACE survey was based on a payment diary and an accompanying questionnaire (see Annex A). The payment diary was split into three modules covering: (i) POS and P2P payments; (ii) online payments including online purchases, and telephone and mail orders; and (iii) bill and recurring payments. The survey respondents were requested to report their POS, P2P and online transactions in a one-day diary[9]. Respondents were also asked to report any bill payments made during the last seven days. Furthermore, they had to answer a questionnaire with questions about their behaviour and attitudes towards cash and other payment instruments.

The fieldwork was carried out by the market research company Kantar Public in 17 of the 19 euro area countries (i.e. with the exception of Germany and the Netherlands).

The Deutsche Bundesbank, and De Nederlandsche Bank together with the Dutch Payments Association, have carried out their own surveys on payment behaviour over a period of more than a decade, and in order not to create a break in their time series, their data have been integrated where possible (see Box 1).[10]

1.2 Sample design

The sample was designed taking into account the population size of each country and the heterogeneity across regions within each country. The sample design aimed to achieve representativeness of the population for gender, age, education and region. To capture payment behaviour for each day of the week, a quota was also set on the day of the transactions recorded in the payment diary, thereby targeting representativeness for the population for each day of the week. From an

6 Esselink and Hernandez (2017).

7 In the payment diary, the respondents could report their payment made by place of purchase. For some categories, the meaning was unambiguous (i.e. supermarket), but for some other more generic categories (e.g. services outside the home), it was difficult to say with certainty if the payment was made at a POS or P2P. Therefore, the results are usually presented for these two categories together.

8 The results of the national surveys conducted in Germany and in the Netherlands were also integrated into the analysis when possible.

9 A three-day diary in Malta and Cyprus.

10 It should be noted that the euro area data do not fully reflect the situation in 2019, since Germany has the highest weight in the euro area results and the payment diary data included are for 2017.

organisational point of view, this was challenging, but generally a good representation of the sample for each day of the week was achieved. This latter point is a significant improvement in terms of methodology compared with SUCH. The sample was drawn from two sampling frames. Similar to the SUCH survey, part of the sample was drawn from a non-probabilistic frame[11], i.e. Kantar Public online panels. Demographic quotas were used in the online panel to minimise panel bias. In addition, a probabilistic dual sampling frame (mobile and fixed line) was used for telephone interviews, as well as in the recruitment of respondents for face-to-face interviews in Malta and Cyprus. The telephone survey did not apply any quotas at the recruitment stage. In countries where the survey was conducted both in telephone and online mode, the sample size was equal between the two modes (see Table 2).

The survey was conducted in 17 euro area countries. In 15 of those countries, it was carried out in three waves from mid-March to mid-December 2019. In Malta and Cyprus, interviews were conducted only in Wave 1, from March to June 2019, as these were the only countries where the interviews were conducted face to face. For the 15 countries, the waves were spread across the year to cover various periods of the year (see Table 1) and to also capture some seasonal patterns in people's payment behaviour. Each wave covered a period of six weeks, with the interviewing pace being as homogeneous as possible within and across countries and modes. However, for practical reasons, the pace at which the interviews were conducted could not be fully controlled, leading to differences, which may have influenced slightly the comparability of results between countries because of potential seasonal effects.

The number of interviews completed per wave, month and country is shown in Table 1 below.

[11] Non-probability sampling is a sampling technique where the odds of any member being selected for a sample cannot be calculated (e.g. owing to low response rates, unknown panel joiner probabilities).

Table 1

Distribution of the sample per country, wave and month

	Wave 1				Wave 2			Wave 3		Total
Country	March	April[12]	May	June	September	October	November	November	December	sample size
AT	3.1%	24.4%	5.7%	0.0%	16.0%	16.3%	0.6%	30.2%	3.6%	2,111
BE	4.4%	22.8%	6.3%	0.0%	19.0%	13.0%	1.2%	31.0%	2.4%	3,032
CY	45.1%	54.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	508
EE	4.7%	20.6%	7.6%	0.3%	15.2%	18.1%	0.0%	28.8%	4.7%	3,023
ES	1.2%	21.4%	10.8%	0.0%	19.5%	12.2%	0.9%	26.1%	8.0%	4,157
FI	4.8%	15.4%	12.4%	0.5%	19.8%	13.2%	0.4%	30.7%	2.8%	3,023
FR	2.2%	19.4%	12.0%	0.0%	22.9%	9.5%	0.5%	28.5%	5.1%	4,489
GR	3.2%	28.3%	2.0%	0.0%	17.7%	15.6%	0.0%	29.3%	3.9%	2,109
IE	4.6%	23.2%	5.2%	0.0%	17.8%	14.8%	0.7%	28.7%	4.9%	2,088
IT	8.1%	16.6%	8.7%	0.0%	18.3%	14.1%	0.6%	31.2%	2.4%	4,199
LT	7.4%	22.5%	2.5%	0.0%	14.0%	19.8%	0.9%	28.2%	4.6%	2,164
LU	6.4%	18.8%	5.1%	0.0%	11.9%	12.7%	2.3%	29.3%	13.5%	1,367
LV	4.5%	26.8%	2.0%	0.0%	17.1%	16.0%	0.0%	30.5%	3.1%	2,144
MT	4.9%	31.1%	64.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	450
PT	4.4%	22.0%	5.3%	1.9%	22.9%	9.2%	0.5%	28.6%	5.1%	2,127
SI	10.4%	19.8%	3.9%	0.0%	18.7%	13.8%	0.0%	31.3%	2.1%	2,075
SK	10.2%	17.3%	6.1%	0.0%	19.6%	12.8%	0.0%	31.5%	2.5%	2,089

The achieved sample[13] was distributed evenly across the waves, although a larger share of interviews was conducted between the end of March and the end of April.

A total of 41,440 respondents aged 18 or more participated in the survey and, after the data cleaning, 41,155 interviews remained in the dataset. These respondents reported 68,023 POS and P2P transactions, 7,371 online purchases and 43,659 bill payments (excluding Germany and the Netherlands).

Already before the survey was carried out, it was considered that it would be difficult to get a representative sample of all bill payments made during a year because some bill payments are typically made at specific times of the year such as at the beginning of the year (e.g. home insurance), or they can follow a more regular pattern as in the case of quarterly or monthly payments. Also, as respondents would likely not know or remember certain automatic payments made for regular expenses like rent, electricity or telephone, an additional dedicated question on how these frequent payments are made was included in the accompanying questionnaire.

12 The fieldwork in all modes was put on hold in the period 18-23 April 2019 (Easter holiday period).

13 The target was to reach a certain minimum number of transactions to be recorded at POS and P2P per country, taking into account population size and the variance in the estimates of the transactions to be recorded per interviewee (based on the data from SUCH). The number of targeted transactions varied between 6,000 and 8,000 for France, Italy and Spain, and between 2,500 and 4,000 for the other countries.

1.3 Data collection

The same questionnaire was used in all countries and translated from English into the main languages of each country by Kantar Public, with the help of NCB experts. Special attention was paid to ensuring that interviewees understood the terms in their own language well, and for this reason, examples were adjusted to the national context.

The survey process consisted of three parts: a recruitment interview, the recording period and the main interview (follow-up interview). The data collection encompassed a period of three days. The main interview was conducted with a certain tolerance in the timing. When respondents were not immediately available for the main interview on the day after the recording period, interviewers could make an appointment for a date up to three days after the recording period in order to conduct the main interview.

In order to prevent panel bias, the interviews were conducted both online (computer-assisted web interviewing – CAWI) and over the telephone (computer-assisted telephone interviewing – CATI) using a mix of mobile and fixed lines. Because representative online panels are not available in Malta and Cyprus, respondents from those countries were interviewed face to face (F2F).

Table 2

Distribution of the sample per country and mode

Country	CATI	CAWI	F2F
AT	1,059	1,052	.
BE	1,513	1,519	.
CY	.	.	508
EE	1,500	1,523	.
ES	2,097	2,060	.
FI	1,509	1,514	.
FR	2,277	2,212	.
GR	1,055	1,054	.
IE	1,046	1,042	.
IT	2,100	2,099	.
LT	1,056	1,108	.
LU	615	752	.
LV	1,059	1,085	.
MT	.	.	450
PT	1,052	1,075	.
SI	1,049	1,026	.
SK	1,052	1,037	.
Total	**20,039**	**20,158**	**958**

The results were collected using Kantar Public online panels, which include some simple demographic quotas to minimise panel bias. For the telephone interviews, a random sample from the 18+ population was used and this sample had been independently drawn from the online panel sample. A difference in payment behaviour

between online and telephone respondents has been identified and measured by comparing the results of the two samples (see Box 2).

For the SPACE survey, all respondents filled in the diary modules as well as the questionnaire, and the two interview modes were used in all waves. Compared with the SUCH survey, where telephone interviews were conducted only for the 55+ population and responses to the questionnaire were collected from a sub-set of respondents in the first wave, which were mainly approached online, the sampling design and the survey conduct for SPACE should have ensured a better representativeness of the results. In this respect, it should be noted that a balance has been reached for all quotas set on the sample, with a slight caveat with regard to certain education categories[14] in some countries, although they were fulfilled within an agreed tolerance.

Box 1
Payment surveys in Germany and in the Netherlands

Germany

Since 2008, the Deutsche Bundesbank (DBB) has been conducting household surveys on payment behaviour in Germany at three-year intervals.

The latest payment survey was carried out between May and August 2017. The survey was addressed to the German-speaking population over the age of 18 and residing in Germany. Interviews were conducted face to face (computer-assisted personal interview – CAPI). The respondents completed a pencil-and-paper payment diary in the seven days following the interview. In total, 2,061 individuals completed the diary, reporting 21,361 payment transactions. The payment diary results of the DBB were integrated into the results of the SPACE POS and P2P module. All results referring to the payment diary are therefore for 2017 for Germany, and hence euro area results related to the payment diary do not fully reflect the 2019 situation, also considering the relatively high weight of Germany in the euro area totals.

In order to have data from the same year related to the questionnaire, the DBB conducted a survey based on the SPACE accompanying questionnaire, interviewing 3,122 respondents using CATI (1,510 respondents) and CAWI (1,611 respondents) interview modes in May and June 2019. These results have been integrated into the analysis.

The Netherlands

The survey was commissioned by De Nederlandsche Bank and the Dutch Payments Association.[15] It included the same payment diary and almost the same accompanying questionnaire as for SPACE. The payment diary was kept throughout the year 2019, whereas the bill payments module was administered in the third quarter of 2019; the accompanying questionnaire was completed during the last quarter of 2019. The population aged over 12 was interviewed, but the results were filtered for the population aged 18+ for integration into SPACE. Given the high internet usage in the Netherlands, the

[14] In comparison to the 2018 European Union Statistics on Income and Living Conditions (EU-SILC) survey data.

[15] For more information on the survey, see Jonker et al. (2018).

interviews were mainly conducted using CAWI and, to a lesser extent, CATI. A total of 22,103 respondents participated in the survey and reported 83,623 transactions. The results were integrated into the analysis.

Data integration and weighting

It should be noted that part of the weighting procedure used on the 17 countries could not be reproduced for the German and the Dutch diary data as the interview modes are different in these two countries and the countries used their own weighting procedure. Therefore, the euro area averages have been calculated using the population shares of these countries applied to country results to gross their weights to the euro area size.

1.4 Weighting

The sample was weighted to minimise the observable bias of survey estimates and to enable solid inferences to be made about the sample based on the demographic characteristics of each country. The weighting process involved three steps. In the first step, the net sample of offline respondents was weighted using known population benchmarks for gender within age bands, educational attainment, employment, household size, region and internet access as calibration benchmarks. In the second step, the online sample was matched to the weighted probabilistic sample of respondents with internet access using a selection of balancing variables. The balancing variables included the sociodemographic information used in the first step, as well as a selection of non-demographic topic-specific questions where significant differences between the (weighted) offline and online samples were observed. The questionnaire contained questions that were used to mitigate this bias, for example, questions making it possible to create a financial index and a technology index. In the final step, the two samples were combined, with the weights from step 1 and step 2 being applied to each sample as a pre-weight before the combined sample was calibrated to the sociodemographic population targets used in the first step.

This weighting procedure has reduced the differences observed in the key outcomes of the online and telephone samples (the incidence, number and amount of cash and non-cash payments), but did not completely eradicate them. Much of the remaining differences between the samples are likely to be attributable to modal differences relating to the presence of an interviewer (virtual versus oral experience). It is likely that some differences still relate to unobserved differences in the sample profiles.

1.5 Validation of the data

Fieldwork progress was continuously monitored in terms of the quotas across all survey modes and in all countries. At the end of the fieldwork of each wave, the responses were checked for completeness, consistency and plausibility on the basis of multiple criteria, including sociodemographic information, outliers, contradicting and

unusual answers, balance in the diary part, payment instrument ownership, and consistency between respondent characteristics and payment made. Based on a predefined set of rules, inconsistent results were marked with a flag. Such flags indicated the individual case and denoted the rule that was violated and constituted a basis to operate further data cleaning and spot outliers. A total of 285 interviews were removed from the dataset, which represents 0.7% of the total number of interviews.

Due to high levels of missing data on the amount of purchases in the remote payment module (12% in the online module and 10% in the bill module – no amount was missing in the POS and P2P module), as well as the importance of calculating the survey outcomes across all purchase categories and payment methods, missing data for the exact amount of purchases have been imputed using standard methods of imputation (Ghosh and Vogt, 2012; Templ et al., 2019). The predictor variables for the imputation model were determined on the basis of a regression model that looked at the main effects and country interaction terms for the mode of data collection, seasonality effects, the location and method of payment, household size, gender and age (see Filzmoser et al., 2016). The specific categories in the predictor variables where sample sizes were low they have been regrouped. The country and type of payment (e.g. online shopping or bill payment) were controlled by running the imputation model on a per module and country basis.

Finally, the overall aggregates calculated from the answers were compared with the results of the previous study (i.e. SUCH), with payment data collected at the ECB[16] and with national datasets, when available. Three main items of payment statistics were used from the ECB's Statistical Data Warehouse to validate the survey results: (i) the value of cash withdrawals; (ii) statistics on domestic card payments initiated at the POS; and (iii) the value of card payments. In addition, the Household Finance and Consumption Survey was used to validate the results of the bill payments module on the amount spent on rent and mortgages and utilities.

Box 2

Combining telephone and online interviews to reduce bias

Online panels may be sensitive to bias when having access to the internet, or not, influences the behaviour of the interviewed (Bethlehem, 2010). The assumption is that people using a computer may be "tech-savvy" and more inclined to use innovative payment methods. Hayashi and Klee (2003) showed that consumers using new technology or computers were more likely to use electronic forms of payment, such as debit cards and electronic bill payments; more recently, Stavins (2017) investigated how technology influences consumers' payment behaviour. Therefore, a mixed-mode survey approach was applied, combining online and telephone (CATI) interviews to avoid under-coverage of non-internet users. The sample size in each country was equally spread over the two methods.

A technology index combining three variables – the frequency of internet usage with personal computers, tablets and smartphones, respectively – was set up to identify technology-heavy users. Overall, online panels showed more technology-heavy users (79.8%) than the telephone interviews

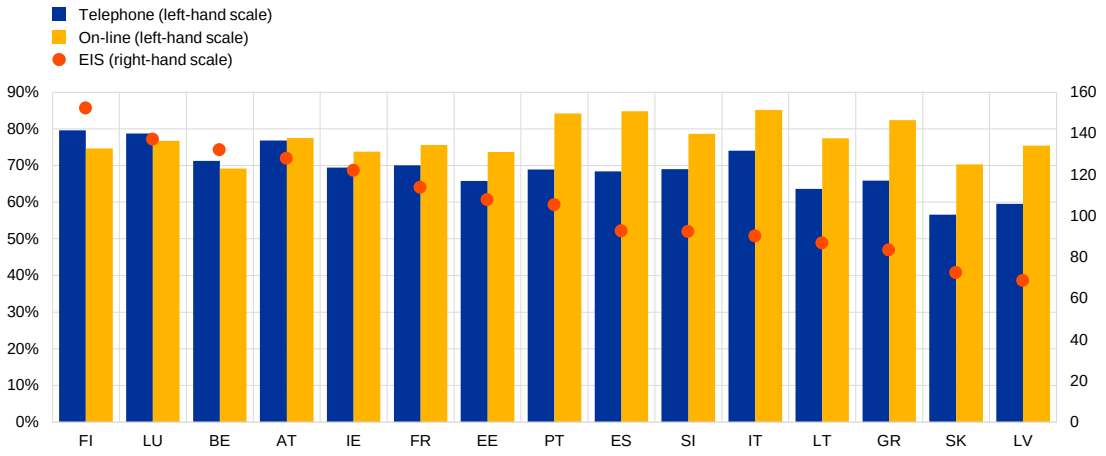
[16] Payment statistics dataset in the Statistical Data Warehouse (reference year: 2019); aggregates calculated for the Household Finance and Consumption Survey (reference year: 2017).

(70.2%). The comparison between the percentage of technology-heavy users in each of the samples and the annual European Innovation Scoreboard (EIS)[17] shows that the differences are even more pronounced for countries with lower innovation (see Chart A). Moreover, these countries have more technology-heavy users in the online panel than in the telephone sample, which may be due to the self-selection of respondents in the web surveys. Therefore, the mere usage of an online survey could lead to biased results on payment behaviour. On the other hand, the CATI survey, which uses random digit dialling (RDD), is useful to reach non-internet users and to reduce the bias due to under-coverage and self-selection of the online panel. To mitigate the bias and produce representative statistics on payment behaviour, a weighting procedure was applied, making the online and telephone samples representative of the entire population. After the weighting procedure, an analysis of the SPACE results indicates that the online panel does not show a higher propensity to use cashless instruments than those interviewed by telephone.

Chart A

Technology-heavy users for the interview modes and the European Innovation Scoreboard (EIS)

(left-hand scale: percentages; right-hand scale: EIS)



Sources: ECB (SPACE) and European Commission.

[17] Every year the European Commission produces the annual European Innovation Scoreboard (EIS), an indicator of innovation. The EIS, based on 27 different indicators, provides a comparative assessment of the research and innovation performance of EU Member States and selected third countries, and the relative strengths and weaknesses of their research and innovation systems.

2 Payments at the point of sale and to individuals

The survey respondents were requested to record in a diary all the purchases they made during the day, giving information on the amount spent and on the place where they made their purchase. In this section, details of the results for payments made at the POS or to a person (P2P) are given. Respondents were asked to report which payment instrument or payment method (device) they used to make the payment. With this information, estimates of the number and value of the POS and P2P payments were produced, per payment instrument and place of purchase. Because the characteristics of each respondent were known, payment behaviour could also be investigated from a sociodemographic perspective. To give insights into the motivations for choosing a certain payment instrument (e.g. constraints because of a lack of acceptance), information on the amount of cash (banknotes and coins) available in the respondent's wallet at the beginning of the day and any cash replenishment was also collected. Respondents were also requested to report whether payment instruments other than those they used would have been accepted, if they had wanted to use them.

2.1 Total number and value of POS and P2P payments per payment instrument and their relative share per country

The following section presents the results of the payment diary for the payments made by consumers at the POS and P2P extrapolated to the full year 2019 and the entire euro area population aged 18 years and above. It is estimated that in 2019 consumers made 160 billion POS and P2P payments, amounting to €4,082 billion (see Table 3).

At the POS, euro area citizens made 109 billion cash payments worth €1,722 billion and 38 billion card payments with a value of €1,633 billion. For P2P payments, there were 8 billion cash payments with a value of €249 billion and 0.5 billion card payments worth €34 billion.

Consumers also used non-cash payment instruments other than cards, such as bank cheques, credit transfers and direct debits, for paying at the POS. Usage of these instruments was comparably low in terms of volume (5 billion) and value (€445 billion).

Table 3

Number and value of POS and P2P payments in the euro area in 2019

	Number of transactions (in billions)	Value of transactions (in € billions)
All payment instruments	160	4,082
POS	151	3,686
P2P	9	397
Cash	116	1,971
POS	109	1,722
P2P	8	249
Cards	38	1,667
POS	38	1,633
P2P	0.5	34
Others	5	445
POS	4	331
P2P	1	114

Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). The category "Cards" includes credit and debit cards. The category "Others" refers to payments made with mobile phones, bank cheques, credit transfers, direct debits and other (unidentified) payment instruments, and includes the answer "Don't know". Due to their low frequency of use, these instruments have been grouped into a single category. P2P transactions are calculated for the categories "Services inside or around the house", "Charity" and "Other P2P payments". Totals may not add up due to rounding.

Cash remained the means of payment the most used for paying at the POS and for making P2P payments in the euro area in 2019, both in terms of number and value (see Chart 1). At the same time, the share of cash in overall turnover decreased by 6 percentage points compared with the SUCH results.

In 2019, slightly less than three-quarters (73%) of all POS and P2P payments were made using banknotes and coins. As regards non-cash payment instruments, cards were used substantially. Their share was 24% of all payments, with debit cards accounting for 18.4% and credit cards for 5.3%. Non-cash payments made using mobile phones as an access device (regardless of the underlying payment method, e.g. an application) and payments made by cheques, credit transfers, direct debits and other (unidentified) payment instruments accounted each for less than 1% of the total number of transactions. This low percentage might be due to the unavailability of some of these instruments in some countries, to the low ownership among the respondents (for instance, only 28% of the respondents said that they had access to mobile payments) or to the non-acceptance of certain payment instruments at the POS (e.g. credit transfers or direct debits).

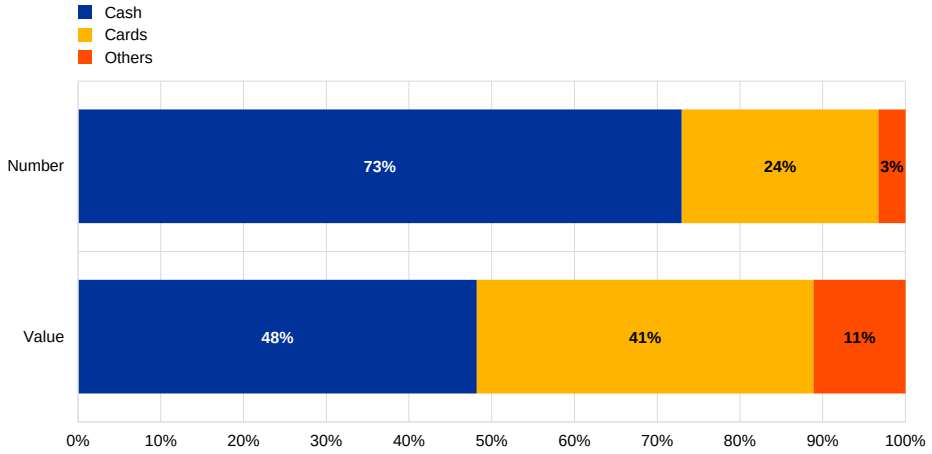
In terms of value, cash accounts for 48% of POS and P2P payments. Cards accounted for 41% of the value of the overall payments turnover. More specifically, debit cards accounted for 30.2% and credit cards for 10.5%. Credit transfers accounted for 4.6%, cheques for 2.4%, and mobile phone, direct debit and other payment instruments for less than 4% of the total payments turnover.

When comparing cash and card transactions in terms of number and value, it can be inferred that cash transactions were generally lower in value than those made using a card. Indeed, although cash accounted for 73% of the total number of transactions, it represented a much lower percentage in terms of total transaction value (48%).

Conversely, debit and credit cards accounted for less of the total transactions but a higher total value, meaning that as the value of the transaction increases cards were more likely to be used.

Chart 1

Share of payment instruments used at the POS and P2P (in terms of the number and value of transactions)



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). The category "Cards" includes credit and debit cards. The category "Others" refers to payments with mobile phones, bank cheques, credit transfers, direct debits and other (unidentified) payment instruments, and includes the answer "Don't know". Due to their low frequency of use, these instruments have been grouped into a single category.

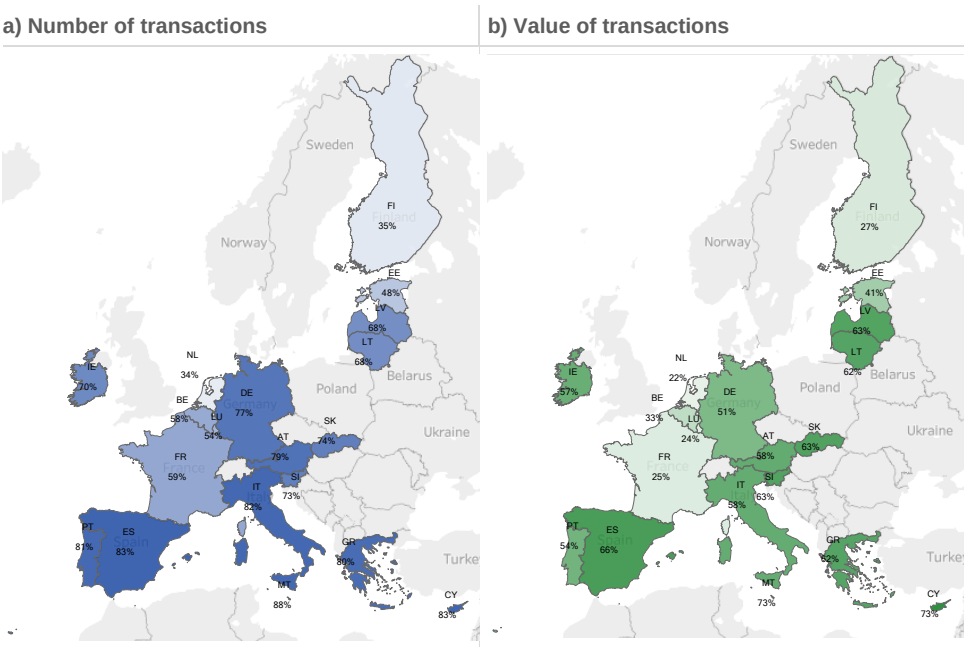
At the euro area country level, in terms of the number of transactions at the POS and P2P, in all but two countries, cash was the most used payment instrument, with the highest proportions in Malta (88%), Spain and Cyprus (83% each). In contrast, in Finland and the Netherlands respectively only 35% and 34% of the payments were made in cash (see Figure 1).[18] In these countries, debit cards were the most used payment instrument. In Estonia, cards (47%) and cash (48%) have an almost equal share in the total number of transactions.

The proportion of cash in relation to the total value of POS and P2P payments varied considerably across countries, from 73% in Cyprus and Malta and 66% in Spain, to 33% in Belgium, 27% in Finland, 25% in France, 24% in Luxembourg and 22% in the Netherlands. In Estonia, cash and debit cards accounted for 41% each.

[18] Note that cash usage figures published by De Nederlandsche Bank and the Dutch Payments Association are slightly lower (i.e. 32% for the share of cash in the total number of POS payments and 21% for its share of the total value) than presented here because they are based on consumers aged 12 and above and include POS payments only (De Nederlandsche Bank, 2020).

Figure 1

Cash payments – number and value of transactions



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).

As shown in Chart 2, compared with the SUCH study conducted in 2016, in terms of the number, the cash usage for making POS and P2P payments decreased the most in Finland[19] (-19 percentage points (p.p.)), followed by the Netherlands[20] (-11 p.p.), Ireland and Luxembourg (-10 p.p.), France (-9 p.p.) and Greece (-8 p.p.).

In terms of the value of transactions, the biggest drops in cash usage for making POS and P2P payments were in Greece (-13 p.p.), Italy (-11 p.p.), Austria (-9 p.p.) and Finland (-7 p.p.).

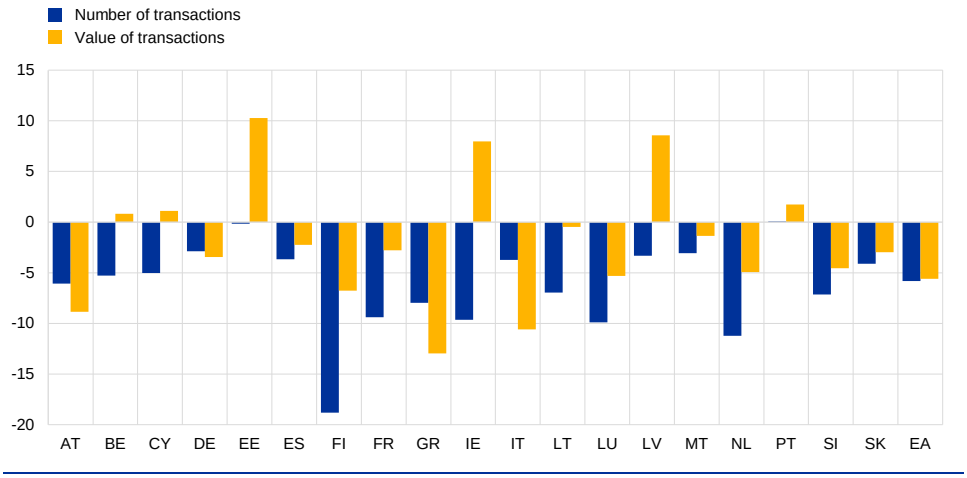
The relative share of cash payments in overall turnover increased notably in Estonia (+10 p.p.), Latvia (+9 p.p.) and Ireland (+8 p.p.).

19 In Finland and France, the noteworthy declines are at least partially due to the change in the SPACE methodology. The SPACE study reached a better representativeness of the population in these two countries than the SUCH study, especially as regards the regional coverage of the online sample.

20 In SUCH the Dutch results covered consumers aged 12 and older, whereas SPACE covered consumers aged 18 and older.

Chart 2

Difference in cash transactions between SUCH (2016) and SPACE (2019)



Sources: Calculation based on data from ECB (2019), ECB (2016), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: "EA" refers to the euro area (all 19 countries). The SUCH values only include POS payments, while the SPACE values include both POS and P2P payments. Since P2P payments are mostly made in cash according to the SPACE results, values might slightly underestimate the difference between SUCH and SPACE. For Germany, data for the SUCH study were for 2014. Consequently, Chart 2 compares the cash shares in Germany measured in 2017 with those measured in 2014. The German retail sector data in 2019 (i.e. with measurement made directly at retailers' cash registers) showed that cash was used for 73% of transactions, representing 47% of the transaction value. These results need to be viewed with caution, however, as the methodology of the German retail sector survey cannot be compared with that of the Deutsche Bundesbank, but they do give an indication that the decline in cash usage in Germany in 2018 and 2019 was likely not very pronounced (EHI Retail Institute, 2020).

Box 3

Survey on the impact of the pandemic on cash trends

Objective and survey methodology

In July 2020, an ECB survey was rolled out in all euro area countries in order to measure the impact of the pandemic on cash trends (IMPACT survey). The survey was prompted by concerns among the general public and retailers about the risks of being contaminated with the coronavirus via cash, and by the visibly higher card use, as many retailers asked their clients to pay (contactless) by card. It would also provide an update on the attitudes towards cash and give an indication to what extent cash use might have declined as a result of the pandemic.

The outcomes of the two surveys (SPACE and IMPACT) cannot be directly compared as the type of survey (payment diary in SPACE vs. questionnaire in IMPACT) and the methodologies (i.e. IMPACT was an online survey in most countries and interviews were not spread evenly over the days of the week) differ. In addition, it cannot be predicted how the changes in the methodology influence the results in terms of an over- or underestimation of cash usage.

Nevertheless, IMPACT gives a view of possible changes in the payment attitude of consumers and their payment behaviour in the euro area countries. The survey was conducted online, except in Cyprus and Malta where the survey was conducted over the telephone. The target for the sample size was to achieve 1,000 interviews in each country, except in Malta, Cyprus and Luxembourg where it was 500. A total of 17,779 persons were interviewed in the last two weeks of July. The weighting model elaborated for SPACE was applied to the online sample of the IMPACT survey.

Results for the euro area as a whole

Respondents were asked how they made their most recent payment. Looking at the most recent payment made at the three POS and P2P locations where most transactions were carried out, cash was used to settle 38% of the transactions at supermarkets, 57% of the transactions in small shops for day-to-day items, and 63% of the transactions at restaurants, bars and cafés.

Respondents were also asked if other instruments were accepted when they paid by cash, and if cash was accepted when they had not paid with cash. In total, 84% of the respondents who paid with cash responded that other payment instruments, such as cards, were also accepted at the POS and when making P2P payments. Of those who paid with cards, 9% declared that cash was usually not accepted where they had paid, and 7% said that cash was temporarily not accepted because of the coronavirus pandemic. Respondents were also asked if they had experienced a situation in which they could not pay with cash since the start of the pandemic. 8% of the respondents stated that they had not paid with cash since the start of the pandemic, but of those who had been paying with cash, slightly over 35% said that they had experienced a situation in which cash was not accepted (17% rarely, 13% sometimes and 5% often).

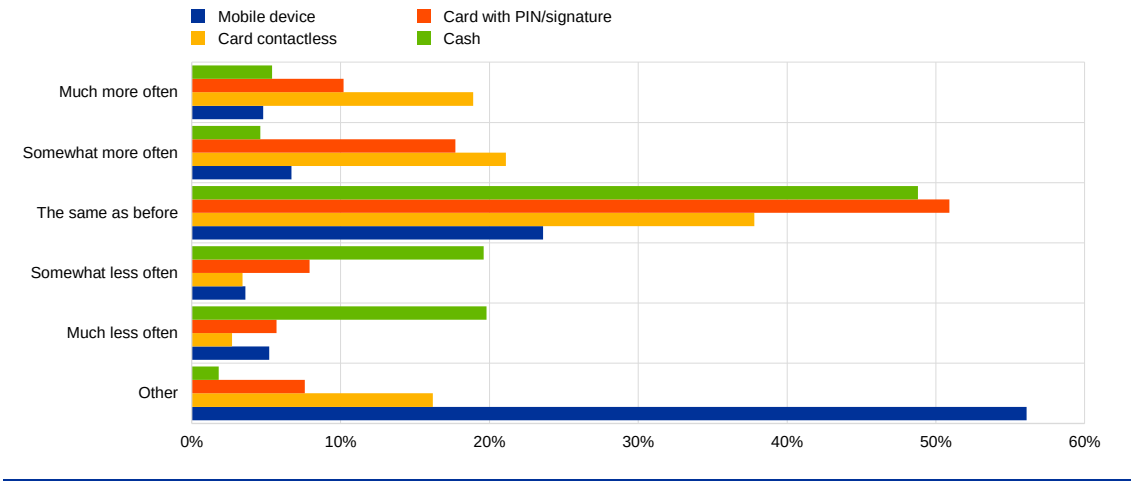
Almost half of the respondents reported that they used cards and cash in a similar way as they did before the start of the pandemic. However, 40% said they were using contactless payment cards more often, and an equal percentage said they used cash much less often or somewhat less often.

Results at the country level

Great variation exists at the country level: in Ireland, Belgium and Spain, more than half of the respondents said that they were paying less with cash since the pandemic, whereas in Estonia, Latvia and Malta less than 25% said the same. Finally, payments with a mobile device (e.g. a phone or a smart watch) did not show a breakthrough, because over half (53%) of the respondents said that they did not have such a payment instrument (see Chart A).

Chart A

Use of payment methods during the pandemic

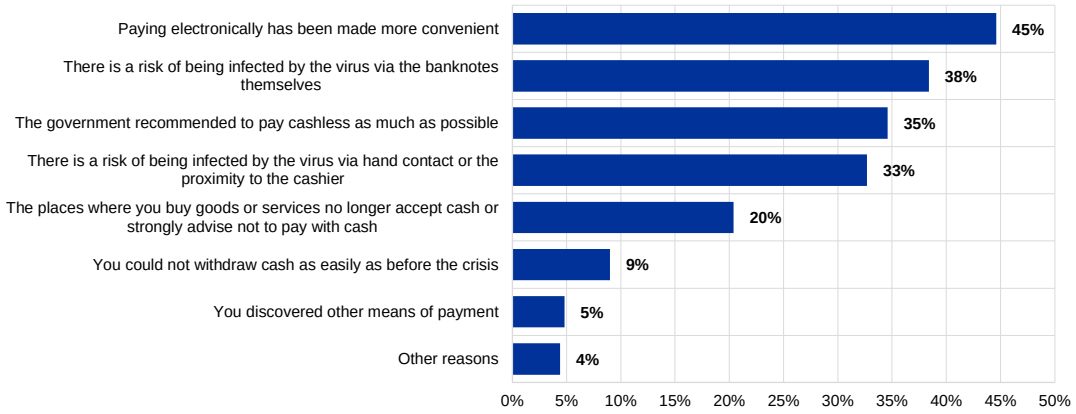


Source: ECB (2020).
Notes: Data are for the euro area (all 19 countries). Question: Now, think about how you have been paying recently, after certain restrictions have been lifted, without considering the frequency of your purchases, compared to the situation before the coronavirus crisis started, are you using the following payment instruments more or less often? The answer option “Other” includes “I do not have this payment instrument” and “Don’t know / Prefer not to say”.

Respondents paying less with cash since the start of the pandemic were asked to indicate the reasons why they paid less with cash. From a given pre-defined list (see Chart B), the most often mentioned reason was the fact that paying electronically had been made more convenient (45% of respondents mentioned this reason). The respondents were not asked in which way the convenience had increased, but it is likely that the better possibilities to pay contactless and the increase in the limits for contactless payments have contributed to this. For example, in most of the euro area countries the limit for contactless payment was raised to €50.[21] The second most mentioned reason for the change in payment behaviour with respect to cash was the fear that there is a risk of infection from banknotes, which was mentioned by 38% of the respondents. This share was particularly high in Spain and Portugal (above 50%). Moreover, concerns about hand contact with the cashier were also mentioned frequently (33%). One-third of the respondents said that they followed the government recommendation to pay less with cash. Meanwhile, the Eurosystem has made it clear that the risk of getting infected by handling banknotes is not significant if compared with other objects people touch in daily life.[22]

Chart B

Main reasons for changing payment behaviour during the pandemic



Source: ECB (2020).
Note: Data are for the euro area (all 19 countries).

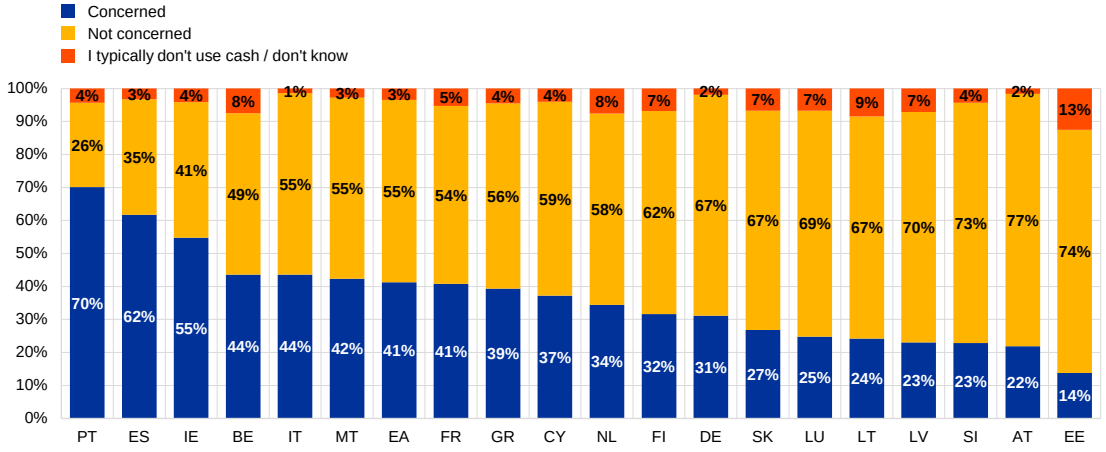
Nevertheless, when asked about concerns about becoming infected while handling cash, 55% of the respondents declared that they were not concerned about the risk of getting COVID-19 from banknotes (here again, Portugal and Spain were the countries in which people were the most concerned).

21 During the coronavirus crisis, the European Banking Authority called on traders to make use of the exemption for strong customer authentication up to €50 as allowed under Commission Delegated Regulation (EU) 2018/389.

22 See, for example, the blog post by Fabio Panetta, member of the Executive Board of the ECB, "Beyond monetary policy – protecting the continuity and safety of payments during the coronavirus crisis", 28 April 2020.

Chart C

Concerns about getting COVID-19 when touching banknotes or coins



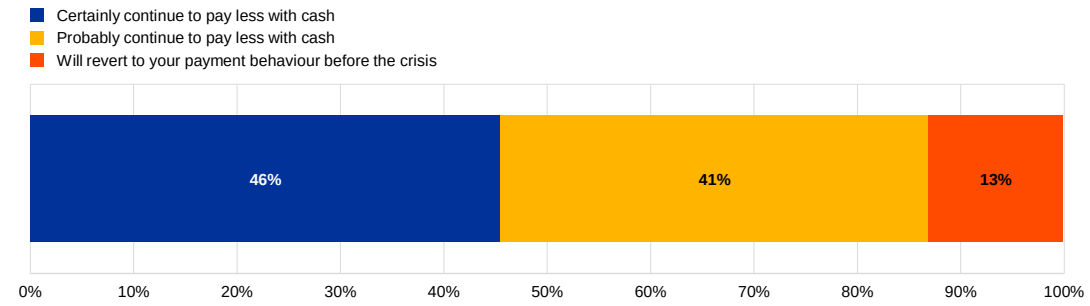
Source: ECB (2020).
Notes: "EA" refers to the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

87% of the respondents who stated that they had paid less in cash (i.e. 40%; see Chart A) said that they would continue to do so when the coronavirus crisis is over, of which 46% said that they were certain that they would continue to do so (see Chart D). Although the impact of the change in payment behaviour caused by the pandemic cannot be estimated in terms of the decline in the share of cash for POS and P2P payments based on these survey data, the results do suggest that the pandemic has accelerated the decline in cash usage in all euro area countries. The magnitude of the effects varies from country to country and is likely to depend on the severity of the pandemic-related restriction measures, the existing payment infrastructure, government policies and recommendations, the ease of access to cash and the acceptance of cash, as well as preferences and habits.

The findings of the 2020 national payment diary survey conducted in the Netherlands support the view that the COVID-19 pandemic has accelerated the shift from the use of cash to the use of non-cash payment instruments for payments at the POS and for P2P payments (De Nederlandsche Bank, 2020).

Chart D

Payment behaviour expected after the pandemic



Source: ECB (2020).
Note: Data are for the euro area (all 19 countries).

2.2 Daily average of POS and P2P payments

2.2.1 Average number of POS and P2P transactions per person per day

In 2019, euro area citizens made 1.48 POS and 0.09 P2P transactions per day on average, which is equivalent to 11 transactions per person per week (see Chart 3).[23] At the country level, the average number of POS and P2P transactions per day ranged from 1.2 transactions in Estonia to slightly more than 1.9 transactions in Portugal and Greece.

The average number of POS and P2P transactions per day is almost the same as the one reported in SUCH.[24]

When splitting the euro area average of 1.6 POS and P2P transactions per person per day by payment instrument, it can be estimated that on average in the euro area consumers made 1.1 cash transactions and 0.4 card transactions per person per day. The Greeks, Italians and Portuguese made on average 1.6 cash transactions per day, while the Dutch, the Estonians and the Finnish made only 0.6, 0.5 and 0.5 cash transactions, respectively.

In the countries with a relatively low average number of cash transactions per person per day, the number of card transactions was relatively high. Indeed, this was the case for the Netherlands, Finland and Luxembourg, but less so for Estonia, since this is the country with the lowest number of transactions overall. Countries with a particularly low average number of card transactions per person per day were Malta and Spain, but also Portugal, Germany, Italy, Cyprus and Austria were below the euro area average.

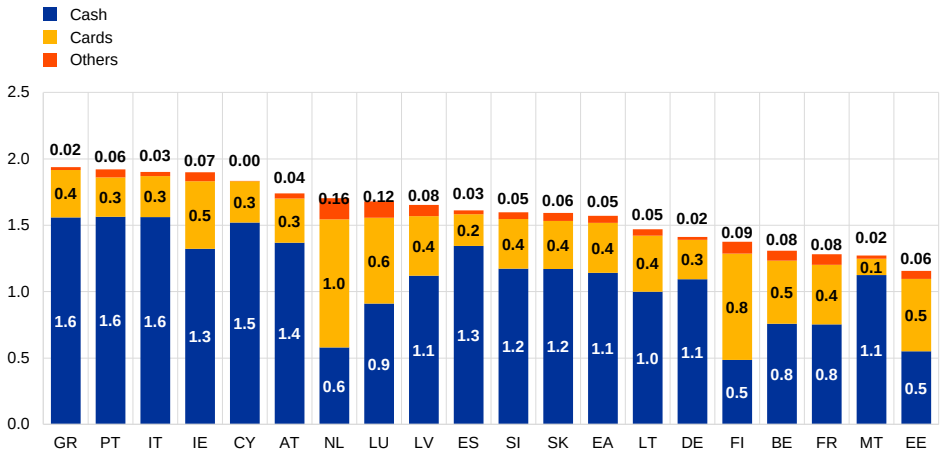
In no country did other payment instruments (other than cash or cards) play a significant role in terms of the average number of transactions per person per day.

[23] 72% of the respondents reported at least one POS and P2P payment in the diary, and 16% of the respondents reported at least one online, mail or telephone purchase.

[24] In SUCH, POS and P2P transactions were presented separately, with 1.57 POS payments and 0.06 P2P payments. However, in SUCH, POS payments included internet payments (although they were negligible), while in SPACE internet payments were not part of POS payments, but were recorded separately.

Chart 3

Average number of POS and P2P transactions per person per day, per country and per payment instrument

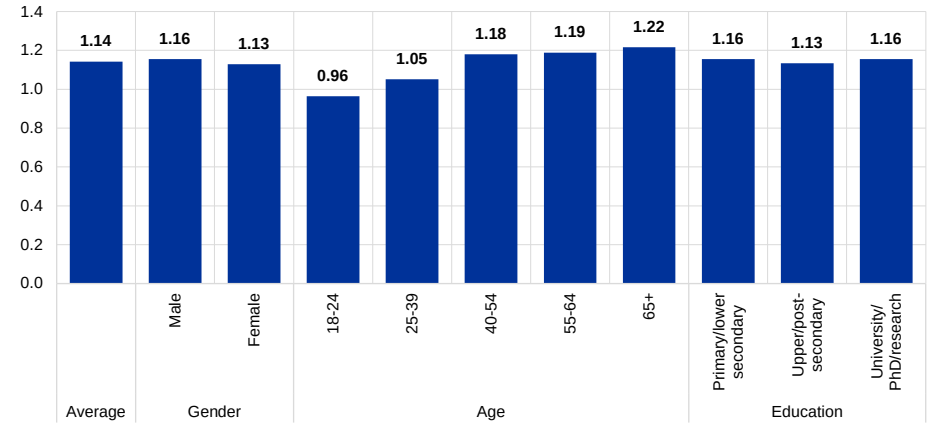


Sources: Calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: "EA" refers to the euro area (all 19 countries).The category "Others" includes direct debits, credit transfers, bank cheques, mobile phones (e.g. parking app), crypto-assets and other and the answer option "Don't know".

The consumer characteristics, such as gender, age and level of education, may influence the choice of a particular payment instrument for settling POS and P2P transactions. No significant differences in the number of transactions (using cash and cards) were observed between male and female consumers. The number of transactions made using cash increased with age, for instance consumers aged 65 and older were using cards the least (they made on average 0.29 card payments per day). Respondents with a higher education level were more likely to use cards for payments.

Chart 4

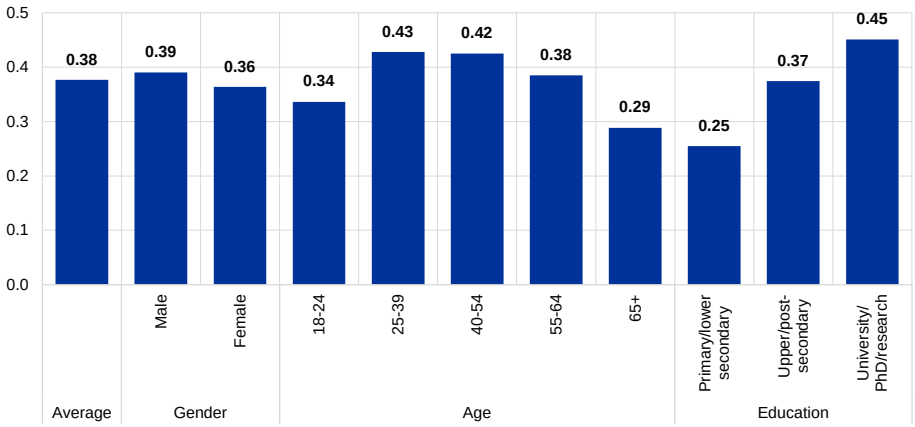
Average number of cash POS and P2P transactions



Sources: Authors' calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).

Chart 5

Average number of POS and P2P transactions made using cards



Sources: Authors' calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).

2.2.2 Average value of POS and P2P payments per person

Taking cash and non-cash payments together, the average value of one payment was €25.55 (€24.48 for a POS payment and €42.91 for a P2P payment), (see Chart 6). 11 of the 19 euro area countries had an average transaction value between €20 and €30, but there were extremes on either side of this bandwidth. The average value of a transaction across all means of payment varied, from €15.31 in Portugal, €17.44 in Latvia and €18.52 in Spain to €32.49 in Belgium, €38.34 in Austria and even €53.77 in Luxembourg.

As regards cash payments, Austria was the country with on average the highest value of a cash transaction (€28.48), followed by Ireland (€25.59) and Luxembourg (€24.15), while on the other side of the spectrum the average cash transactions were lowest in Portugal (€10.17), France[25] (€12.95) and Spain (€14.56).

For card transactions, the difference in the average value between countries was much larger than for cash, with Luxembourg (€78.33) having by far the largest average card payment, followed at some distance by Austria (€57.07) and Malta (€56.71). Latvia (€16.35), Estonia (€21.95) and Lithuania (€22.92) had the lowest average value of card payments.

The average value of a transaction has been corrected for purchasing power parity (PPP) in the euro area (see Chart 7). The results show that proportionally to the cost of living in their country, the Luxembourgish, the Greeks and the Lithuanians spent the most on POS and P2P single transactions (irrespective of the payment instrument used). The Portuguese and Spanish were at the other end of the spectrum. The Lithuanians also spent the highest amounts per transaction using cash, whereas the Dutch used it the least, followed by the Portuguese and the French. Regarding card

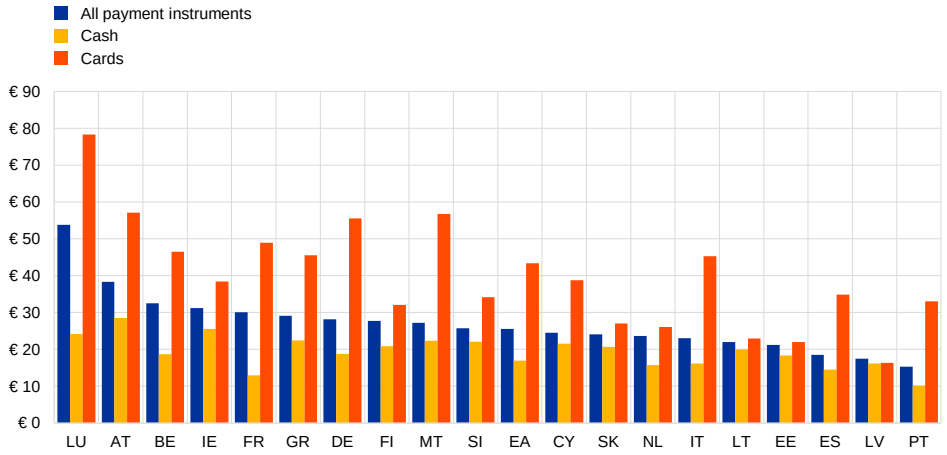
[25] See Bounie D. et al. (2018).

payments, the Maltese, the Greeks and the Luxembourgish had the highest average value of a single transaction (the Maltese were also those with the smallest number of card transactions per day, which means that cards are used less but for higher value purchases).

The number of transactions and average value of a transaction resulted in an average total of €40 spent per person per day for all POS and P2P transactions in the euro area.

Chart 6

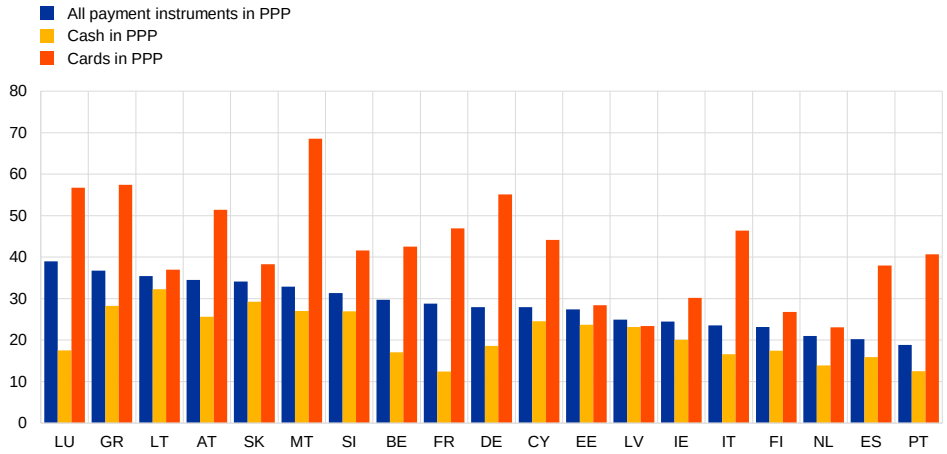
Average value of one POS and P2P transaction before adjusting for purchasing power parity



Sources: Calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: "EA" refers to the euro area (all 19 countries). The category "Others" is not shown because of the low frequency and high heterogeneity of the amounts reported.

Chart 7

Average value of one POS and P2P transaction adjusted for purchasing power parity



Sources: Calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Note: The category "Others" is not shown because of the low frequency and high heterogeneity of the amounts reported.

2.3 The use of contactless technology for card payments

Card payments have increased in all euro area countries between 2016 and 2019 (see Sub-sections 2.1 and 2.2). Since the introduction of cards that can be used contactless, i.e. without having to insert them into a payment terminal, card payments have in principle been made more convenient, which may have contributed to their increased use, separately from the general increase in card acceptance by merchants at the POS and for making P2P payments. With contactless technology one can pay with a debit card, credit card or an electronic device (e.g. smart watch, smart phone, etc.) by holding the card or device within a few centimetres of a payment terminal enabled with contactless technology. When paying contactless with cards, above a certain threshold amount, the personal identification number (PIN) is required. Additionally, the PIN can be required after a certain number of transactions per day or when a total amount is reached (e.g. after five transactions or when several transactions in a row equal a certain amount).[26] As the PIN still has to be entered manually into the payment terminal, there are still constraints on using contactless cards.

Physical contactless card payments represented 38% of all card payments (including contactless with or without a PIN[27]), with substantial differences among euro area countries, which may be the result of a different pace for rolling out contactless-enabled cards and terminals. The share of contactless payments in total card payments was the highest in Slovakia, with 77% of all card payments being contactless, followed by Greece (73%). In both countries, also in terms of value, the shares of contactless card payments in total card payments were the highest (74% in Greece and 68% in Slovakia). The share of contactless card payments in total card payments was the lowest in Belgium (16%).[28] In this country, contactless card payments also had the lowest value, with 12% of the total value of card payments, followed by France (18%). As shown in Charts 8 and 9, the occurrence of payments with the insertion of the card in the terminal increases with the value of payments to be made.

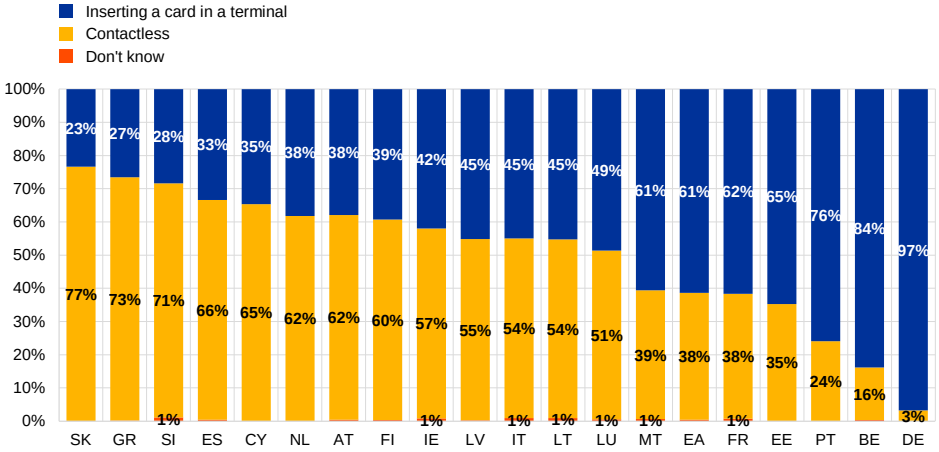
[26] See Article 11 of Commission Delegated Regulation (EU) 2018/389 of 27 November 2017 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication.

[27] Excluding Germany, in the 18 other euro area countries contactless card payments accounted for 50% of all card payments.

[28] It should be recalled that the German results are for 2017. Data of the leading debit card scheme in Germany show that in 2019 this share is increasing rapidly and that around 27% of the debit card transactions for this specific card scheme were carried out contactless.

Chart 8

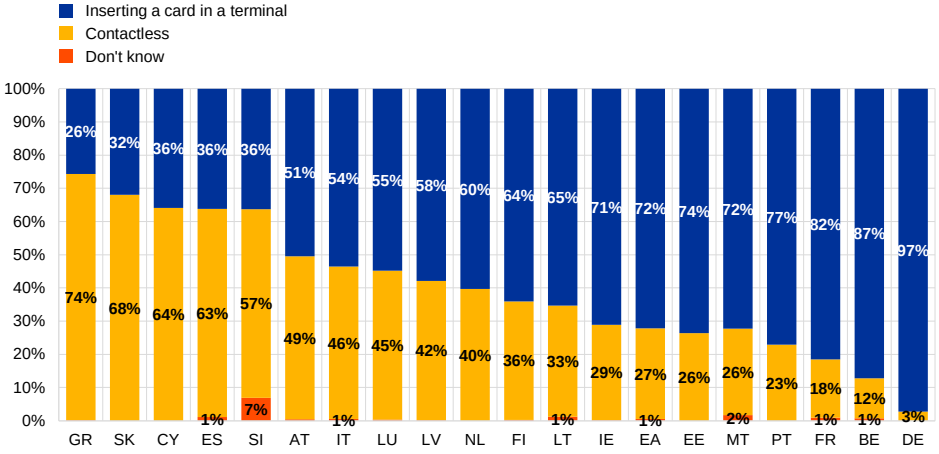
Card payments (number of transactions)



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: "EA" refers to the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

Chart 9

Card payments (value of transactions)



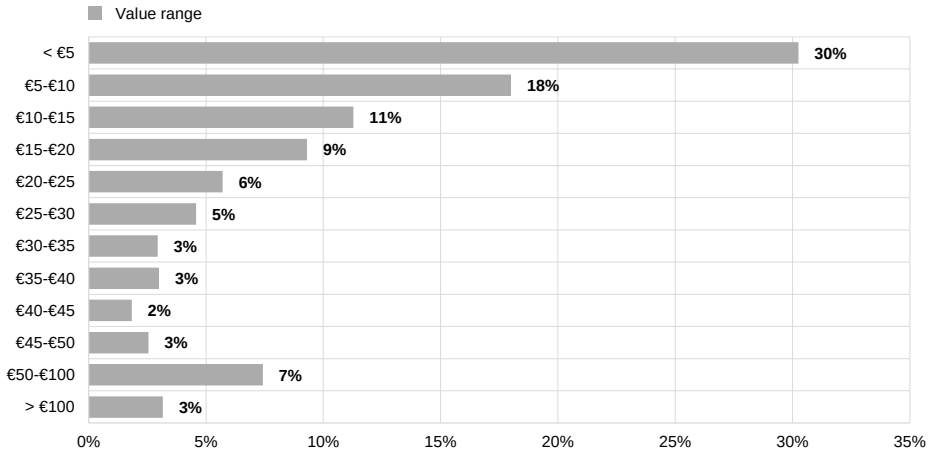
Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: "EA" refers to the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

2.4 Total number of POS and P2P transactions per value range and payment instrument

In the study, 60% of the POS and P2P transactions were made for a value below €15. High-value payments (above €100) accounted for only 3% of all transactions.

Chart 10

POS and P2P payments per value range

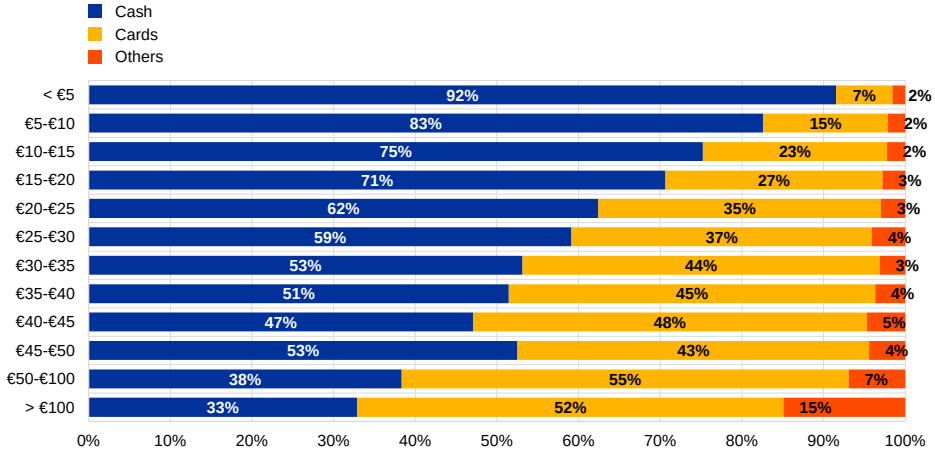


Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

As shown in Chart 11, payments in cash decrease relative to cashless payments as the payment amount increases. These results are consistent with predictions from theoretical models and empirical evidence from other developed countries (Whitesell, 1989; Klee, 2008; Bouhdaoui and Bounie, 2012; Arango, Huynh and Sabetti, 2015; Bagnall et al., 2016). As Moracci (2020) has already observed for SUCH data, cash payments in the euro area seem to be slightly convex with regard to the payment amount. An explanation for the discontinuity observed for amounts between €45 and €50 might be the influence on payment behaviour of the denominational structure of euro banknotes, together with the common banking practice of using certain denominations for ATM withdrawals (Shy, 2020; Van Hove, 2020). For high-value payments, credit transfers were also used quite often (6% of the transactions of a value above €100).

Chart 11

Number of transactions per value range and payment instrument



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). The category “Others” includes the following payment instruments: mobile phone, bank cheque, credit transfer, direct debit, other and “Don't know”. Due to their low frequency of use, these instruments have been grouped into a single category. Percentages may not add up to 100% due to rounding.

2.5 Total number and value of POS and P2P transactions by place of purchase and payment instrument

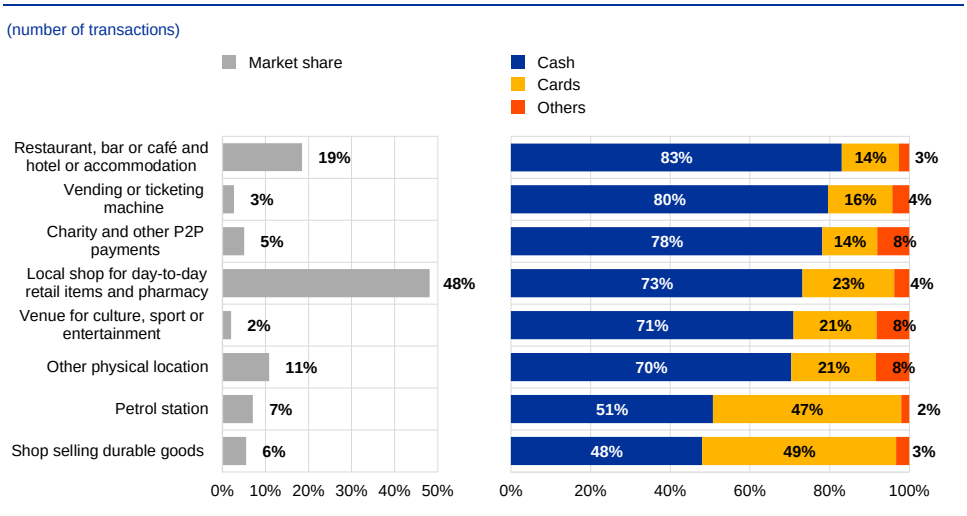
In 2019, euro area consumers went shopping primarily to local shops for day-to-day retail purchases (48%). This sector includes supermarkets, drugstores, small shops for day-to-day items, pharmacies and purchases made on the street or at a market (see Chart 12 left-panel). Transactions in restaurants, bars and cafés and hotels and accommodation came second (19%). Other physical locations (11%) and petrol stations (7%) also had a non-negligible share of the total number of transactions. Three out of the four most popular locations are the same as those of the 2016 study (i.e. other physical locations had a lower share in the total number of transactions).

In all euro area countries, most of the transactions were carried out in local shops for day-to-day retail purchases. However, large differences were observed among countries as regards visits to restaurants, bars and cafés: these accounted for 9% of all POS and P2P transactions in Lithuania, 10% in Latvia and in Slovakia, compared with 22% in Italy, 26% in Spain and 34% in Portugal. This illustrates the different lifestyles across Europe.

Although SPACE shows that, in relation to total turnover, cash was used most to pay at the POS and for making P2P payments, the picture by place of purchase varies considerably: 83% of the transactions in restaurants, bars and cafés and for hotels and accommodation were made using cash, whereas this share was only 48% in shops selling durable goods (there, the share of cards was higher than that of cash) (see Chart 12 right-panel).

Chart 12

Payments by place of purchase (left-panel) and by place of purchase and payment instrument (right-panel)



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

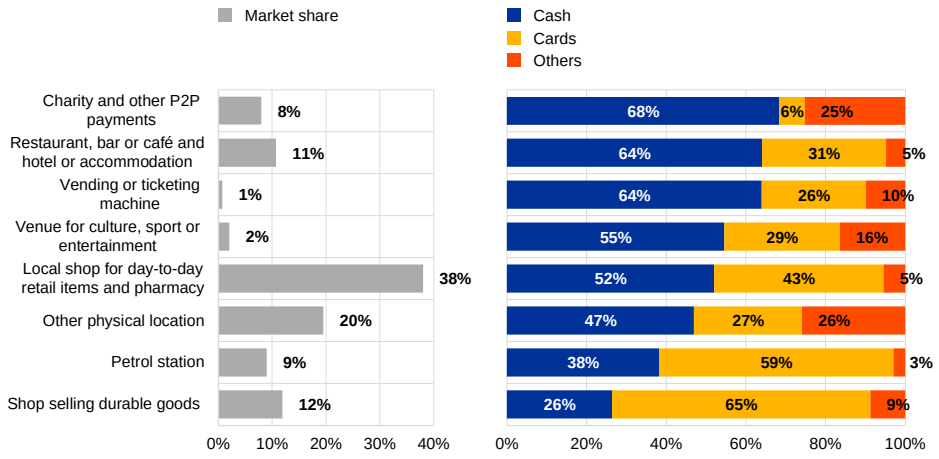
Comparing the total value with the total number of transactions shows that some places of purchase had a higher per-transaction value: for example, shops selling durable goods accounted for 6% of the number of transactions and 12% of their total

value. In almost all sectors, the share of cards is larger in terms of value than in terms of transactions. Within the category “Other payment instruments”, bank cheques were the most used payment instrument when paying at a venue for culture, sport or entertainment. This might point to an erroneous understanding of what the payment instrument is (see Chart 13 right-panel).

Chart 13

Purchases by sector (left-panel) and by sector and payment instrument (right-panel)

(value of transactions)



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Notes: Data are for the euro area (all 19 countries). Percentages may not add up to 100% due to rounding.

3 Remote payments

After having recorded their POS and P2P payments in the diary, the survey respondents were asked to register all online (i.e. using the internet), telephone and mail order purchases made during the day, the type of product or service they paid for and the payment instrument or payment method they used for paying.[29] With this information, estimates of the number and value of the online payments were produced, per payment instrument and product type. The results are detailed in Sub-section 3.1.

In a following section of the diary, respondents were requested to report the bill payments (i.e. recurring payments such as utility or invoice payments) made during the last seven days. Information on the bill type, the amount and the payment instrument or payment method used was collected. The results were used to give an overview of the payment instruments and methods mostly used to carry out these payments. The detailed results are given in Sub-section 3.2.

The figures in this section include all euro area countries except for Germany owing to a lack of data comparability.

3.1 E-shopping, telephone and mail orders

3.1.1 Total number and value of online, telephone and mail purchases per payment instrument and their relative share per country

In 2019, euro area consumers made 12 billion online purchases amounting to €834 billion (see Table 5). Taking POS and P2P payments (see Section 2) and online purchases (Sub-section 3.1) together, which are commonly referred to as payments made at the point of interaction (POI), the share of online purchases in payments at the POI was 7% in terms of volume and 17% in terms of value.

The most commonly used payment instrument for making online purchases was payment cards. Euro area consumers made 6 billion card payments worth €396 billion. This was followed by 3 billion payments using an e-payment solution (e.g. PayPal, Sofort, Afterpay) worth €194 billion and 1 billion payments using credit transfers with a value of €143 billion. Other payment instruments used by consumers for making online purchases, which include direct debits, cash, bank cheques, gift

[29] Although the SPACE survey included online, telephone and mail orders as one category of remote purchases, the lion's share of such purchases is accounted for by online purchases. Therefore, the remainder of this section only refers to online purchases, but these also include telephone and mail orders.

cards and crypto-assets, accounted for 2 billion payments with a value of €100 billion.[30]

Table 4

Total number and value of online purchases

	Number (in billions)	Value (in € billions)
All payment instruments	12	834
Cards (debit/credit)	6	396
E-payment solutions	3	194
Credit transfers	1	143
Cash	0	22
Others	1	78

Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Totals may not add up due to rounding.

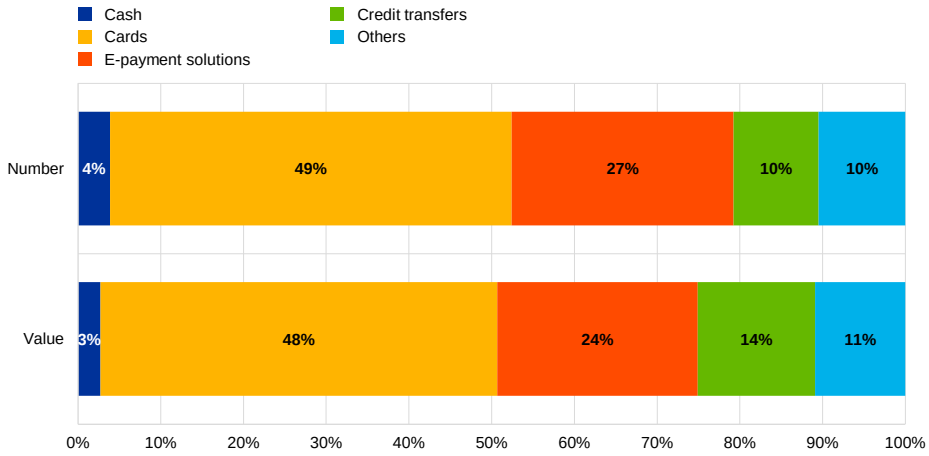
The SPACE results show that in terms of the number of transactions, card payments represented 49% of all online payments, followed by e-payment solutions, which accounted for 27% of all online payments. As regards e-payment solutions, PayPal was used most often in all countries but Estonia, Lithuania, Finland and the Netherlands. Credit transfers were used in 10% of the payments related to online purchases (see Chart 14). Payment instruments which require physical contact to be enabled (such as cards requiring card readers for paying online, cards using contactless technology or cash) were sometimes used when the payment was made, e.g. upon delivery of online purchases or for takeouts.

Contrary to POS and P2P payments, which show a large difference in the share of each payment instrument depending on the number or value of the payment, for online purchases the payment instrument usage in terms of total value shows similar results to the volume figures: cards accounted for 48% of the total value of payments, while e-payment solutions accounted for 24%. The share of credit transfers in the total value of online payments was 14%; credit transfers appear to be used for higher value purchases.

[30] Due to their low frequency of use, these instruments have been grouped into a single category together with “Don’t know / no answer”.

Chart 14

Online purchases per payment instrument (in terms of the number and value of transactions)

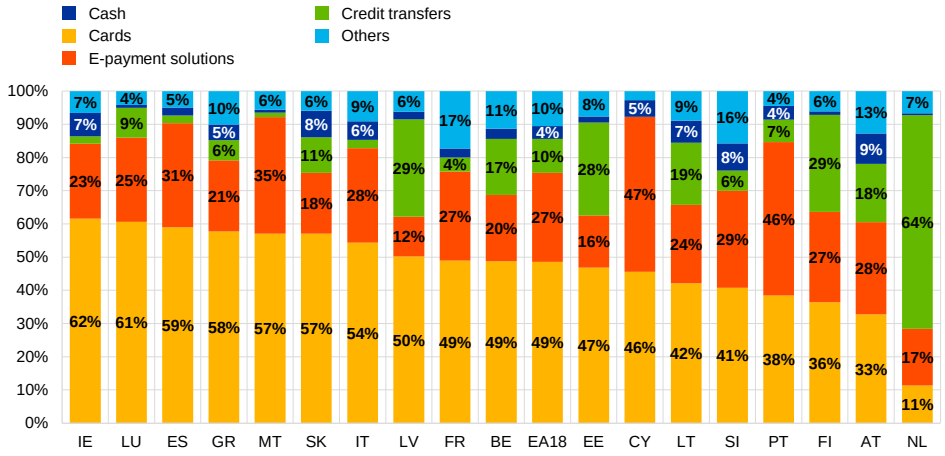


Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: The data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. The category "Others" includes gift cards or vouchers/loyalty points, crypto-assets, bank cheques, direct debits and the answer options "Other" and "Don't know".

At the country level, results show substantial variations as regards the most used payment instruments (see Charts 15 and 16). Cards accounted for more than half of all payments in Ireland, Luxembourg, Spain, Greece, Malta, Slovakia, Italy and Latvia. In two countries, e-payment solutions accounted for the largest part of payments: Cyprus (47%) and Portugal (46%). The lowest use of e-payment solutions was reported in Latvia (12%), Estonia (16%) and the Netherlands (17%). The share of credit transfers in online payments was noticeably high in the Netherlands (64%). Also in Estonia, Latvia and Finland, credit transfers were used more often than in any other country covered by SPACE. It should be recalled that online banking solutions that rely on credit transfers for making online payments are popular in these countries, like banklink in Latvia, Estonia and Finland or iDEAL (which are accounted as credit transfers in the Dutch national survey).

Chart 15

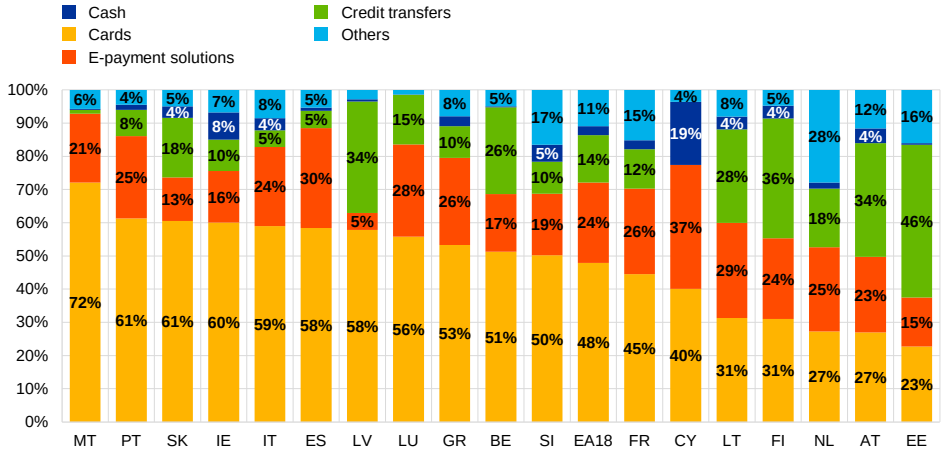
Online purchases per payment instrument and country (number of transactions)



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

Chart 16

Online purchases per payment instrument and country (value of transactions)



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

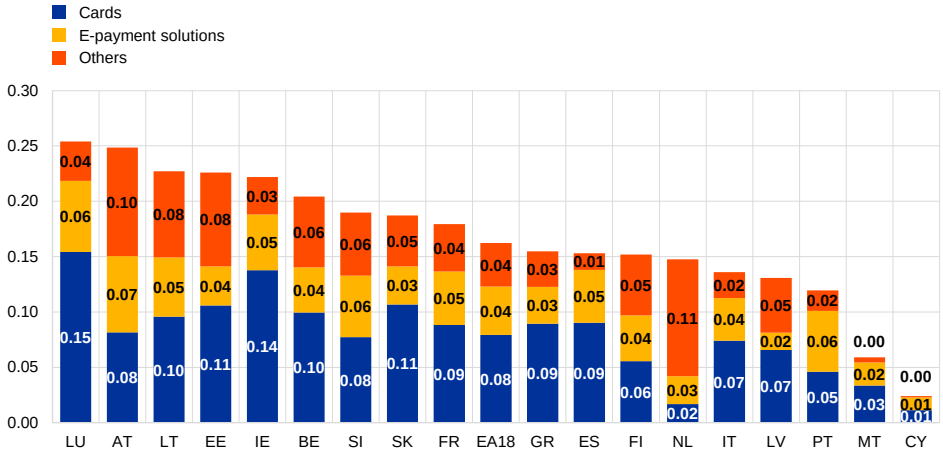
3.1.2 Average number and value of online purchases per person per day

In 2019, euro area consumers made 0.16 online purchases per day on average (i.e. slightly more than one purchase per week). Comparing online payments with POS and P2P payments (see Section 2), it can thus be concluded that in 2019 respondents made ten times fewer online transactions than POS and P2P transactions (1.57). The results for online purchases (see Chart 17) show substantial disparities in payment behaviour across euro area countries: the number of purchases per day ranged from 0.25 in Luxembourg and Austria, 0.23 in Lithuania and Estonia (i.e. almost one transaction every four days), to 0.02 in Cyprus (i.e. one transaction every 50 days) and 0.06 in Malta (i.e. one transaction every sixteen days). In these

two countries, the total number of transactions reported is very small, thus the results have to be interpreted with caution.

Chart 17

Average number of online transactions per person per day, per country and per payment instrument

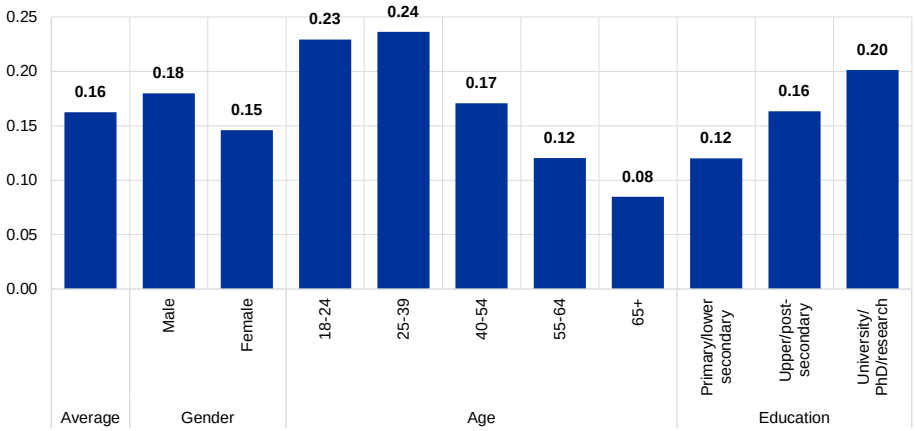


Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results.

A look at sociodemographic variables shows that male respondents, younger respondents and highly educated respondents made most online purchases (see Chart 18).

Chart 18

Average number of online transactions and sociodemographic variables



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results.

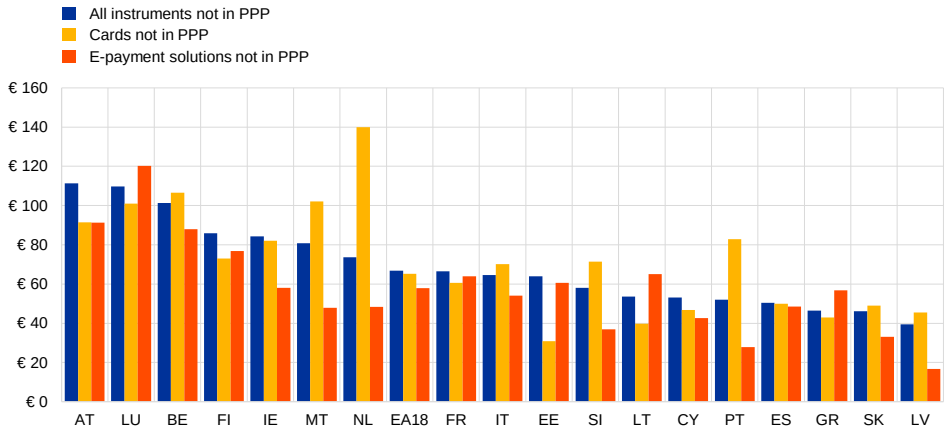
In the euro area, online payments had an average value of €66.86 in 2019. The average value of online payments was thus two to three times higher than the average value of POS and P2P payments in the same period. Considering that respondents reported on average 0.16 online payments per day, this means that they spent on average €10.86 per day on online transactions.

There are also great variations between countries in terms of the average value of online transactions. The average value of an online payment ranged from €111.29 in Austria, €109.72 in Luxembourg and €101.25 in Belgium to €39.51 in Latvia, €46.16 in Slovakia and €46.51 in Greece (see Chart 19).

As part of the differences in the value of online transactions could be the result of differences in purchasing power between euro area countries, the average value of an online purchase has also been calculated taking into account these differences (see Chart 20). The results show that Austria is the country with the highest average value for online payments (e.g. considering all payment instruments), followed by Malta. The correction for purchasing power also has a relatively strong effect on the average value of an online transaction in Lithuania, making it one of the countries with the highest average values for online payments and giving Luxembourg and Ireland a lower average value.

Chart 19

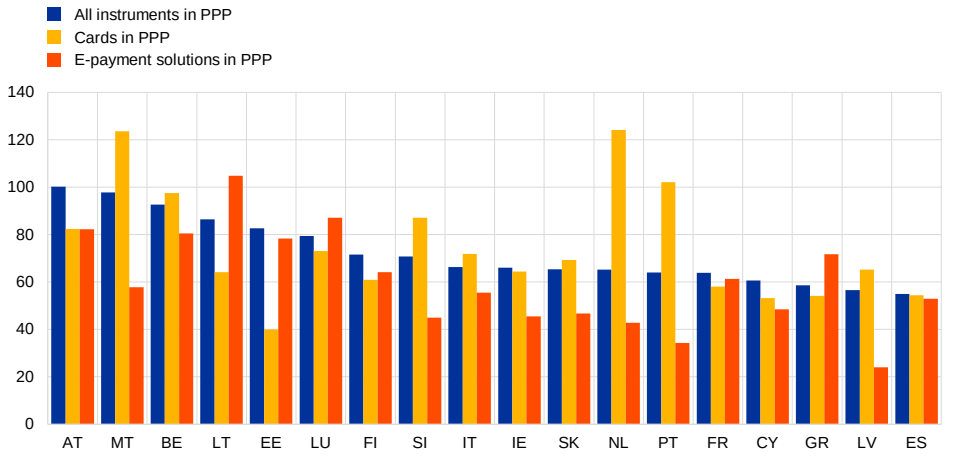
Average value of online payments per country and payment instrument before adjusting for purchasing power parity



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results.

Chart 20

Average value of online payments per country and payment instrument adjusting for purchasing power parity



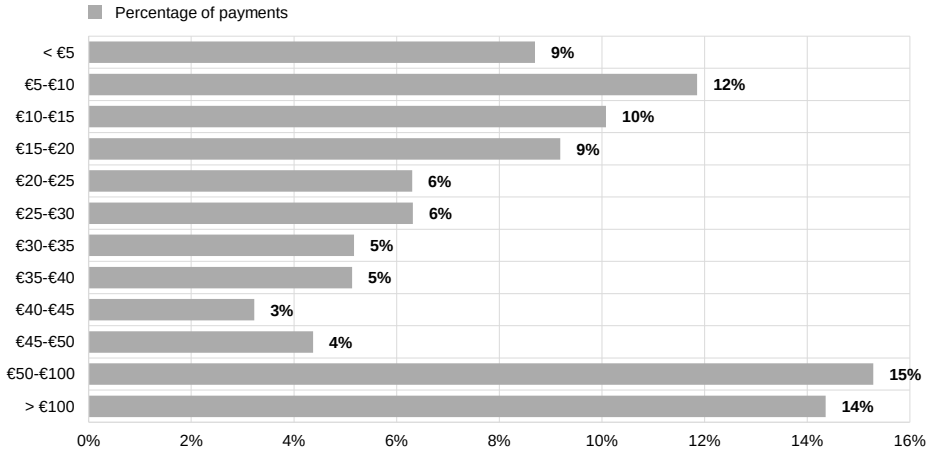
Sources: Authors' calculation based on data from ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Eurostat.

3.1.3 Total number of online purchases per payment instrument and value range

The share of online payments with a low value is considerably lower than for payments at the POS and P2P transactions (see Section 2). Payments for online purchases below €15 accounted for 31% of all transactions, compared with 60% for POS and P2P transactions. Online purchases above €50 accounted for 30% of all online transactions, compared with slightly more than 10% for POS and P2P transactions above €50 (see Chart 21).

Chart 21

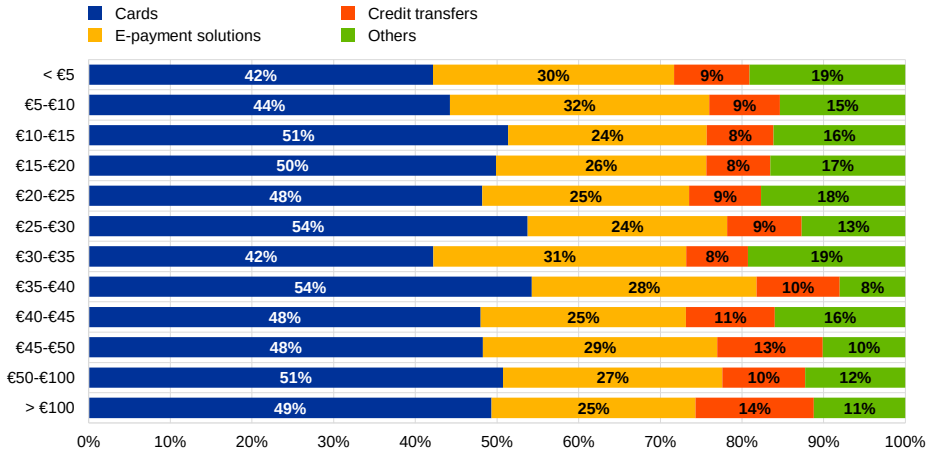
Number of payments for online purchases per value range



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

Chart 22

Payments for online purchases per payment instrument and value range



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

The way people pay online is less influenced by the price of the product than for POS and P2P transactions. While the share of using credit transfers slightly increased with the value of the product that was purchased, there was no clear pattern for the use of cards or e-payment solutions.

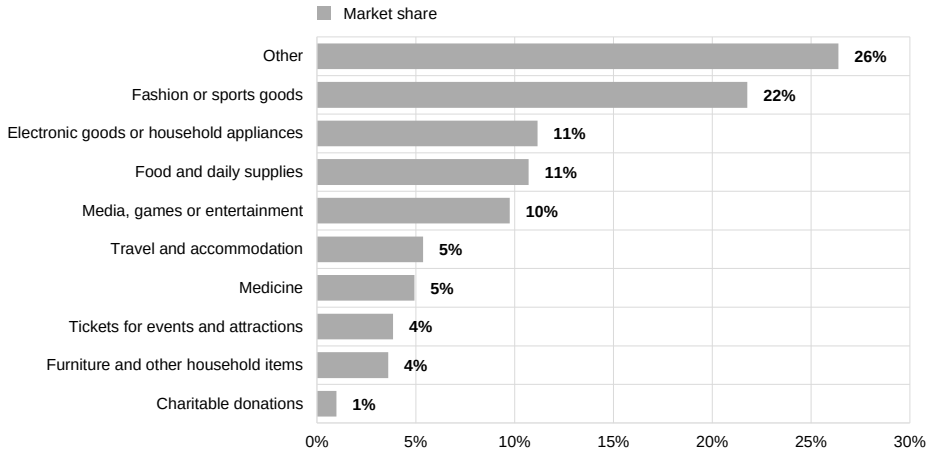
3.1.4 Total number and value of online purchases per payment instrument and product type

Just over one in five online transactions were for fashion or sports goods (22%), while electronic goods or household appliances and food and daily supplies each accounted for 11%. Another 10% of all online payments were for media, games or entertainment. None of the remaining categories with defined product types accounted for more than 5% of the total number of transactions. The category “Other” accounted for 26% of the number of payments made (see Chart 23).

Looking at the payment instruments used to pay for products purchased online, it appears that cards are in general the most used payment instrument for all types of products that consumers purchased and paid for online in 2019, except for charitable donations which were typically made using e-payment solutions (see Chart 24). Credit transfers were comparatively used the most for charitable donations and to pay for “Other” products. Crypto-assets (included in the chart under “Other” payment instruments) were used in less than 1% of the total transactions and represented less than 1% of their total value.

Chart 23

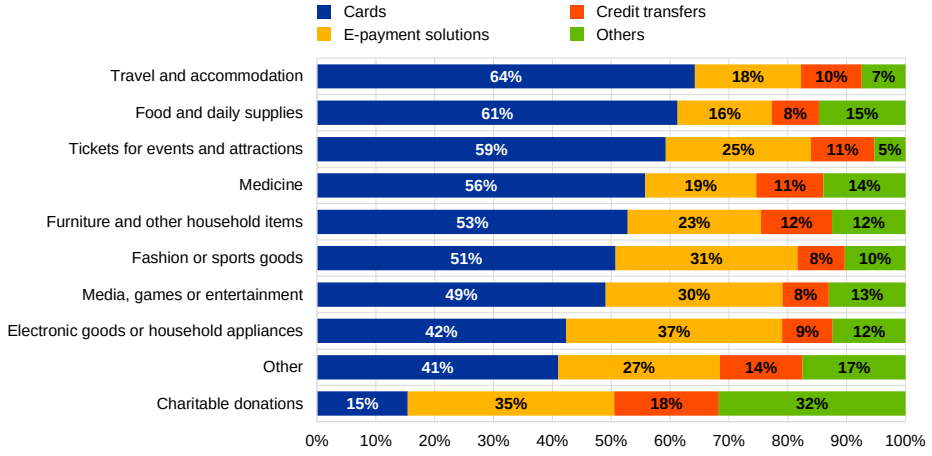
Number of online transactions per product type



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

Chart 24

Number of online purchases per product type and payment instrument used

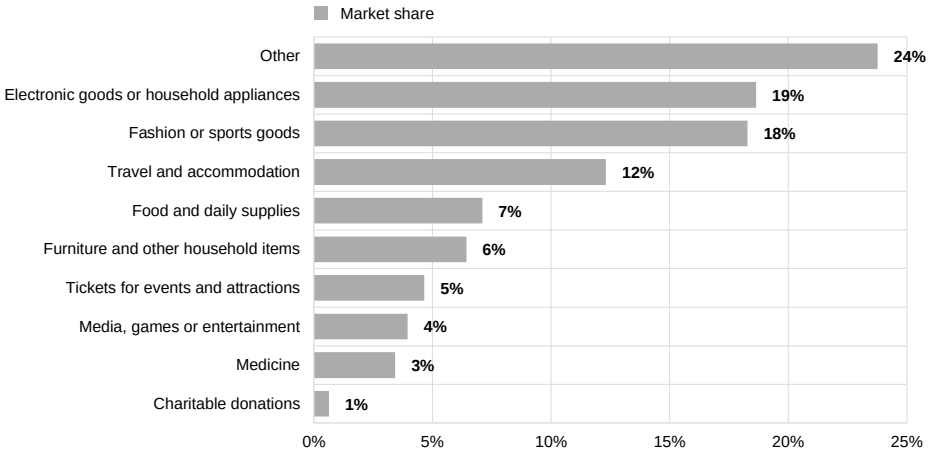


Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

As shown in Chart 25, also in value terms the largest shares in the total value of online payments related to electronic goods or household appliances (19%) and fashion or sports goods (18%). In general, as some products are by nature more expensive, this had an impact on the value spent on these goods: for example, electronic goods or household appliances accounted for 19% of the total value of transactions, but only represented 11% of all purchases. The opposite is true for food and daily supplies. For example, the home delivery of food is done relatively frequently, but the value of these transactions is comparatively low.

Chart 25

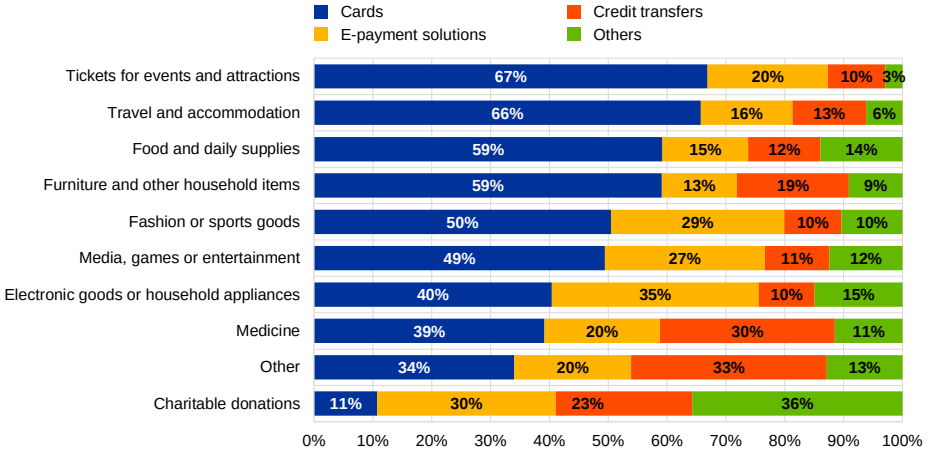
Value of online transactions per product type



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

Chart 26

Value of online purchases per product type and payment instrument used



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany because of the lack of comparability of the 2017 Deutsche Bundesbank payment behaviour study results with the SPACE results. Percentages may not add up to 100% due to rounding.

3.2 Bill payments and recurring payments in the euro area

3.2.1 Total number of bill payments per payment instrument and their relative share per country

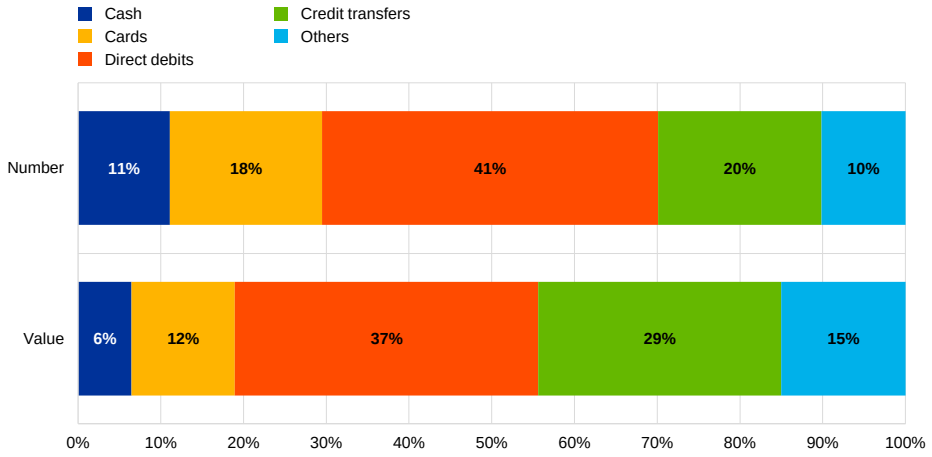
Respondents were asked to report any bill payment and recurring payment in the week prior to taking part in the survey. Bill payments and recurring payments relate to any type of payment for which a bill is issued, but generally refer to utility bills,

telephone bills, medical bills and other similar types of bills. The figures below include all euro area countries except Germany, for which data are unavailable.

Chart 27 shows that consumers most often used direct debits to make bill payments (41%), followed by credit transfers (20%), cards (18%) and cash (11%). Other payment instruments accounted for 10% of all bill payments. It appears that credit transfers were used for higher value payments, as their share increases from 20% in terms of the number of bill payments to 29% in value terms.[31]

Chart 27

Number and value of bill payments per payment instrument



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: The category "Others" includes bank cheques and the answer options "Other" and "Don't know". Data are for the euro area excluding Germany, for which data are unavailable. Percentages may not add up to 100% due to rounding.

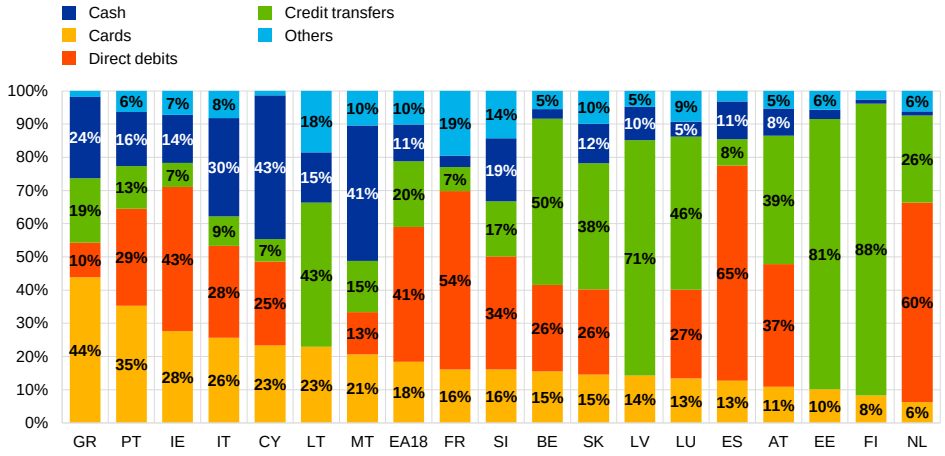
Chart 28 shows considerable variations in the country-level results. Direct debits were used in more than 50% of all bill and recurring payments in Spain (65%), the Netherlands (60%) and France (54%), and credit transfers in 50% or more of the payments in Finland (88%), Estonia (81%), Latvia (71%) and Belgium (50%). The wide use of credit transfers in the Baltics and in Finland can be explained by the high use of electronic invoicing in these countries. Moreover, the use of direct debits in general could be under-reported as, contrary to the other payment instruments which require an action from the payer, direct debits are passive, are automated and do not need to be pushed by the payer.

In two countries, cards accounted for more than one in three bill and recurring payments: Greece (44%) and Portugal (35%). At the other end of the scale, only 6% of such transactions in the Netherlands and 8% in Finland were settled using cards. As already observed in the SUCH study of 2016, cash is widely used for bill payments and recurring payments in a few countries: it represents 43% of the number of all bill and recurring payments in Cyprus, 41% in Malta, 30% in Italy and 24% in Greece, but just 1% in Finland and in the Netherlands.

[31] Because the frequency of the bill payments was not reported by respondents, it is not possible to extrapolate the survey data into annual expenditure.

Chart 28

Number of bill payments per payment instrument and per country



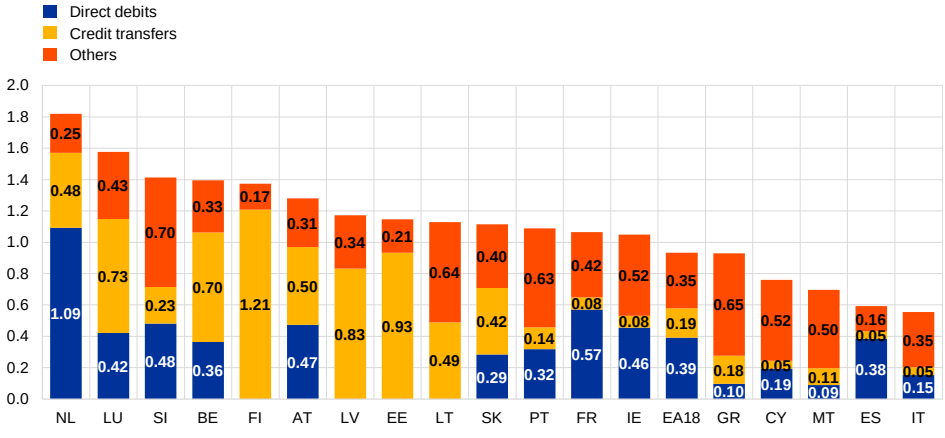
Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany, for which data are unavailable. Percentages may not add up to 100% due to rounding.

3.2.2 Average number and value of bill payments

In 2019, euro area consumers paid slightly less than one bill per week on average (0.93), ranging from 1.8 in the Netherlands and 1.6 in Luxembourg to 0.6 in Italy and Spain and 0.7 in Malta. The use of credit transfers or direct debits for paying bills differs significantly among countries. On average in the euro area, 0.4 bills were paid by means of direct debit per week and 0.2 by means of credit transfer. The average number of cash bill payments (included in the category “Others”) was 0.10 on average.

Chart 29

Average number of bill payments per person per week and per payment instrument



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Note: Data are for the euro area excluding Germany, for which data are unavailable.

The average amount of a single bill payment in the euro area countries included in SPACE was €160.83. It should be noted that bills covered a wide range of expenses (from rent to telephone bills). Because respondents were not asked to report the

frequency of the bill payments (e.g. annual, monthly or quarterly), the average value in actual terms in 2019 might be different from the figures reported by consumers in the survey.

3.2.3 Total number of bill payments per type

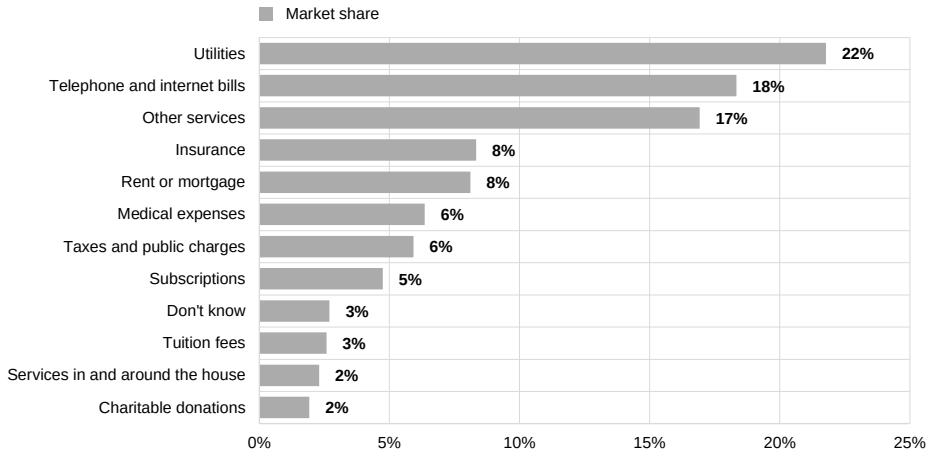
The largest number of transactions reported was for paying bills for utilities (22%), telephone and internet (18%) or other services (17%), i.e. services that are usually paid for regularly (often weekly or monthly). Categories accounting for lower shares were rent or mortgage (8%), insurance (8%), medical expenses (6%) and taxes and public charges (6%), (see Chart 30). Looking at all bill payments reported per country, Cyprus, Estonia and Malta reported the lowest number of tax and public charge bills, and Finland, Ireland, Lithuania, Luxembourg and the Netherlands the lowest number of tuition fee bills.

As regards the payment instrument used, cash had its highest usage for paying for services in and around the house and for charitable donations. Part of these expenses might also have been reported in the POS/P2P module. The high share of card payments for settling medical expenses (41%) suggests that these invoices are often paid at the medical practice (see Chart 31).

The sociodemographic variables show that 18-24 year-olds account for a higher proportion of transactions for telephone and internet bills than older age groups. Students and the unemployed also have a higher share of transactions for telephone and internet bills than other groups. Urban respondents account for a larger proportion of transactions for utility bills than consumers living in rural areas.

Chart 30

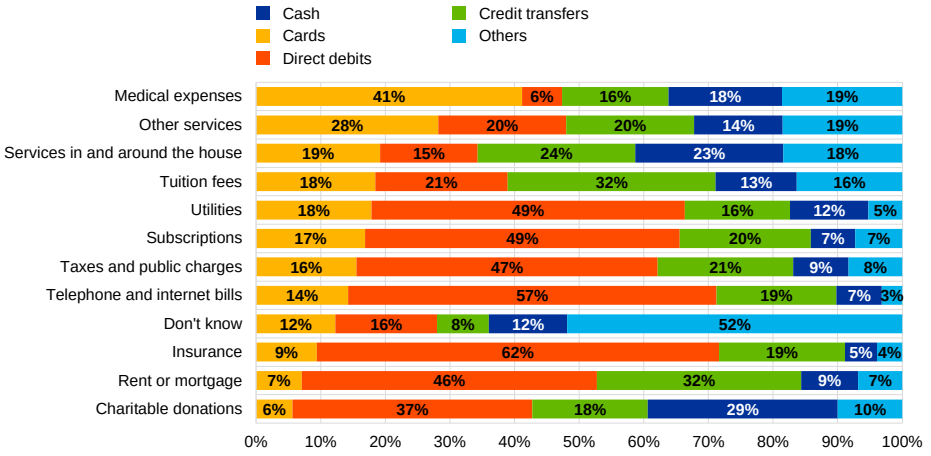
Shares of the main types of bill



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany, for which data are unavailable. Utilities (e.g. gas, electricity, water); insurance (e.g. health, car, home); taxes and public charges (e.g. paid to local authorities); subscriptions (e.g. magazines, sport clubs, streaming TV); services in and around the house (e.g. plumbing, painting, decorating); charitable donations (e.g. to the church, Red Cross). Percentages may not add up due to rounding.

Chart 31

Number of bill payments per type and payment instrument used



Sources: ECB (2019) and De Nederlandsche Bank and Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany, for which data are unavailable. Utilities (e.g. gas, electricity, water); insurance (e.g. health, car, home); taxes and public charges (e.g. paid to local authorities); subscriptions (e.g. magazines, sport clubs, streaming TV); services in and around the house (e.g. plumbing, painting, decorating); charitable donations (e.g. to the church, Red Cross). Percentages may not add up due to rounding.

3.2.4 Payment instruments used for specific bill payments

Respondents were also asked to state which payment instrument they use most often when paying for certain categories of bills (i.e. rent or mortgage, electricity and telephone), and if they were actually making the bill payment for themselves or rather for the household. This question attempted to cover possible gaps, as respondents might have found it difficult to recall bill payments made in the week before they reported and because some bills may be typically paid at a certain period of the year outside the period covered by the survey. The results presented here are not directly comparable with those of the payment diary presented in Sub-sections 3.2.1 to 3.2.3, as the euro area average figures include Germany and as direct debits and standing orders have both been put in the category “Automatically” (even though a standing order is a credit transfer).

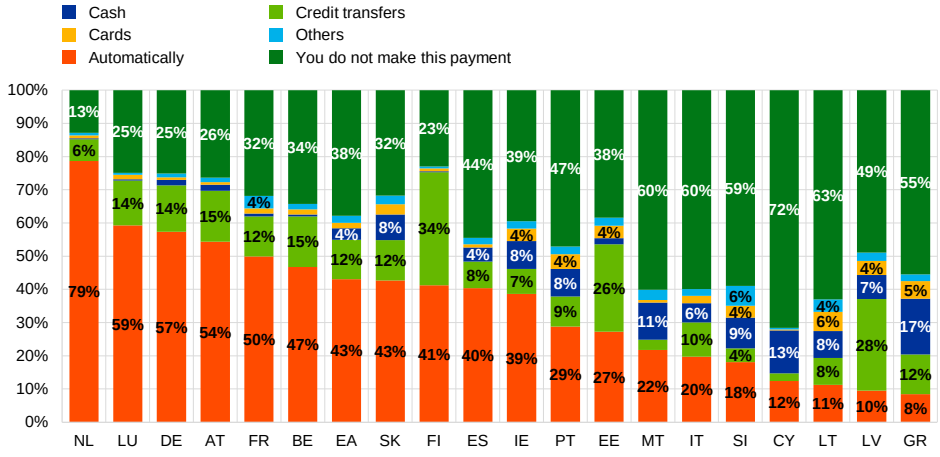
The results of the questionnaire are in the same range as those of the bill module of the payment diary: in the questionnaire 43% of the respondents reported that they pay their rent or mortgage automatically, while in the payment diary 46% reported using direct debits; the share for telephone bills was 69% in the questionnaire, as against 57% in the payment diary (see Charts 32 to 34).

In 2019, the three countries using mostly cash to pay for their rent or mortgage and electricity and telephone bills were Malta, Cyprus and Greece, which is consistent with the results of the SUCH study. The share of cash for paying rent or mortgages has substantially decreased in Slovakia (down from 15% in SUCH to 8% in SPACE) and in Latvia (down from 13% in SUCH to 7% in SPACE). The share of cash usage also declined significantly for paying telephone bills in Italy (down from 35% in SUCH to 16% in SPACE) and in Slovenia (down from 26% in SUCH to 16% in SPACE).

The high share of respondents stating that they did not make the rent or mortgage payment can be explained by the nature of the bill, which is made by only one person in the household (in comparison, all persons of the household may pay their own telephone bill) or is not paid at all if the property is owned.

Chart 32

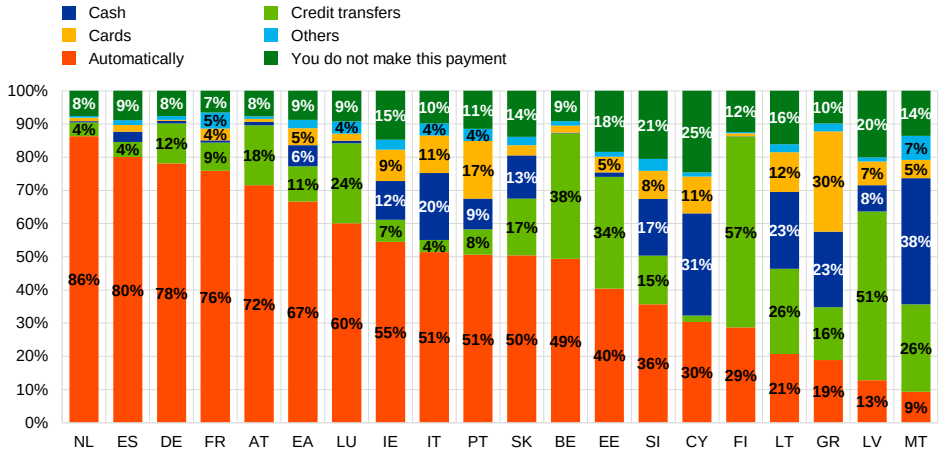
Rent or mortgage – payment instrument and country



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: "EA" refers to the euro area average (all 19 countries). The category "Automatically" refers to direct debits or standing orders and the category "Others" includes the answer options "Other" and "Don't know". Percentages may not add up due to rounding.

Chart 33

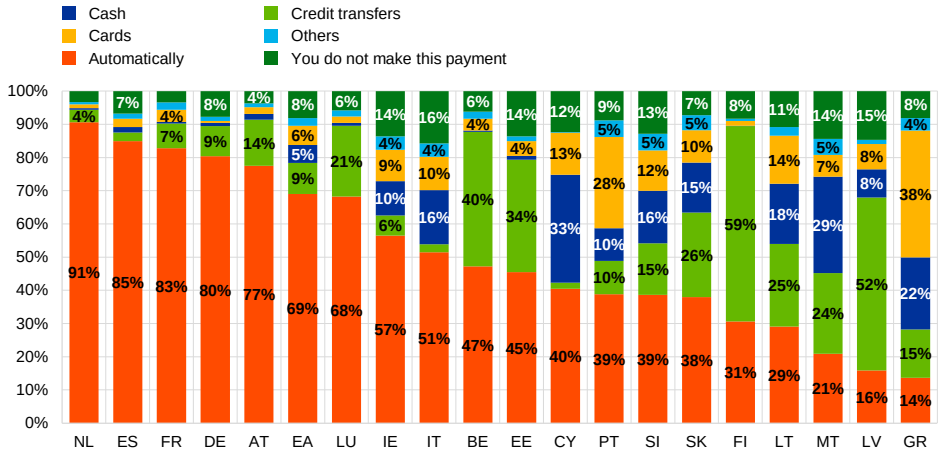
Electricity – payment instrument and country



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: "EA" refers to the euro area average (all 19 countries). The category "Automatically" refers to direct debits or standing orders and the category "Others" includes the answer options "Other" and "Don't know". Percentages may not add up due to rounding.

Chart 34

Telephone – payment instrument and country



Sources: ECB (2019), De Nederlandsche Bank and Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: "EA" refers to the euro area average (all 19 countries). The category "Automatically" refers to direct debits or standing orders and the category "Others" includes the answer options "Other" and "Don't know". Percentages may not add up due to rounding.

4 Consumers use cash (in particular high-value banknotes) as a store of value

Despite the shortcomings of using interview surveys to trace the use of cash as a store of value by households, they can still be used to show that people store cash at home or in safety deposit boxes and to give an indication of the differences in hoarding behaviour between countries or population groups. To this end, survey respondents were asked whether they keep cash at home or somewhere else for various reasons and to give an approximate indication of the amount. The results are detailed in Sub-section 4.1.

As the possession of high-value banknotes is often associated with the use of cash for saving purposes, the survey respondents were asked to report on their possession of high-value banknotes in the last twelve months. The results are detailed in Sub-section 4.2.

4.1 Extra cash stored

Cash can be used as a store of value without requiring the involvement of financial intermediaries and payment systems. It also has the advantage of being the most liquid asset and widely accepted by merchants.

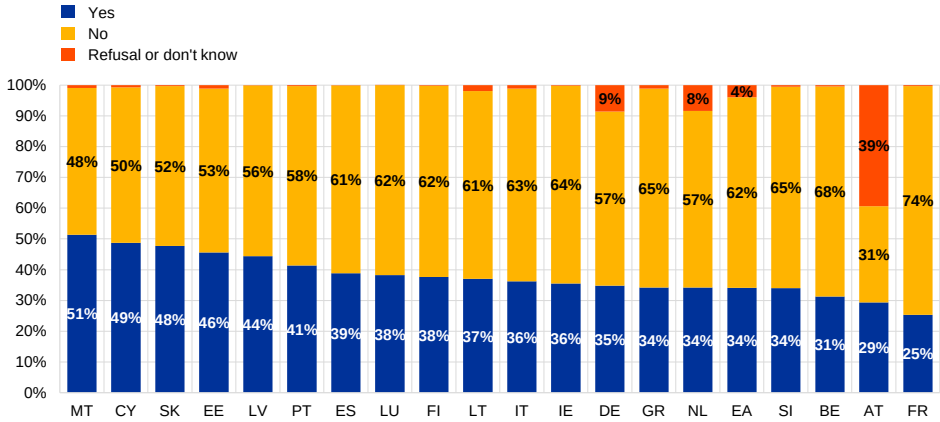
Respondents were asked if they kept cash reserves at home or somewhere else for various reasons, e.g. to top up their wallet, as a precautionary reserve or as an alternative way of saving (hereinafter referred to as “extra cash”). It is assumed that answers to these questions are to some extent biased and possibly resulted in underreporting of actual values, because information about the amount or pattern of cash reserves may be seen as sensitive by at least some survey respondents. Answers given by interviewees might also be dependent on the survey mode (i.e. whether questions were asked via telephone, online or in face-to-face interviews), as each mode might have a different impact on the perceived anonymity of the respondent and on the relationship of trust with the interviewer. The SPACE results show that the number of refusals to answer these questions and the number of “Don’t know” answers were sometimes higher when the survey was conducted by phone. In some countries, this tendency was more pronounced. Cultural differences might also have had a bearing (e.g. in countries where banking secrecy is strong) as might societal developments (e.g. actual or perceived levels of crime).[32]

[32] For example, a telephone fraud was widely reported in Austrian media at the time the SPACE survey was being conducted. While it was explained to the interviewees that the survey was being conducted on behalf of the ECB, the publicity about ongoing fraud could be one explanation for the high refusal rate among Austrian citizens when asked to answer these questions.

The SPACE results show that 34% of respondents reported keeping cash reserves at home (broken down by survey mode, the results were 37% for the online sample and 31% for the telephone sample). The countries in which most respondents answered that they kept extra cash were Malta and Cyprus, where face-to-face interviews were conducted and where, respectively, 51% and 49% of respondents stated that they kept extra cash. At the other end of the spectrum were Belgium and France, where less than a third of respondents acknowledged keeping extra cash. Although survey results also suggest that Austrian consumers store slightly less cash (29%) than the euro area average (34%), it is noted that there was a high level of non-response to this question in Austria.

Chart 35

Extra cash reserves, by country

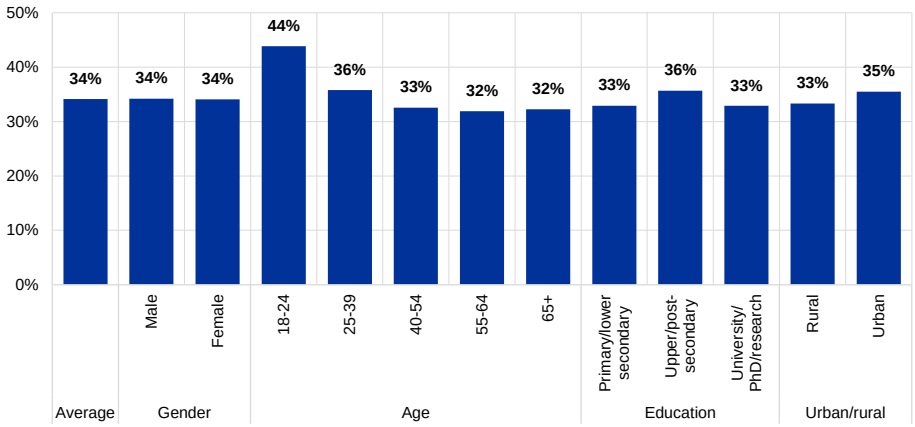


Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries). Percentages may not add up to 100% due to rounding.

The SPACE results show that those aged between 18 and 24 were more likely to report keeping cash reserves than those above 25 years of age. While respondents were not asked for specific reasons, there could be a link to lower access to bank accounts, pocket money paid in cash and gifts received in cash. Level of education does not seem to have any particular influence on keeping extra cash. Finally, respondents living in urban areas reported hoarding cash slightly more often than those living in rural areas.

Chart 36

Extra cash reserves, by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

The share of respondents keeping amounts of extra cash decreases as the amounts themselves increase. In the 2016 SUCH study[33], 24% of respondents stated that they stored cash. Of these, 78% stated that they kept less than €1,000 in total, 12% that they kept more than €1,000 and 10% refused to answer. In 2019 (based on SPACE), out of the 34% who responded that they put cash aside outside a bank, 85% kept less than €1,000, 6% kept between €1,000 and €5,000, 1% kept between €5,000 and €10,000, and 1% kept over €10,000. Despite their relatively small number, respondents hoarding more than €10,000 have a noticeable impact on the calculation of the average amount of cash stored outside a bank. 7% of the respondents who reported keeping cash at home refused to disclose how much cash they store in this way.[34]

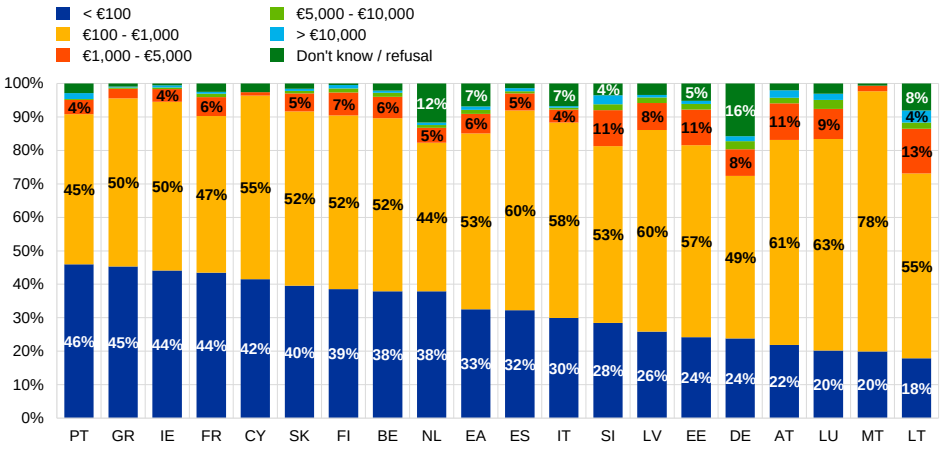
There were variations at country level: some countries had higher proportions of respondents storing smaller amounts of extra cash (e.g. Portugal, Greece, Ireland and France), while others had higher proportions of respondents storing larger amounts of cash (e.g. Austria, Slovenia and Lithuania, which had the highest proportion of respondents reporting cash reserves at home above €1,000). Respondents were not asked why they stored extra cash. However, factors could include access to bank accounts, national tax regimes or experiences with previous banking crises.

33 The question was worded slightly differently in the SPACE survey than it was in the 2016 SUCH study. The example “to top up your wallet” is an addition that could explain to some extent the increase in the share of respondents saying that they do keep extra cash.

34 The share of respondents refusing to disclose the size of their holding is largely attributable to Germany and the Netherlands, for which national survey data were integrated into the analysis (see Box 1).

Chart 37

Amount of extra cash held by those who reported storing cash, by country



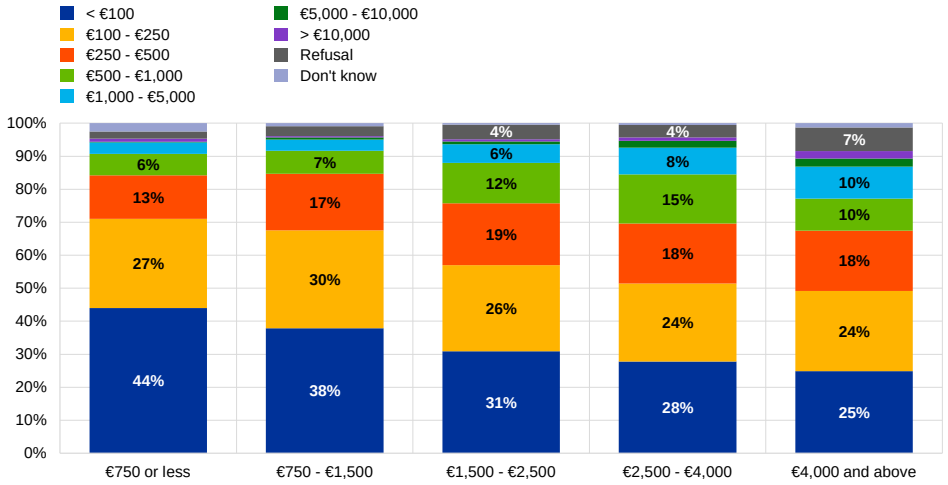
Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area (19 countries). Percentages may not add up due to rounding.

A separate study by the Deutsche Bundesbank (Deutsche Bundesbank, 2020), shows that older people in particular tend to hold more extra cash outside their wallets. The authors observed that the average cash holding increased up to the age of 65, before declining again, and suggested that this could indicate that cash reserves are accumulated until shortly before retirement. Students and trainees usually have very low cash holdings. In the Deutsche Bundesbank study, a significant relationship was also identified between income and the amount of cash held. According to the study, the average amount of cash reserves that individuals hold in addition to the cash they keep in their wallets for purchases rises in line with income.

The results of the SPACE study show that small cash reserves are held in higher proportions by respondents with lower incomes (see Chart 38). The socio-demographic variables show that males are more likely to hold larger amounts of cash reserves than females and that cash reserves increase with age up to the age of 65 and then decline again. Consumers with higher levels of education also keep higher cash reserves (see Chart 39).

Chart 38

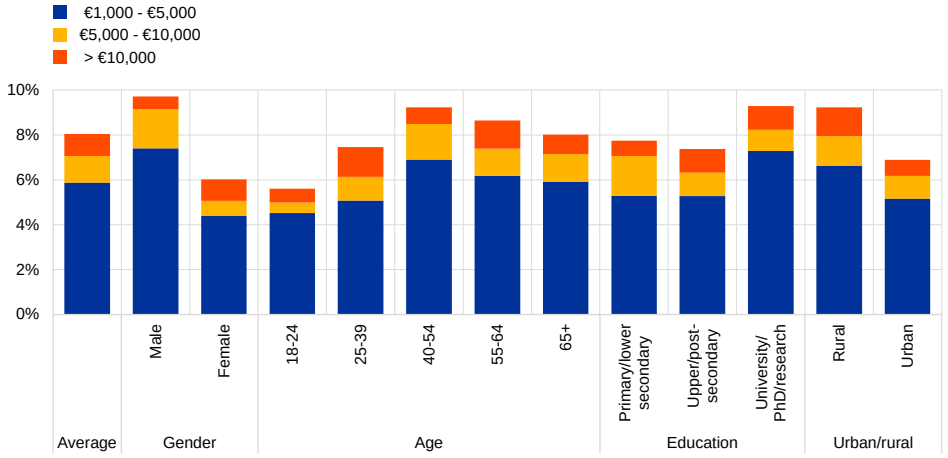
Amount of extra cash held, by income group



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area excluding the Netherlands (18 countries). The chart shows the percentage of respondents in each income group (monthly net household income after taxes and social security) with each level of cash reserves.

Chart 39

Amount of extra cash held (€1,000 and above), by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

Although, as already emphasised, survey results on hoarding should be interpreted with caution, they show that a significant share of the population uses cash as a store of value and that the sums involved are significant. Consumers are not the only ones using cash for this purpose; as the Deutsche Bundesbank study suggests, firms' savings are very likely to represent a (high) share of cash hoarding in some countries.

4.2 Possession of high-value banknotes

In the SPACE survey, respondents were also asked whether they had had at least one of the higher-denomination banknotes (€500, €200 or €100) in their possession in the twelve months prior to taking the survey. Results show that 7% of all respondents

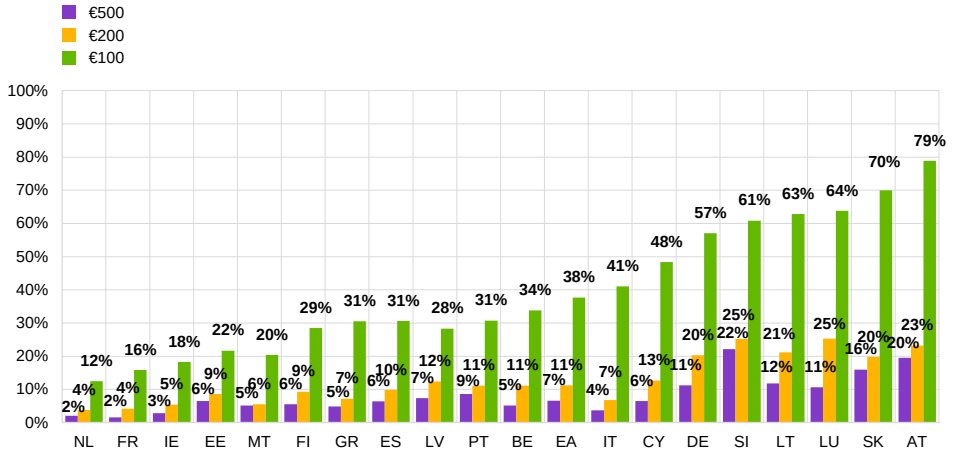
reported having at least one €500 banknote in the last 12 months, 11% reported having at least one €200 banknote and 38% reported having at least one €100 banknote.

The possession of high-value banknotes is often associated with the use of cash for saving purposes. The survey results show that the likelihood of having €500 or €200 banknotes increases for respondents with the highest amounts of cash kept at home. The use of high-value notes is, however, not restricted to storing cash. A proportion of these banknotes could also be used for making payments. In the SUCH study, 40% of those possessing €500 or €200 banknotes reported using them to pay for goods and services at the point of sale.

At country level, the possession of high-value banknotes varies widely: the Netherlands, France and Ireland had the lowest proportions of respondents reporting possession of high-value banknotes, while Austria, Slovakia and Luxembourg had the highest proportions (see Chart 40). It is notable that in every country, the possession of €200 and €500 banknotes is less common than the possession of €100 banknotes (this denomination can sometimes be withdrawn at ATMs).

Chart 40

Possession of high-value banknotes, by country



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area (19 countries). Respondents were allowed to give multiple answers.

In the 2016 SUCH study, respondents were asked to report whether they had had either a €500 or a €200 in their possession during the past twelve months, so separate information on each denomination was not available. In addition, the SUCH results did not cover Germany. The results of the 2016 SUCH study showed that 19% of respondents reported having had a €200 or €500 euro banknote in their possession. Adapting the scope and the methodology of SPACE to compare the SPACE results with the SUCH study (by taking out Germany and grouping the answers for the €500 and €200 banknotes) gives a 10% share of respondents who reported having had at least one €500 or €200 banknote in their possession. Whether the decline may be explained in part by the decision of the ECB to stop the production and issuance of €500 banknotes was not analysed.[35] Although they are still circulating and are legal

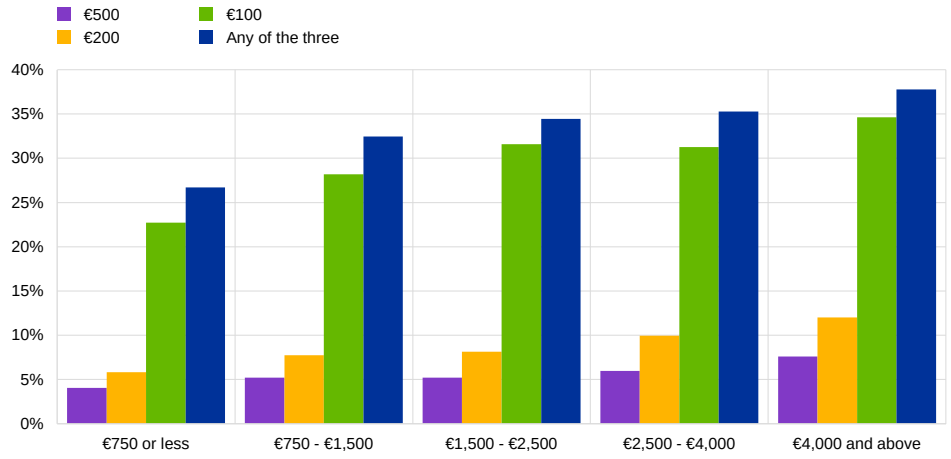
[35] See "ECB ends production and issuance of €500 banknote", *press release*, ECB, 4 May 2016.

tender in the euro area, no new €500 banknotes have been put into circulation since May 2019. Therefore, opportunities to encounter €500 banknotes in circulation are diminishing.

The socio-demographic breakdown shows that possession of high-value banknotes seems in some way to be related to income.[36] The survey results show that the possession of high-denomination banknotes is higher in higher income categories: only 27% of respondents with a monthly income below or equal to €750 had any of the high-value banknotes in their possession in the twelve months prior to the survey; this share increases to 38% for respondents with a monthly income above €4,000.

Chart 41

Possession of high-value banknotes, by income group



Sources: ECB (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area excluding the Netherlands (18 countries). The chart shows the percentage of respondents in each income group (monthly net household income after taxes and social security) with each level of banknote possession per denomination.

[36] Excluding the Netherlands, for which results are not comparable.

5 Factors influencing payment behaviour

Payment behaviour is influenced by several factors, such as payment preferences, consumers' access to and merchants' acceptance of payment instruments, and the amount people have in their wallets. Demographic factors also play a role, not only in actual behaviour, but also in preferences. In this section, these factors are analysed on the basis of the survey data and, where possible, comparisons are made with earlier survey results.

5.1 Consumers' payment preferences

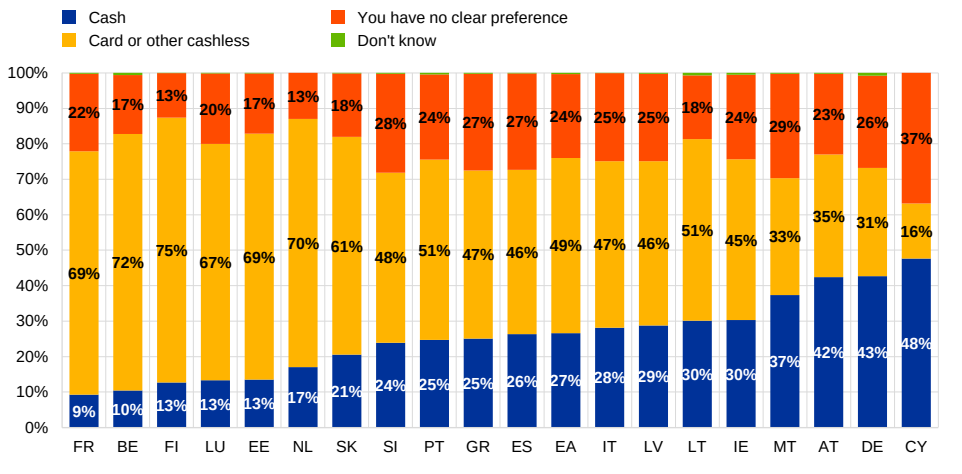
5.1.1 Payment instrument preference

The high use of cash for paying at the point of sale and for making P2P payments (see Section 2) contrasts with the self-reported preference for cashless payment instruments among euro area citizens in 2019. When asked which means of payment they would prefer to use in a shop if they could choose, only 27% of respondents in the euro area answered that they would prefer cash, while 49% answered that they would prefer a cashless means of payment, such as cards. Another 24% said they were indifferent as regards the preferred payment instrument.

Chart 42 shows respondents' payment instrument preferences by euro area country in 2019. The share of respondents who reported a preference for cash over cashless means of payment exceeds one third of respondents in only four countries – Malta (37% cash against 33% cashless), Austria (42% against 35%), Germany (43% against 31%) and Cyprus (48% against 16%).

Chart 42

Preferred payment instrument by country

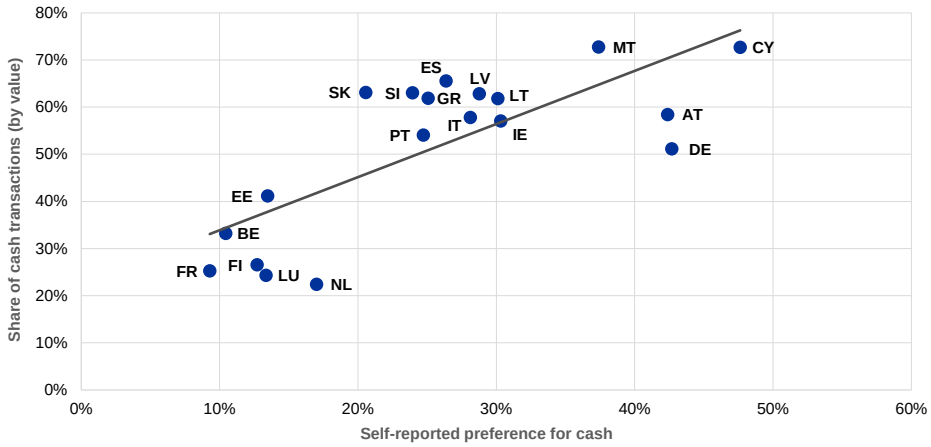


Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area (19 countries). Percentages may not add up due to rounding.

As shown in Chart 43, the stated preference for cashless means of payment and actual payment behaviour differ at country level, although a higher stated preference for cash is generally associated with a higher share of cash transactions in terms of value. Three clusters of countries can be distinguished in Chart 43: countries with a low reported preference for cash (where the share of cash transactions in value terms is relatively low, ranging from 20% to 36%), countries close to the average preference for cash (where the share of cash transactions ranges from 53% to 65%), and countries with a relatively high reported preference for cash (where the share of cash transactions ranges from 51% to 75%).

Chart 43

Payment behaviour and self-reported preference for cash



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).

In spite of this, even in countries where a large majority of respondents reported a preference for cards[37] or other cashless payment instruments – thereby showing a low preference for cash – cash was the payment instrument most used at the point of sale and for P2P transactions in 2019 (see also Sub-section 2.1). As already observed in the SUCH study, this again demonstrates that opinions and perceptions can deviate significantly from actual behaviour. The question is why there is such a discrepancy between stated payment preferences and actual payment behaviour. Potential reasons for this discrepancy have been investigated in the literature. For example, Van der Cruijsen et al. (2017) note that, in the Netherlands, the strong habit of paying in cash explains this gap to a considerable extent, which is corroborated by the fact that the gap increases for older consumers (presumably with stronger cash habits) and for

[37] In the SUCH study, consumers declared a preference for cashless means of payment because they are easy to use, fast and there is no need to collect cash, e.g. from an ATM.

low-value transactions (which are more often settled in cash than higher-value payments).[38]

Since the SUCH study was conducted, the self-reported preference for cash in the euro area has dropped from an average of 32% in 2016 to 27% in 2019. This coincides with an increase in the stated preference for cards and other cashless payment instruments (from 43% to 49%) and a slight decrease in indifference (from 25% to 24%). The greater preference for cashless means of payment seems to have continued during the pandemic in 2020. Although, owing to methodological differences, the results of the ad hoc 2020 IMPACT survey and SPACE are not entirely comparable (see Box 3), during the pandemic the stated preferences for cash and the indifference towards payment instruments have decreased to 25% (down from 27% in the SPACE survey) and 21% (down from 24%), respectively. The stated preference for cashless means of payment has increased by 5 p.p. to 54% (up from 49%).

At national level, the survey results for 2019 indicate that in all countries the self-reported preference for cash has declined since the 2016 SUCH study, with the strongest declines observed in Slovenia (down 20 p.p.), Greece (down 18 p.p.), Spain (down 16 p.p.) and Ireland (down 16 p.p.). The share of respondents who expressed a preference for cash exceeded the share who preferred cards or other cashless means of payment in only four countries – Cyprus, Germany, Austria and Malta. At the other end of the spectrum, in Finland, Belgium, the Netherlands, Estonia, France and Luxembourg, well over two-thirds of respondents said they preferred cards or another cashless means of payment, with only a relatively small share expressing a preference for cash as a means of payment.

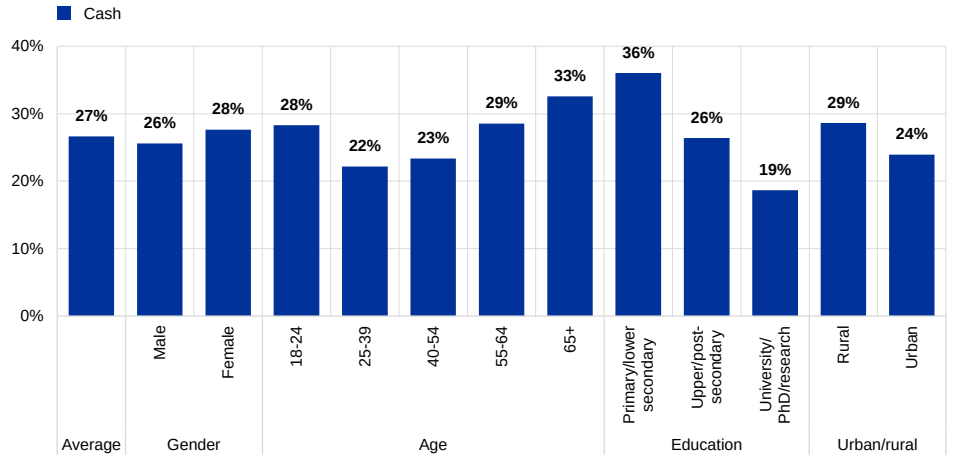
Self-reported preferences vary across demographic categories, as shown in Charts 44 and 45. It appears that, on average, there is very little gender difference, with 26% of males and 28% of females preferring cash and 51% of males and 48% of females preferring cards or another cashless means of payment. Age plays a role not only in actual behaviour, but also in stated preferences. The age groups 18-24 years

[38] There are other potential reasons for the discrepancy between stated preferences and payment behaviour. It should be noted that, even though self-reported consumer preferences have in some instances been found to be a good proxy for real tastes (Fernández-Blanco et al., 2009), reported and actual preferences are not identical. Part of the discrepancy may thus also be explained by the gap between real and stated preferences. For example, when expressing preferences, some people may simply forget about their preferences in relation to small-value payments and mainly remember the large payments they make. This might explain the fact that when preferences are compared with the share of cash payments at point of sale and for P2P transactions in value terms (48%), the discrepancy between actual behaviour and stated preference (27%) is smaller than when making the same comparison in terms of number of transactions (73%). In addition, declaring indifference with regard to payment options may hide implicit tastes in favour of cash or cards; i.e. when consumers report that they are indifferent, there may be hidden factors explaining why they ultimately pay more in cash than with cards. Beshears et al. (2008) have shown that the factors explaining the mismatch between stated and revealed preferences are passive choice (accepting the default option instead of actively making a choice) or limited personal experience (having little or no experience of alternative options). These factors could potentially be present in the payment choice, e.g. payment instrument acceptance or limited experience of cashless means of payment may explain why some indifferent individuals ultimately pay with cash. In this regard, the literature on payment behaviour has identified that merchant card acceptance (Arango, Huynh and Kosse, 2015; Arango, Hogg and Lee, 2015; Bagnall et al., 2016; Wakamori and Welte, 2017) and consumers' cash balances (Alvarez and Lippi, 2017; Arango-Arango et al., 2018) are circumstantial determinants of payment behaviour, which may not be adequately captured in the question on self-reported preference. Van der Cruijsen et al. (2017) show that in the Netherlands the gap widens in traditionally cash-intensive sectors and for consumers carrying more cash. Further research is needed to determine whether these factors also explain the gap between stated preferences and real behaviour across euro area countries in the SPACE results.

(28%), 55-64 years (29%) and 65+ years (33%) have a greater preference for cash than those aged 25-54 (22-23%). The opposite can be seen for card preference in Chart 45. On average, rural respondents (29%) and those with a lower level of education (36%) reported a stronger preference for using cash than respondents living in urban areas (24%) and those with a higher level of education (19%).

Chart 44

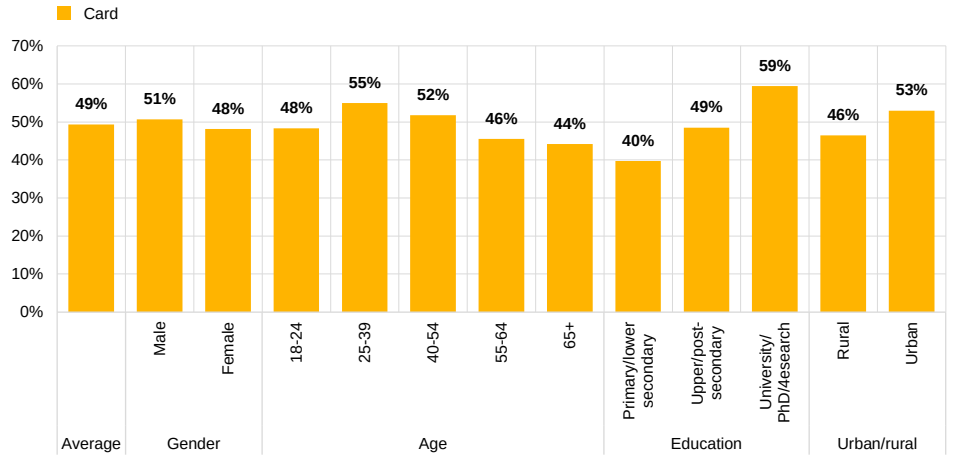
Preference for using cash to pay, by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

Chart 45

Preference for using cards to pay, by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

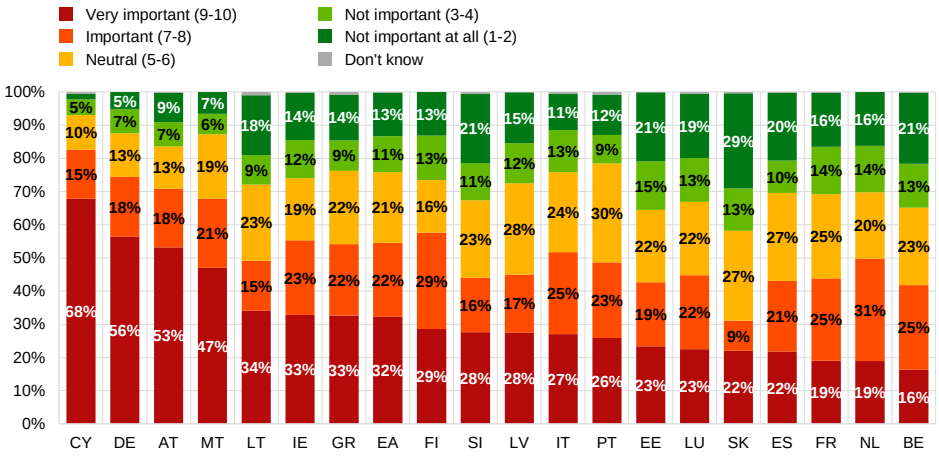
5.1.2 The importance of having cash as a payment option

Consumers' perception of the importance of having cash as a payment option is also an important factor in payment preferences. Although the literature suggests that using a single payment instrument is common for some consumers – a practice known as "single-homing" (Cohen and Rysman, 2013; Rysman and Schuh, 2016; Stavins,

2017) – many others may still consider it important to have a wider range of payment options, including cash. In order to supplement the findings on most-preferred payment instruments (see Sub-section 5.1.1), respondents were asked to rate the importance of having cash as a payment option on a scale of 1 to 10.[39] Chart 46 shows euro area averages of these scores grouped into five categories. Although, as seen above, only 27% of respondents declared that their most preferred payment instrument is cash, more than half of euro area citizens deemed it important (22%) or very important (32%) to have cash as a payment option, while one fifth of respondents considered cash neutral (21%) and the remainder considered cash not important (11%) or not important at all (13%). Given that 55% of euro area citizens consider cash important or very important, this suggests that not having cash as the most-preferred payment instrument is not necessarily equivalent to consumers deeming cash unimportant. A majority of euro area citizens would still like to have the choice of paying with cash, even if they pay less with cash over time and generally have a preference for cashless means of payment.

Chart 46

The importance of having the option to pay with cash, by country



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area (19 countries). Percentages may not add up to 100% due to rounding.

The same question was asked in the 2020 IMPACT survey. The distribution of scores was similar to the 2019 SPACE survey, except for the two top categories (important and very important). Although the combined level of these two categories was still almost the same as in 2019 (52%), during the pandemic there was a shift of respondents from “very important” (scores 9-10) to “important” (scores 7-8). Thus, the share of respondents considering a cash payment option important increased from 22% in SPACE to 29% in the 2020 IMPACT survey, while the share considering the cash payment option very important declined from 32% in SPACE to 23% in the IMPACT survey.

The SPACE results show that in all euro area countries except Slovakia (31%), at least 40% of respondents considered it important or very important to have cash as a payment option (see Chart 46). More specifically, in eight countries more than half of

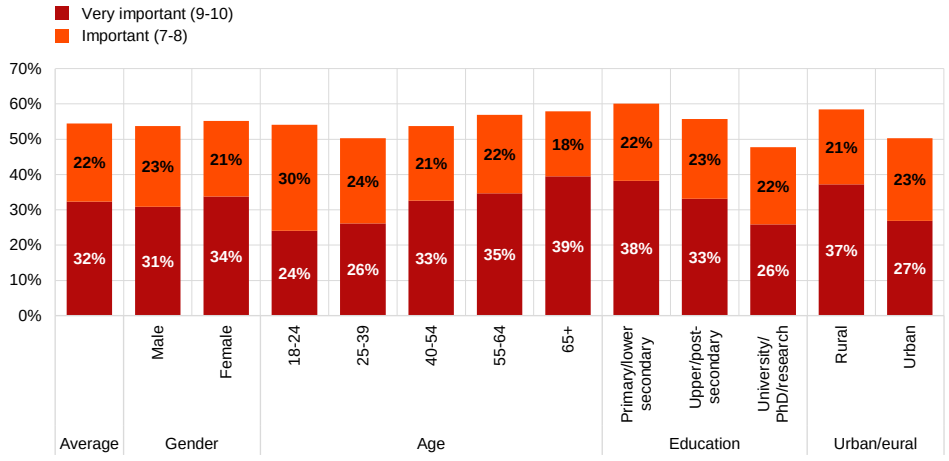
[39] This question was not included in the 2016 SUCH survey.

respondents assigned a high or very high importance to having cash as a payment option. Conversely, the share of respondents deeming it unimportant to be able to pay in cash (scores 1-4) is generally rather low across all euro area countries. Only in three countries does this share exceed one-third of respondents – Estonia (35%), Belgium (35%) and Slovakia (41%) – although some other countries are close to this threshold – Slovenia (32%) and Luxemburg (33%). For Slovenia and Slovakia in particular, this is a rather surprising result, given the level of cash use in these countries as described in Section 2.

Looking at the demographic breakdown of respondents who consider having cash as a payment option important or very important (see Chart 47), the results are consistent with the survey questions on cash use and stated preference for cash. There are virtually no gender differences, with females (55%) and males (54%) assigning more or less the same importance to having a cash payment option. As for age, combining scores for those who deem the option to pay with cash important or very important (scores 7-10) yields a similar pattern to that observed in the self-reported preferences for cash (see Chart 44). In general, assigned importance increases with age, except for the 18 to 24 age group, in which, in line with their preference for using cash, a relatively high share of respondents assign importance to being able to pay with cash (54%). The share of respondents believing that having cash as a payment option is important or very important tends to decrease with level of education (from 60% of respondents with primary or lower secondary education to 48% of respondents with a university degree or higher level of education[40]) and is higher for respondents in rural areas (58%) than in urban areas (50%).

Chart 47

The importance of having the option to pay in cash, by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

[40] The share of respondents holding a PhD includes data from all euro area countries except the Netherlands. However, the effect of excluding the Netherlands in this particular category is considered negligible.

5.2 Access and acceptance

5.2.1 Consumers' access to non-cash payment instruments and methods

Consumers' access to, or possession of, a payment instrument is a key determinant for the use of that payment instrument. Access to payment instruments, usually included under the wider concept of financial inclusion, is becoming less of a constraint worldwide, especially in developed countries (Demirguc-Kunt and Klapper, 2012; Demirguc-Kunt et al., 2018). In the euro area, access to bank payment services (such as payment cards, credit transfers, direct debit and other electronic payment instruments) is widespread, although some heterogeneity exists between socio-demographic groups and between countries.

On average, 94% of respondents in the euro area reported having access to a payment card (see Chart 48). The share of those in possession of a payment card is almost the same as that recorded in the 2016 SUCH study (93%), but the share of respondents in possession of a card with contactless payment technology has increased sharply. In 2016 less than 10% of respondents reported having a card with contactless technology. In the 2019 SPACE survey, this share had increased to 63%.

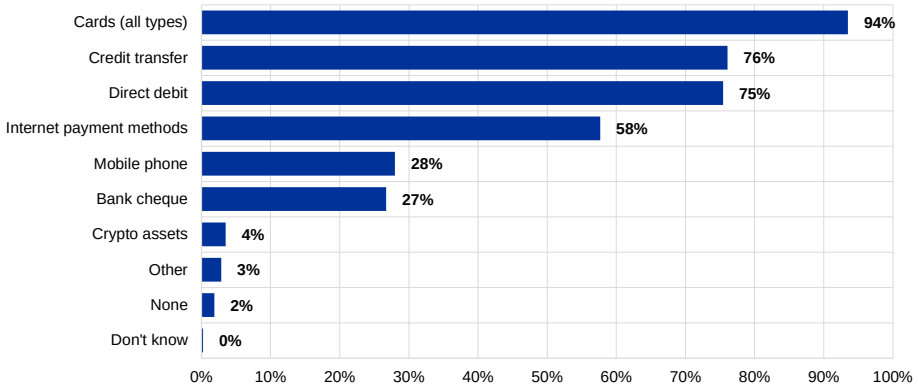
Consumers are also increasingly gaining access to other payment methods. In 2019, 58% of respondents reported having access to e-payment solutions, such as PayPal. 28% of respondents also reported having one or more mobile payment apps (e.g. Apple Pay) installed on their phones. Shares were higher for the younger respondents, both for internet payment methods (66% of respondents in the 18-24 age group) and mobile payments (43% of respondents in the 18-24 age group). Level of education also seems to play a major role in access to cashless payment instruments and cashless payment methods; respondents with only primary education had much less access (18% for e-payment solutions and 8% for mobile payments) than those with a higher level of education (above 60% for e-payment solutions and 25% for mobile payments).

Only 3.6% of respondents reported having access to crypto assets, such as Bitcoin or Ethereum. The share is highest in Germany (7%) and Cyprus (7%). As with e-payment solutions and mobile payments, crypto assets are more popular among respondents between 18 and 39 years old (6% of respondents in these age groups own crypto assets). Whereas for e-payment solutions and mobile payments, there is no great difference in access between men and women, for crypto assets the gender difference is rather striking, as 73% of the respondents who said they have access to them are men.

On average 27% of respondents said that they have access to bank cheques, even though in several countries there is no access at all. Access to cheques is high in France, with 84% of respondents saying they have access to bank cheques, while significant shares were also recorded in Malta (57%), Italy (44%) and Ireland (33%). In contrast with new payment methods, the share of respondents with access cheques is relatively high among the older age groups.

Chart 48

Access to non-cash payment instruments

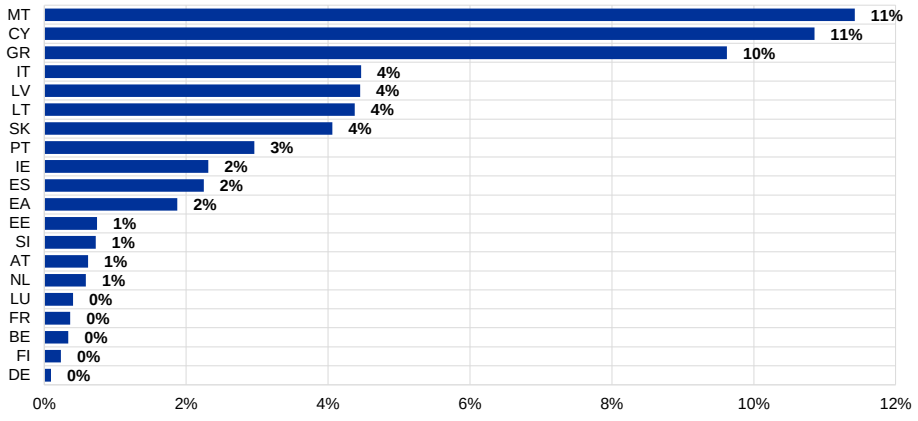


Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

Overall, just below 2% of respondents reported having no access to any of the payment instruments and payment methods mentioned in Chart 48. However, there are large differences between countries, as shown in Chart 49. In many countries, nearly all respondents reported having access to at least one payment instrument or payment method other than cash, but in Cyprus, Greece, and Malta between 9.6% and 11.4% of respondents reported having no access to any non-cash payment instrument or payment method, while in Italy, Latvia, Lithuania and Slovakia, between 4% and 5% of respondents reported having no access to any non-cash payment instrument or payment method. Thus, these respondents rely entirely on cash or on other persons with access to cashless means of payment.

Chart 49

Percentage of population that only has access to cash, by country



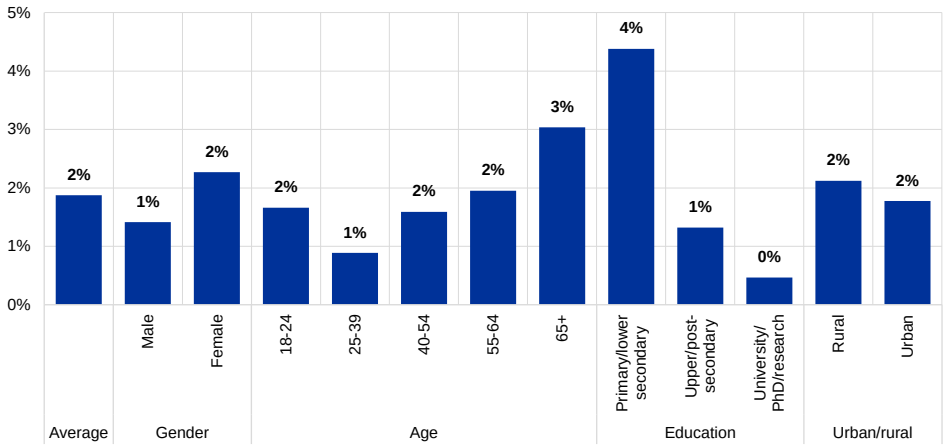
Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

Regarding level of education, Chart 50 shows that in the euro area, on average, 4% of respondents with primary and lower secondary education have no access to cards or any other cashless payment instrument or payment method. Furthermore, although on

average in the euro area only 3% of respondents aged 65 or over reported having no access to any payment method or payment instrument other than cash, for Cyprus, Malta, Greece, Lithuania, Slovakia and Latvia over 10% of this age group reported having no access to other means of payment. In Cyprus and Malta, as many as one in five respondents in this age group said they only had access to cash.

Chart 50

Percentage of population that only has access to cash, by demographic



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

5.2.2 Consumer's access to cash

Facilitating access to cash is an important part of the work of central banks (Jiménez and Tejero, 2018; Banque de France, 2019; European Central Bank, 2019; Banque de France, 2020; Sveriges Riksbank, 2020; Lagarde, 2020). Access to cash is necessary to satisfy the preference or need of consumers to pay in cash and thus also influences the actual payment behaviour of consumers. The relative costs of accessing cash are also an important factor influencing payment behaviour (Arango-Arango et al., 2018).

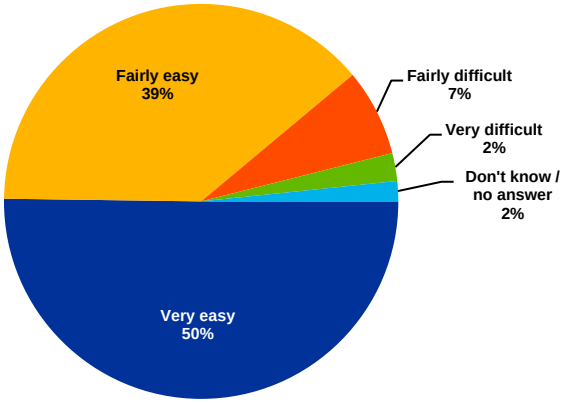
Access to cash can be obtained through various sources, such as cash withdrawals in banks, at ATMs and, more recently, at retailers when paying with cashless payment instruments, specifically cards (cashback). Respondents' preferred location for withdrawing cash was at ATMs (see Sub-section 6.1), but ATMs are becoming scarce in certain regions. Owing to pressure on commercial banks to cut costs and their limited ability to charge for cash services, the downward trend in the availability of ATMs and branches offering cash services may spread beyond rural areas and may begin to affect the availability of cash in more urban areas. According to ECB data, between the second half of 2016 and the first half of 2019, the number of bank branches offering cash services in the euro area decreased by 19,830, from 165,056 to 145,226. In the same period, the number of ATMs in the euro area decreased by 13,921, from 324,650 to 310,729.

However, a downward trend in the number of ATMs and bank branches does not necessarily imply a deterioration in access to cash (Jiménez and Tejero, 2018); in

some locations where several ATMs were previously available, but not being used to their full capacity, banks have agreed to pool resources and replace their own ATMs with a single “white label” ATM. This does not necessarily mean that access to cash is more difficult in those areas. For this reason, people’s perception of access to cash was measured by asking respondents to rate the ease of access to cash from an ATM or a bank. Chart 51 shows that most respondents found it very easy (50%) or fairly easy (39%) to obtain cash from an ATM, while almost one in ten respondents considered that access to an ATM was fairly difficult (7%) or very difficult (2%). This is 4 p.p. higher than in the 2016 SUCH study (where the shares for fairly difficult and very difficult were 4% and 1%, respectively).

Chart 51

Ease of access to cash withdrawals at an ATM or a bank in the euro area

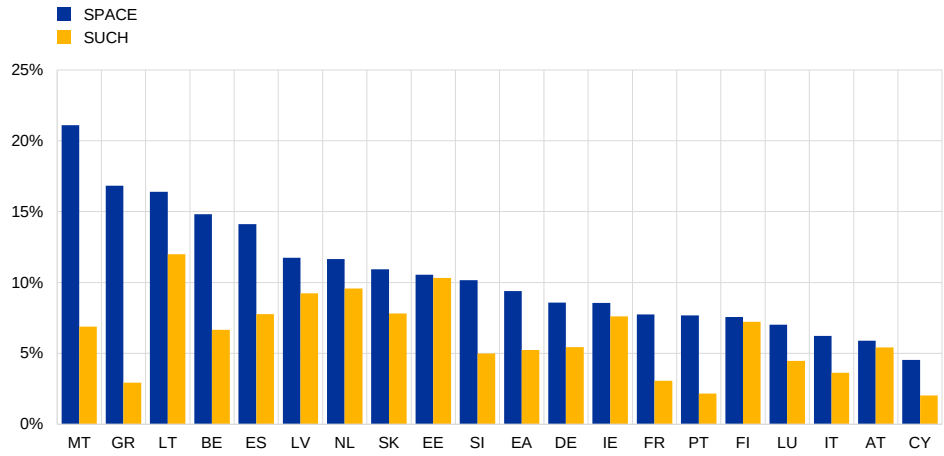


Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Note: The data are for the euro area (19 countries).

At national level, Chart 52 shows that the countries with the highest share of respondents who deemed access to cash to be fairly difficult or very difficult were Malta (21%), Greece (17%), Lithuania (16%) and Belgium (15%). In total, in ten euro area countries, at least 10% of respondents reported finding access to cash fairly difficult or very difficult. Comparing the results obtained in the 2016 SUCH study and the 2019 SPACE survey, Chart 52 shows that the share of respondents perceiving access to ATMs to be fairly difficult or very difficult has increased in all countries, but this increase was particularly pronounced in Malta and Greece and, to a lesser extent, in Belgium and Spain. A similar trend was observed (both for the euro area as a whole and for the aforementioned countries) when considering the share of respondents deeming access very difficult.

Chart 52

Share of respondents perceiving access to ATM withdrawals as fairly difficult or very difficult, by country



Sources: Authors' calculations based on the 2016 SUCH study, ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).

On average in the euro area, respondents in rural and urban areas had similar perceptions of the ease of access to cash through ATMs. This suggests that, at least on average, there is not a significant rural-urban gap with regard to access to cash. However, although for a country as a whole access to cash may be perceived as generally good, at regional level there may be relatively large parts of the population who are not satisfied with their access to cash. Indeed, survey results show that, especially in some rural and mountainous areas, a relatively high share of respondents said that access to cash was very difficult.

The 2019 SPACE survey does not include information on cash access channels other than ATMs, such as, for example, cashback. Cashback is a service provided by some retailers whereby customers pay for their purchase by card but ask the retailer to increase the card payment by a certain amount, which the retailer then returns to the customer in the form of cash from the till. More information on cashback across the euro area can be found in Sub-section 6.1.

5.2.3 Acceptance of cash and non-cash payment instruments and methods

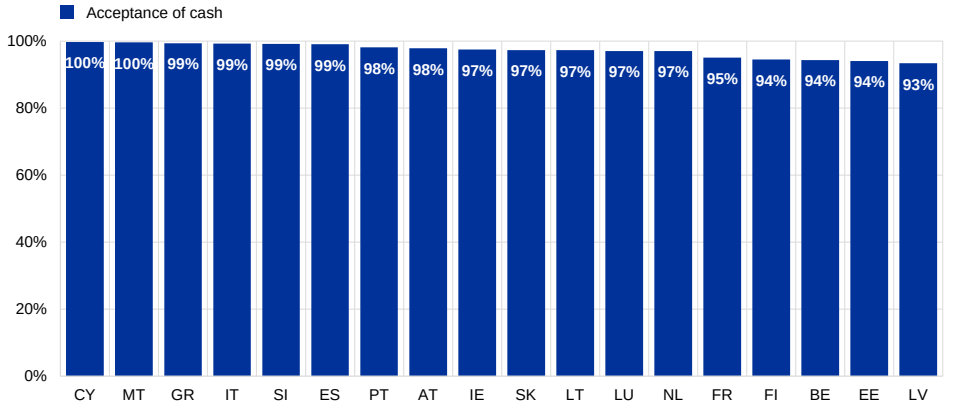
Another important factor influencing the choice of payment method is merchant acceptance (Arango, Huynh and Kosse, 2015; Arango, Hogg and Lee, 2015; Bagnall et al., 2016; Wakamori and Welte, 2017), i.e. whether the merchant accepts cards or other non-cash means of payment or has a cash-only policy. In the survey, respondents were asked to indicate for each payment whether any other payment option than the one they used would have been accepted.

In general, it can be said that cash is still widely accepted in all countries, as shown in Chart 53. Owing to a lack of data for Germany, conclusions can only be drawn for the other 18 euro area countries. On average, in these 18 countries, 98% of the reported

transactions could have been made using cash, with the lowest share of cash acceptance in Latvia (93%), Estonia (94%), Belgium (94%), Finland (94%) and France (95%). Apart from Latvia, these are also the countries with the lowest share of cash payments in total payments and where respondents indicated the highest preference for non-cash means of payment.

Chart 53

Share of reported POS transactions where cash was accepted, by country



Sources: ECB (2019) and Panteia for the Netherlands (2019).
Note: The data are for the euro area excluding Germany (18 countries).

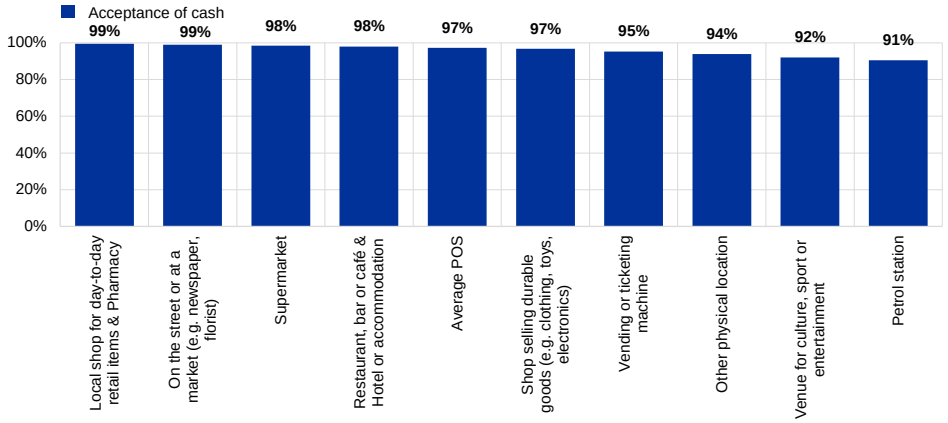
The locations where cash payments were most often not accepted in the euro area (excluding Germany)[41] were petrol stations (9%) and culture, sports and entertainment venues (8%).[42] This could be due to the fact that many petrol stations are unattended either 24 hours a day or at night and it is becoming more common for sports and entertainment venues to use reloadable cards or tokens which have to be bought in advance. The cash acceptance rate in other locations was reasonably high, as shown in Chart 54.

41 Data for 17 euro area countries (excluding Germany and the Netherlands) were made comparable to De Nederlandsche Bank's survey data for the Netherlands by grouping some of the locations into categories. Data on cash acceptance are not available for Germany.

42 More disaggregated data (excluding Germany and the Netherlands) indicate that cash was not accepted in hotels (and similar establishments) in an even higher share of transactions (14.2%).

Chart 54

Share of reported POS transactions where cash was accepted, by location type

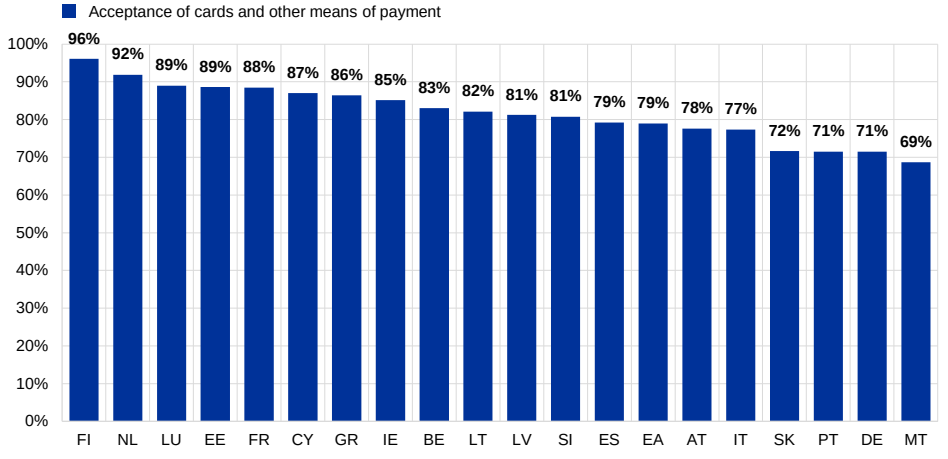


Sources: ECB (2019) and De Nederlandsche Bank and the Dutch Payments Association (2019).
Note: The data are for the euro area excluding Germany (18 countries).

As regards options to use cashless payment methods, Chart 55 shows that, on average in the euro area, it was possible to pay with non-cash payment instruments in 79% of reported transactions. This means that in slightly more than one in five transactions only cash was accepted. The reported acceptance of other payment instruments/methods exceeds 90% of transactions in only two countries – Finland (96%) and the Netherlands (92%). Conversely, in four euro area countries (Slovakia, Portugal, Germany and Malta) it was possible to use a cashless means of payment in less than three-quarters of transactions.

Chart 55

Share of reported POS transactions where cards and other means of payment were accepted, by country



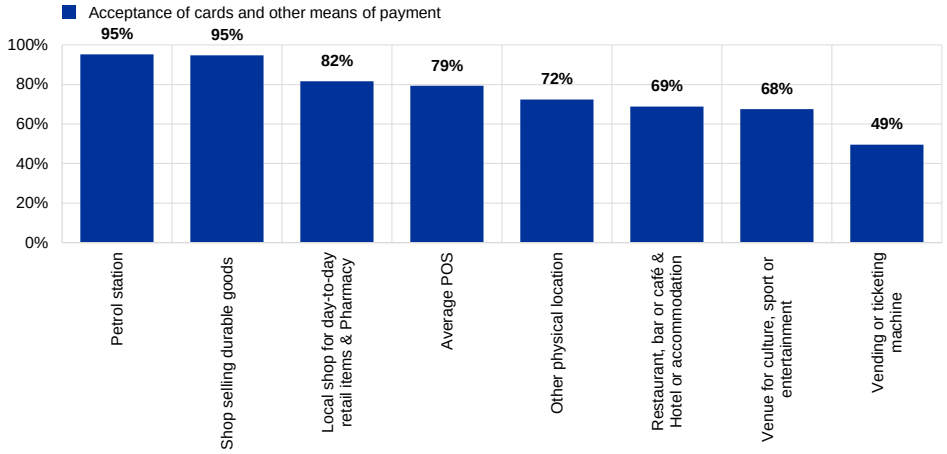
Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Note: The data are for the euro area (19 countries).

As shown in Chart 56, cashless means of payment were most often accepted by merchants in petrol stations and shops selling durable goods (both 95% of the number of reported transactions). The share of transactions where cashless payment instruments were accepted is slightly higher than the euro area average in local shops

for day-to-day items and pharmacies (82%), but lower than average in restaurants, bars, cafés and accommodation establishments (69%), culture, sports or entertainment venues (68%) and vending or ticketing machines (49%).

Chart 56

Share of reported POS transactions where cards and other means of payment were accepted, by location type



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Note: The data are for the euro area (19 countries).

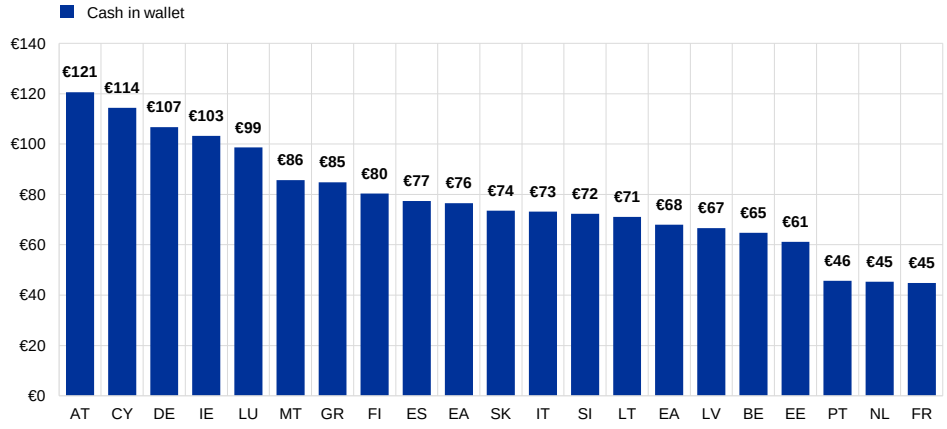
These results reflect the share of transactions where it was reportedly possible to pay in cash or with a cashless means of payment, which does not necessarily coincide with the share of places where one can pay in cash or with a cashless means of payment, even though it is likely to be a good proxy. P2P payments are not part of this analysis, as the focus is on the customer-to-business relationship. Although P2P transactions were mainly carried out using cash in 2019, it is clear that these transactions can also increasingly be carried out using payment instruments other than cash and new payment methods, such as mobile payment apps.

5.3 Cash balances in consumers' wallets

According to the literature, the amount of cash in the wallet is also one of the determinants of the decision to pay in cash (Bouhdaoui and Bounie, 2012; Arango, Huynh and Sabetti, 2015; Bagnall et al., 2016; Alvarez and Lippi, 2017; Arango-Arango et al., 2018). SPACE survey respondents were requested to report the amount of cash available in their wallet (i.e. not serving as a cash reserve) at the beginning of the day when they started to fill in their payment diary (see Chart 57). On average, respondents had €76.5 in their wallet, with high variability across countries. In 2019, the average amount of cash held by respondents in their wallets was more than €100 in Austria (€121), Cyprus (€114), Germany (€107) and Ireland (€103). In these countries, the average values of cash POS or P2P transactions were also among the highest. In contrast, the average amount held in wallets was only €45 in France and the Netherlands and €46 in Portugal. These countries are also among those with the smallest average cash transaction value.

Chart 57

Average amount of cash in the wallet at the beginning of the day, by country



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2017).
Note: The data are for the euro area (19 countries).

6 How consumers obtain cash

Given the high usage of cash for making POS and P2P payments, consumers' cash withdrawal behaviour is an important dimension of general payment behaviour. To gain some insight into cash withdrawals, respondents were asked about the manner in which they added cash to their wallet during the day (see Sub-section 6.1). As one source of replenishment is to receive some income in cash, the respondents were asked to indicate what proportion of their regular income they receive in cash (see Sub-section 6.2).

6.1 Topping up of consumers' wallets

Chart 58 shows in relative terms how often different sources of cash were used by consumers to add cash to their wallets (taking into account only the first addition of cash to the wallet each day).[43] The figures are for the euro area countries excluding Germany. On average, the source most often used by consumers was ATMs: 51% of all cash additions to the consumer's wallet came from an ATM. Other important sources in terms of number of transactions were respondents' family, friends and colleagues (together 17%) and cash reserves (16%). Cash income (5%) and over-the-counter withdrawals at banks (4%) were used less frequently.

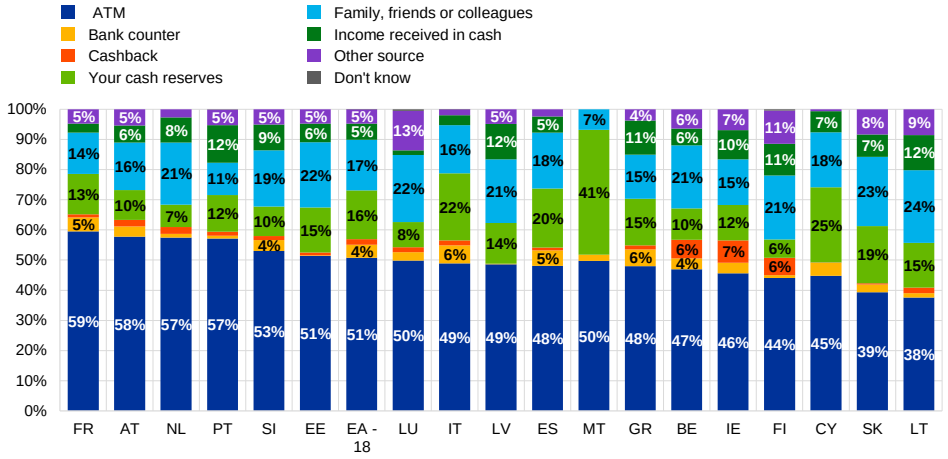
Roughly similar patterns are observed at country level. In all of the 18 countries in this part of the SPACE study, ATM withdrawals were the most common source of cash for respondents' wallets, although they accounted for more than half of cash additions in only six countries.

The second most popular source of cash varied between countries, but it was always either cash reserves or family, friends and colleagues. Results also indicate that cashback was not used in Malta and Latvia and was more prevalent in some countries, such as Ireland (7%), Belgium (6%) and Finland (6%).

[43] The source of the cash addition and its amount was only recorded for the first cash addition made during the day (see Annex 1).

Chart 58

Sources of cash additions to wallets, by frequency of use and by country



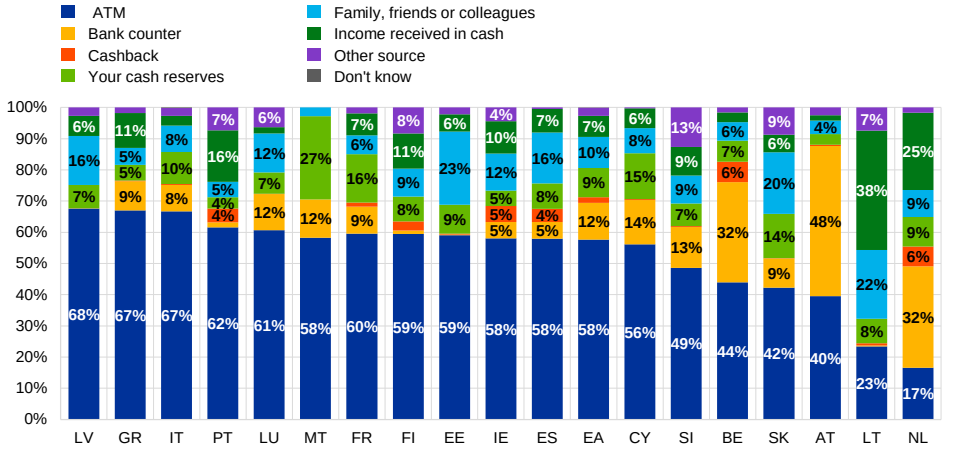
Sources: ECB (2019) and De Nederlandsche Bank and the Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany as data on cash additions by source are not available for this country. The data are based on answers to the question "Did you add any cash during the day?" and do not take into account any further cash additions made during the same day.

The overall picture changes when analysing the same answers in terms of value (see Chart 59). On average for the 18 countries, ATMs were the source from which respondents obtained most cash in terms of value (58% of the total value of cash additions to wallets came from ATM withdrawals), while over-the-counter withdrawals at banks were the second most important (12%), which is not surprising as higher-value withdrawals are usually made over-the-counter. Less important sources were cash reserves (9%), family, friends and colleagues (together 10%) and cash income (7%). On average, cashback represented only 2% of the total value of cash additions.

There are also strong variations between countries. For two countries (i.e. Lithuania and Austria), ATMs were not the main source of cash in terms of value. Instead, in Austria over-the-counter withdrawals were the largest source of cash, with 48% of the total value of cash additions to wallets. Cash income was the most important source in Lithuania (38%) and also important in Portugal (16%). Finally, cashback was more prevalent in Belgium (6%) and Ireland (5%) in value terms, but not generally widespread across the 18 countries in this part of the SPACE study.

Chart 59

Sources of cash additions to wallets, by value and by country



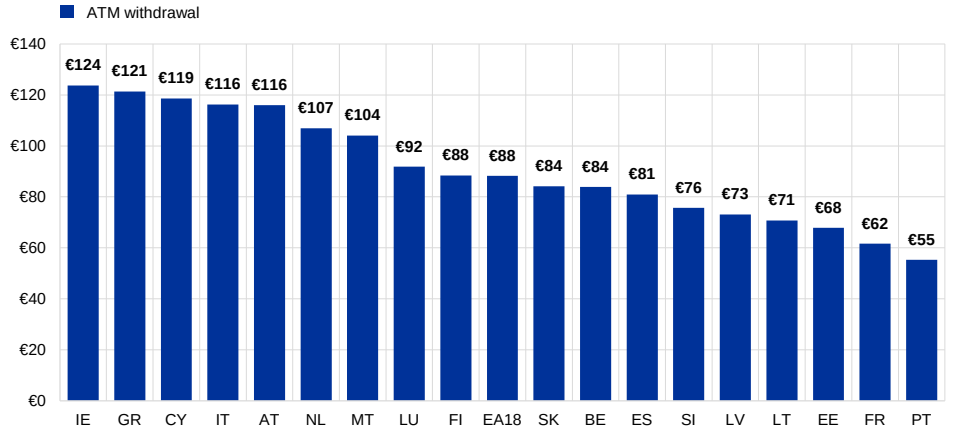
Sources: ECB (2019) and De Nederlandsche Bank and the Dutch Payments Association (2019).
Notes: Data are for the euro area excluding Germany as data on cash additions by source are not available for this country. The data are based on answers to the question "Did you add any cash during the day?" and do not take into account any further cash additions made during the day.

Chart 60 shows the average value of an individual ATM withdrawal per country (€88 on average for the 18 countries covered). Average withdrawals were largest in Ireland (€124), Greece (€121) and Cyprus (€119). The lowest average ATM withdrawals were in France (€62) and Portugal (€55). The wide variation between countries can be explained partly by the fact that only the first withdrawal recorded during the day was taken into account. In some countries, consumers tend to withdraw small amounts of cash for immediate use, while in other countries or regions it is more common to withdraw large amounts of cash for immediate and future use (partly depending on the distance to the nearest ATM). As a consequence, small withdrawal amounts in some countries may be due to consumers withdrawing cash more often but in smaller amounts.[44] Another related factor explaining country variations is the different fees for ATM withdrawals across euro area countries. In some countries average surcharge fees are lower than in other countries, or commercial banks offer a certain number of free withdrawals, which may influence consumers' withdrawal patterns.

[44] Survey data do not include information on the total number of withdrawals. This makes it difficult to make direct comparisons with other results in the report, such the value of an average cash transaction or average cash in wallet.

Chart 60

Average value of an ATM withdrawal



Sources: ECB (2019) and De Nederlandsche Bank and the Dutch Payments Association (2019).
Notes: "EA18" is the euro area excluding Germany. The data are based on answers to the question "Did you add any cash during the day?" and do not take into account any further cash additions made during the day.

6.2 Receiving regular income in cash

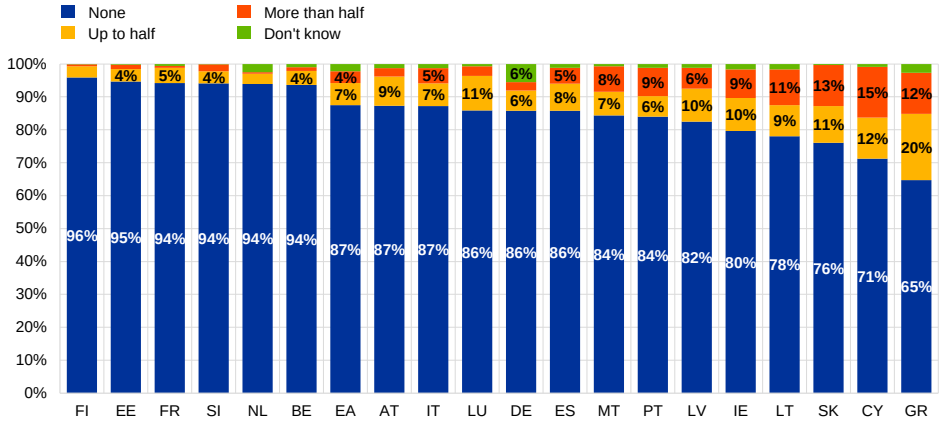
While euro area employees generally had their regular income paid into their bank accounts in 2019, there are some euro area countries and occupational groups where a non-negligible share of employees still received a substantial part of their regular income in cash. In order to gather more information on the share of income regularly received in cash, respondents were asked a specific question on what proportion of their regular income was received in cash.

The survey results show that the vast majority of euro area consumers (87%) did not receive any regular income in cash (see Chart 61). Around one in ten respondents received up to a half (7%) or more than half (4%) of their income in cash and the remainder answered "Don't know". The share of respondents receiving part of their income in cash is slightly lower than the results reported in the 2016 SUCH study, which found that 84% of respondents did not receive any regular income in cash and 16% received at least a quarter of it in cash, of which around half received more than half of their income in cash.

Countries in which a higher share of individuals receive a large proportion of their income in cash are expected to also have a higher share of people using this cash income (or cash reserves resulting from such cash income) as a source of cash: indeed, at country level, the average share of individuals receiving more than half of their income in cash is positively correlated with the share of individuals using cash income or cash reserves as a source of cash. However, there is no similar correlation when considering individuals receiving less than half of their income in cash.

Chart 61

Share of regular income received in cash

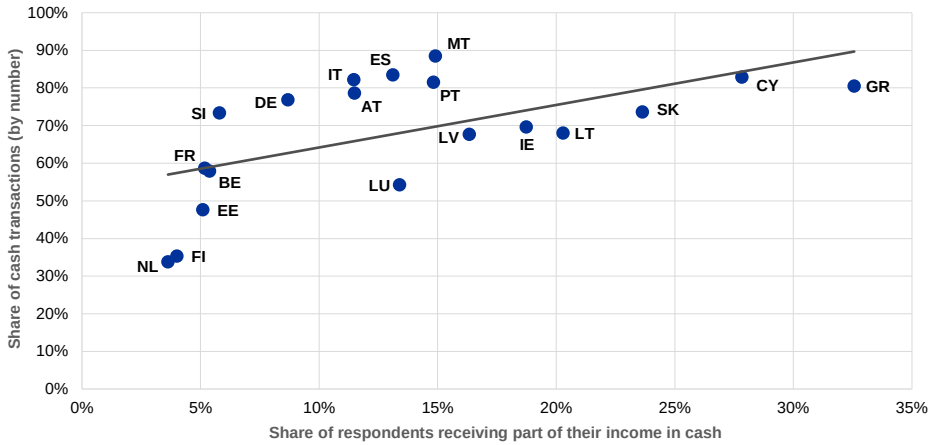


Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).
Notes: The data are for the euro area (19 countries).

As identified in the 2016 SUCH study, for most countries the results indicate a positive correlation between cash usage and cash received as part of income (Chart 62). At country level, a higher share of respondents receiving part of their income in cash is associated with a higher share of cash transactions. In general, the share of respondents who reported having received regular income in cash was highest in the countries which had the highest share of cash usage for making POS and P2P payments, and vice versa.

Chart 62

Cash income and cash payment behaviour



Sources: ECB (2019), De Nederlandsche Bank and the Dutch Payments Association (2019) and Deutsche Bundesbank (2019).

Socio-demographic variables reveal that younger respondents (18-24 years old) and those with a lower level of education (primary or lower secondary education) reported receiving cash as part of their regular income in higher proportions than other age groups and education categories. The type of occupation might explain why some individuals receive more cash income than others. For example, the proportion of respondents who reported receiving at least a quarter of their income in cash was higher for the self-employed than for other occupational groups.

7 Concluding remarks

The 2016 study on the use of cash by households (SUCH), published in 2017, was the first study that analysed consumers' payment behaviour in POS and P2P transactions for all 19 euro area countries. With the 2019 study on the payment attitudes of consumers in the euro area (SPACE) it is now possible to compare consumers' payment behaviour for all 19 euro area countries over time. The results of both studies confirm significant variations in payment behaviour and attitude both between euro area countries and between socio-demographic groups within individual countries.

Overall the study shows that 73% of all transactions in the euro area were carried out using cash and that these represented 48% of the total value of all payments made by consumers. This compares with 79% of transactions in cash, representing 54% of total value in 2016, as reported in the SUCH study. Cards continue to be the second most used payment instrument. Contactless technology was used for more than one in three card transactions.

Although the use of cash for POS and P2P payments has declined since the 2016 SUCH study, cash is still the main payment instrument used by consumers in the euro area both in terms of the total number of payments and in terms of the total value. The results of an additional ECB survey conducted in July 2020 to better understand the impact of the COVID-19 pandemic on payment behaviour show that the pandemic has influenced consumers' payment behaviour (40% of respondents reported paying less with cash since the start of the pandemic and 40% reported paying more with contactless cards). The convenience of cashless means of payments, in particular the increasing number of contactless cards and terminals as well as increases in the payment limit for contactless payments, were reported to be the main reasons for a shift in payment behaviour induced by the pandemic.

The study also provides an insight into consumers' preferences for payment instruments and new payment methods, as well as their perception of accessibility, acceptance and use of different payment instruments and new payment methods. In this regard, consumers reported that generally they still have good access to cash (89% of respondents). They also reported that cash was generally readily accepted at retailers (98%) and that cards and other means of payment were accepted in only 79% of cases.

In a world facing continuous change in the retail payment landscape and consumer preferences, the SUCH and SPACE surveys provide snapshots of payment behaviour and payment attitudes, making an important contribution to the debate on the importance of different payment instruments and their coexistence. When analysing the evolution of consumers' payment behaviour and payment preferences over time, it becomes evident that that these are only changing gradually. To monitor these changes and enable the ECB to take appropriate policy measures, it is important to repeat the study, applying the same methodology, at regular intervals.

Annex A

Diary survey questionnaire

Diary Module A
Point-of-sale and person-to-person payments

QA_1. How much cash did you have – e.g. in your wallet, purse or pockets – at the beginning of [INSERT DAY]?

Please report the value of all the cash you had in your wallet, purse or pockets, including the small change.

€ ___ ___. __ __

Don't know/Prefer not to say

QA_2a. How much cash, if any, did you add to this amount during the day?

This includes cash you withdrew from an automated teller machine (ATM), money taken from your cash reserves at home, and any cash you may have received on [INSERT DAY], such as a reimbursement or a gift.

If you added cash more than once during the day, please tell us about the amount you added the first time.

€ ___ ___. __ __

No cash added

Don't know

If reported an amount in QA_2a, ask QA_3a. Otherwise, move to QA_4.

QA_3a. Where did this € [insert amount from QA_2a] come from?

1. An ATM
2. Bank counter
3. Cash back obtained from using a card at the supermarket, shop or petrol station
4. Your cash reserves, e.g. cash jar or cash reserves at home

5. Family, friends or colleagues

6. Income received in cash

7. Other source

8. Don’t know

QA_2b. How much MORE cash in total, excluding the € [insert amount from QA_2a] you have already mentioned, did you add to this amount on [INSERT DAY]?

€ ___ ___. __ __

No MORE cash added

Don’t know

If reported an amount in QA_2b, ask QA_3b. Otherwise, move to QA_4.

QA_3b. Where did you get the € [insert amount from QA_2b]?

1. An ATM

2. Bank counter

3. Cash back obtained from using a card at the supermarket, shop or petrol station

4. Your cash reserves, e.g. cash jar or cash reserves at home

5. Family, friends or colleagues

6. Income received in cash

7. Other source

8. Don’t know

QA_4. From the CASH you had in your wallet, purse, or pockets, how much did you put aside on [INSERT DAY]?

€ ___ ___. __ __

None

Don’t know

The following questions are about payments you made at a physical location or to a person on [INSERT DAY]. Physical locations include shops, restaurants, petrol

stations or hairdressers. Payments to a person include payments to friends or pocket money given to children.

When answering, also take into consideration any small payments you may have made.

QA_5a. What was the amount of the first payment, if any?

€ ___ ___. __ __

No payments made on [INSERT DAY]

Don't know

If reported an amount in QA_5a, ask QA_6a. Otherwise, move to QA_9a.

QA_6a. Where or for what was the payment made?

1. Supermarket
2. Small shop for day-to-day items (e.g. bakery, drugstore)
3. On the street or at a market (e.g. newspaper stand, florist)
4. Shop selling durable goods (e.g. clothing, toys, electronics)
5. Petrol station
6. Restaurant, bar, cafe
7. Hotel or similar
8. A venue for culture, sports or entertainment (e.g. museum, swimming pool, amusement park)
9. Vending or ticketing machine
10. Services outside the home (e.g. hairdresser, dry cleaning, car maintenance, doctor)
11. Services inside or around the home (e.g. cleaning, babysitting, home repairs)
12. Office of a public authority or post office
13. Charity
14. Other person-to-person payment
15. Other physical location
16. Don't know

If reported an amount in QA_5a, ask QA_7a. Otherwise, move to QA_9a.

QA_7a. How did you make the payment?

1. Cash
2. Debit card
3. Credit card
4. Mobile phone
5. Bank cheque [only in countries that have bank cheques]
6. Credit transfer (also via online banking)
7. Direct debit (i.e. a payment made automatically from your bank account)
8. Other
9. Don't know

If answer to QA_7a is option 2 or 3, ask QA_7ai.

QA_7ai. How was the card transaction carried out?

1. By inserting the card into a terminal with PIN/signature
2. Using contactless technology and PIN
3. Using contactless technology without PIN
4. Don't know

If answer to QA_7a is option 4, ask QA_7aii.

QA_7aii. How was the mobile phone payment carried out?

1. Contactless using a mobile phone at a payment terminal
2. Mobile payment using an App
3. Don't know

If answer to QA_7a is option 1, ask QA_8a.

QA_8a. Were other payment methods such as cards accepted?

1. Yes

2. No

3. Don’t know

If answer to QA_7a is an option between 2 and 8, ask QA_8ai.

QA_8ai. Was cash accepted?

1. Yes

2. No

3. Don’t know

If reported an amount in QA_5a, ask again all the questions from QA_5a to QA_8ai for the seven remaining payment methods. Otherwise, move to QA_9a.

QA_9a. Based on all your cash transactions, at the end of the day you should have had € [INSERT AMOUNT]. Is this the amount you had at the end of the day?

1. Yes, exactly

2. Yes, but it differs by a few cents

3. Yes, but it differs by a few euros

4. No

5. Don’t know

If answer to QA_9a is option 4, ask QA_9b.

QA_9b. What was the amount you had at the end of the day?

€ ___ ___. __ __

Don’t know

Diary Module B
Online payments

Please report any online payments you made on [INSERT DAY]. If you made any telephone or mail order payments, please also report them here.

QB_1. Did you make any purchases via the internet, over the telephone, or by mail order on [INSERT DAY]? Examples include purchases of electronic goods, clothes, hotel bookings or tickets.

1. Yes
2. No
3. Don’t know

If answer to QB_1 is option 1, ask QB_2. Otherwise, move to Module C: Recurring Payments.

QB_2. What was your first purchase on [INSERT DAY]?

1. Fashion or sports goods (e.g. clothes, sports gear)
2. Electronic goods or household appliances (e.g. laptop, washing machine)
3. Food and daily supplies (e.g. pizza delivery, supermarket delivery)
4. Medicine
5. Media, games or entertainment (e.g. e-books, games, music)
6. Charitable donations (e.g. church, Red Cross, crowdfunding platforms)
7. Travel and accommodation
8. Furniture and other household items
9. Tickets for events and attractions (e.g. concerts, theme parks)
10. Other
11. Don’t know

QB_3. What was the amount of this first payment in euro?

€ ___ ___. __ __

Don’t know

QB_4. How did you pay for this purchase?

1. Credit card
2. Debit card
3. PayPal

4. Other online payment method (e.g. Sofort, iDEAL, Klarna, Afterpay)
5. Direct debit
6. Credit transfer
7. Cash
8. A gift card or voucher / loyalty points (e.g. Amazon or iTunes gift card)
9. Bank cheque [only in countries that have bank cheques]
10. Crypto-assets (virtual currencies, e.g. Bitcoin, Ethereum)
11. Other
12. Don't know

All the questions in module B are repeated for seven more online payments.

Diary Module C
Bill payments

Now we would like to ask you about bill payments you have made in the last seven days. By bill payments we mean recurring payments (e.g. rent, utilities, subscriptions) or payments of invoices (e.g. medical bills or plumbing bills). For most bill payments there is an accompanying paper or digital invoice.

QC_1. Did you PERSONALLY make a bill payment in the last seven days?

1. Yes, and in your household you normally make all of these payments
2. Yes, and in your household you make some of these payments
3. No
4. Don't know

If answer to QC_1 is option 3 or 4, ask QQ_A2.

QC_2. What was this payment for?

1. Rent or mortgage
2. Utilities (e.g. gas, electricity, water)
3. Insurance (e.g. health, car, home)

4. Telephone and internet bills
5. Taxes and public charges (e.g. to local authorities)
6. Subscriptions (e.g. magazines, sports club, streaming TV)
7. Medical expenses
8. Tuition fees
9. Services in and around the house (e.g. plumbing, painting or decorating)
10. Charitable donations (e.g. church, Red Cross)
11. Other services
12. Don't know

QC_3. How much did you pay?

€ ___ ___. __ __

Don't know

QC_4. How did you pay?

1. Debit card
2. Credit card
3. Direct debit
4. Credit transfer
5. Bank cheque [only in countries that have bank cheques]
6. Cash
7. Other
8. Don't know

All the questions in module C are repeated for seven more online payments.

Accompanying questionnaire

QQ_a1. Which of the following payment methods do you currently have access to?

1. Debit or credit card without contactless technology
2. Debit or credit card with contactless technology
3. Bank cheque [only in countries that have bank cheques]
4. Credit transfer (i.e. a payment made by you, when visiting a bank branch or using your online banking)
5. Direct debit (i.e. payment automatically deducted from your bank account)
6. Internet payment methods (e.g. PayPal)
7. Mobile payment app (e.g. Apple Pay)
8. Crypto-assets (e.g. virtual currencies, such as Bitcoin, Ethereum)
9. Other
10. None
11. Don’t know

QQ_a2. When you need to withdraw cash, how easy or difficult do you usually find it to get to an ATM or a bank?

1. Very easy
2. Fairly easy
3. Fairly difficult
4. Very difficult
5. Don’t know

QQ_a3. If you were offered various payment methods in a shop, what would be your preference?

1. Cash
2. Card or other cashless payment
3. You have no clear preference between a cash and a non-cash payment

4. Don’t know

QQ_a4. How important is it for you to have the option of using cash?

Give your answer on a scale of 1 to 10, where 1 means not important at all and 10 means very important.

___ ___

Don’t know

QQ_a5. How do you make each of the following recurring payments?

If you use more than one payment method for a category, please select the one you use most often.

Rent or mortgage:

1. Cash
2. Payment card
3. Automatically via direct debit or standing order
4. Credit transfer
5. Other (e.g. PayPal)
6. You do not make this payment
7. Don’t know

Electricity bill:

1. Cash
2. Payment card
3. Automatically via direct debit or standing order
4. Credit transfer
5. Other (e.g. PayPal)
6. You do not make this payment
7. Don’t know

Telephone bill:

1. Cash
2. Payment card
3. Automatically via direct debit or standing order
4. Credit transfer
5. Other (e.g. PayPal)
6. You do not make this payment
7. Don’t know

QQ_a6. In the last month, have you withdrawn a larger than usual amount from an ATM or bank counter, for example to make an expensive purchase or to put aside for later?

If you have withdrawn a larger than usual amount more than once, please report the total value.

1. Yes, €250 or less
2. Yes, between €250 and €500
3. Yes, between €500 and €1,000
4. Yes, between €1,000 and €2,500
5. Yes, between €2,500 and €5,000
6. Yes, more than €5,000
7. No
8. Don’t know

QQ_a7. In the last 12 months, have you had a €500, €200 or €100 banknote in your possession?

1. Yes, a €500 banknote
2. Yes, a €200 banknote
3. Yes, a €100 banknote
4. No
5. Don’t know

QQ_a8. How much of your regular income (e.g. wages, pensions or allowances) do you receive in cash?

1. None
2. Up to one-quarter
3. Between one-quarter and one-half
4. Half of your regular income is in cash
5. Between one-half and three-quarters
6. More than three-quarters
7. Don’t know

QQ_a9. Do you personally keep extra cash (e.g. to top up your wallet, as a precautionary reserve or as an alternative way of saving) that is not in your wallet, purse or pocket?

1. Yes
2. No
3. Prefer not to say
4. Don’t know

If answer to QQ_a9 is option 1, ask QQ_a10.

QQ_a10. Roughly how much cash do you keep at home or somewhere else that is not in your wallet, purse or pocket?

1. €100 or less
2. Between €100 and €250
3. Between €250 and €500
4. Between €500 and €1,000
5. Between €1,000 and €5,000
6. Between €5,000 and €10,000
7. More than €10,000
8. Prefer not to say
9. Don’t know

Annex B

Euro area

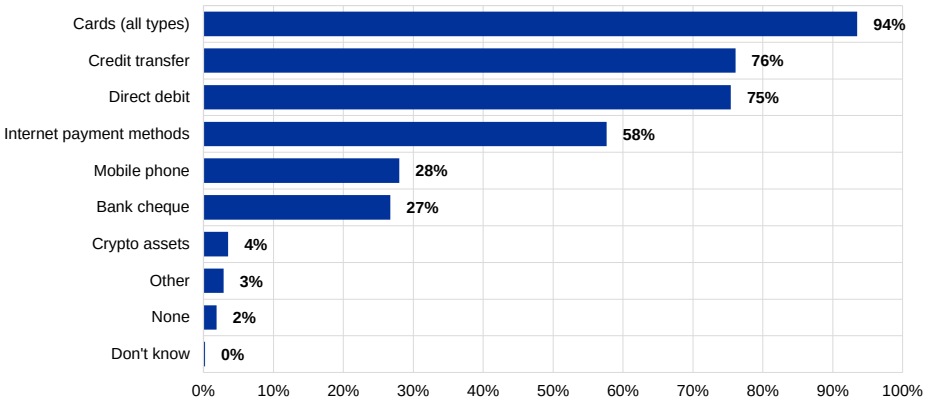
Table B.1.1

General SPACE study info (without DE and NL)

Sample size	41,155	
via telephone		20,039
via internet		20,158
via face to face interview		958
Reported payments	**Number**	**Value**
Payment transactions in sample	119,053	€9,149,958
of which POS and P2P	68,023	€1,780,543
of which online purchases	7,371	€519,595
of which bill payments	43,659	€6,849,820

Chart B.1.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

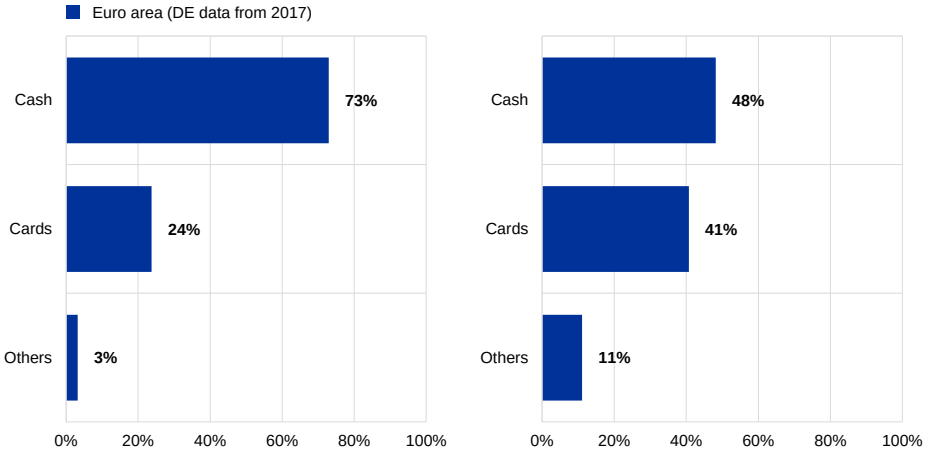
Table B.1.2

General SPACE study info

Payment type	Average number and value of transaction		
	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P (EA19)	1.57	€25.55	€40.12
Cash	1.14	€16.92	€19.33
Non-cash	0.43	€48.56	€20.80
Online purchases (EA18 – without DE)	0.16	€66.86	€10.86
Bill payments (EA18 – without DE)	0.13	€160.83	€21.45
Average payments	**1.87**	**€38.82**	**€72.43**

Chart B.1.2

Share of payment instruments for POS and P2P transactions



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
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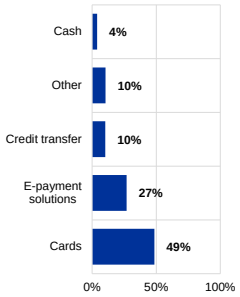
Remote payments: include payments made online, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

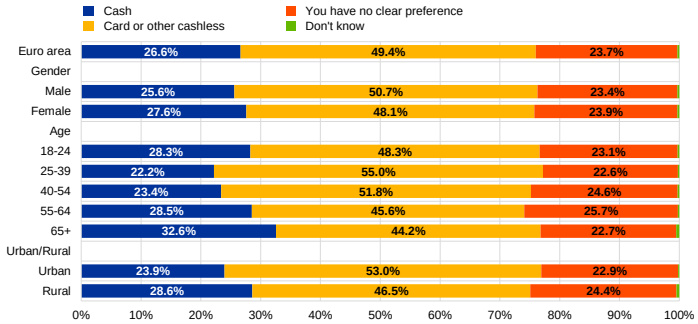
Chart B.1.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

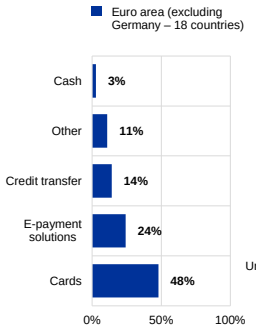
Share of payment instruments for online transactions (number)



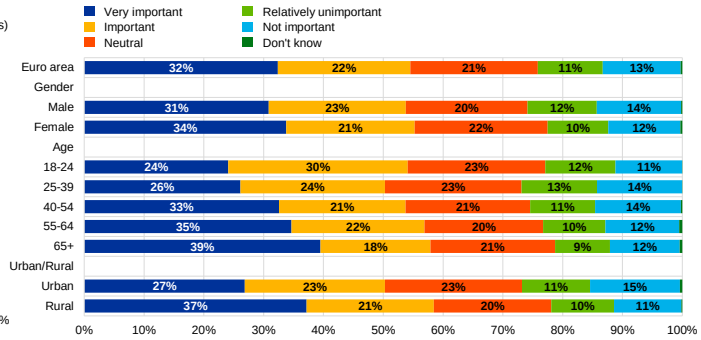
Preferred payment instrument



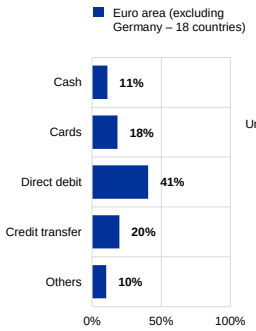
Share of payment instruments for online transactions (value)



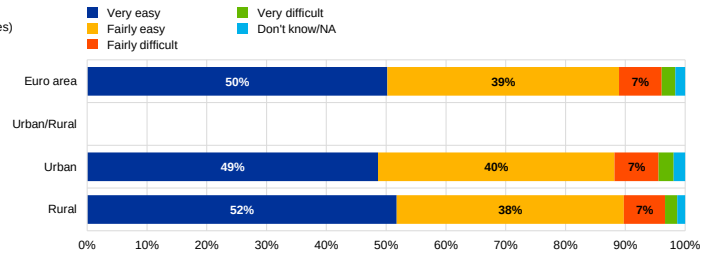
Importance of having the option to pay with cash



Share of payment instruments for bill payments (number)



Ease of access to cash withdrawals at an ATM or a bank



See note from previous page.

Austria

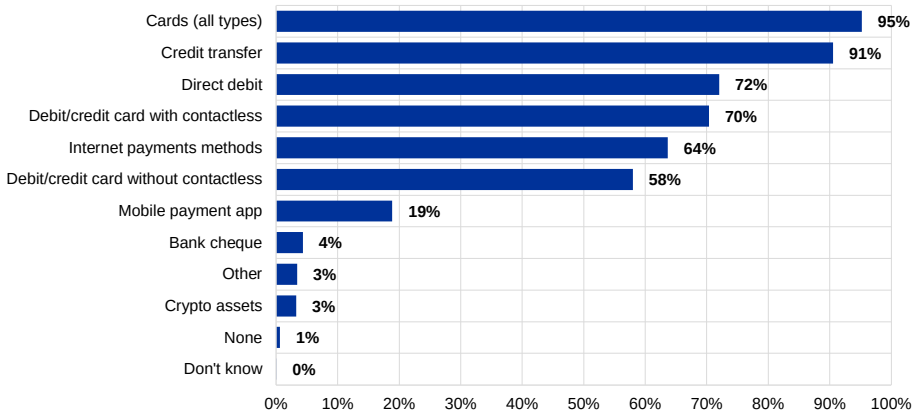
Table B.2.1

General Information

Sample size	2,111	
via internet		1,052
via telephone		1,059
Reported payments	**Number**	**Value**
Payment transaction in sample	6,898	€920,125
via POS and P2P	3,672	€140,799
via online purchases	525	€58,389
via bill payments	2,701	€720,937

Chart B.2.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Table B.2.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.74	€38.34	€66.70	1.57	€25.55	€40.12
Cash	1.37	€28.48	€38.96	1.14	€16.92	€19.33
Non-cash	0.37	€74.63	€27.74	0.43	€48.56	€20.80
Online purchases	0.25	€111.29	€27.66	0.16	€66.86	€10.86
Bill payments	0.18	€266.88	€48.79	0.13	€160.83	€21.45
Average payments	**2.17**	**€65.94**	**€143.14**	**1.87**	**€38.82**	**€72.43**

Chart B.2.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

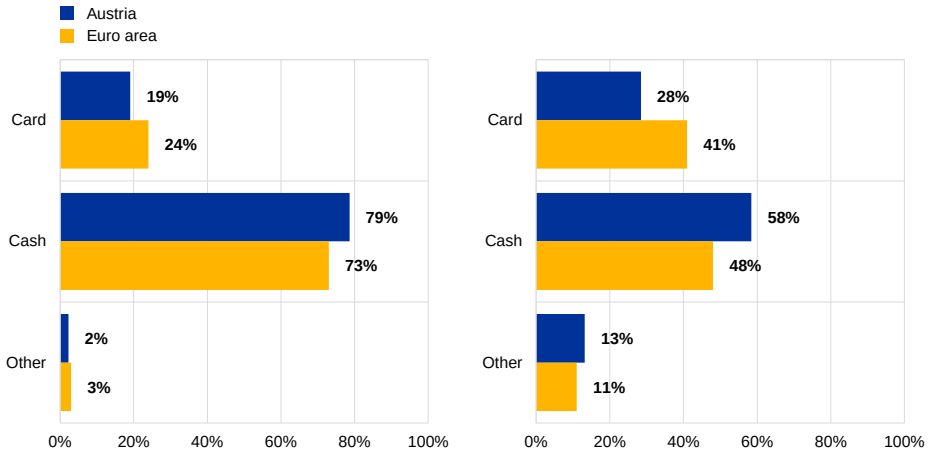


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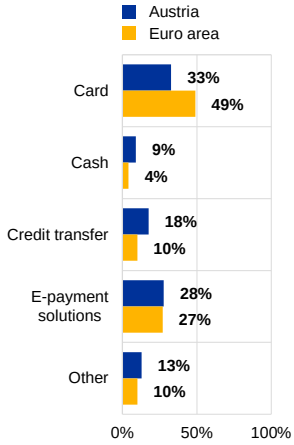
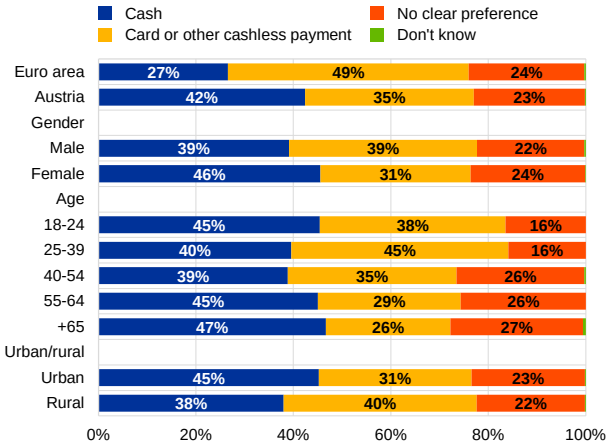
Chart B.2.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

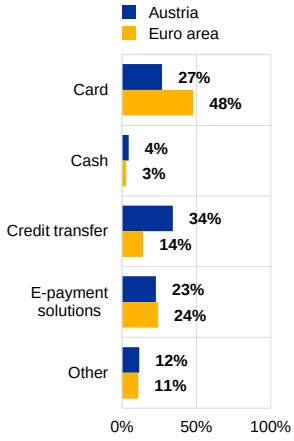
Share of payment instruments for online transactions (number)



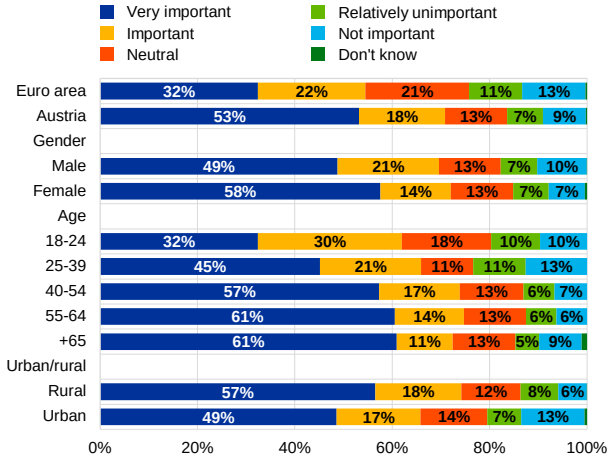
Preferred payment instrument



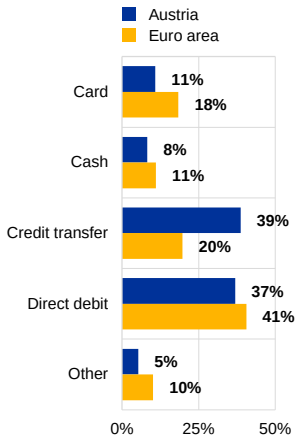
Share of payment instruments for online transactions (value)



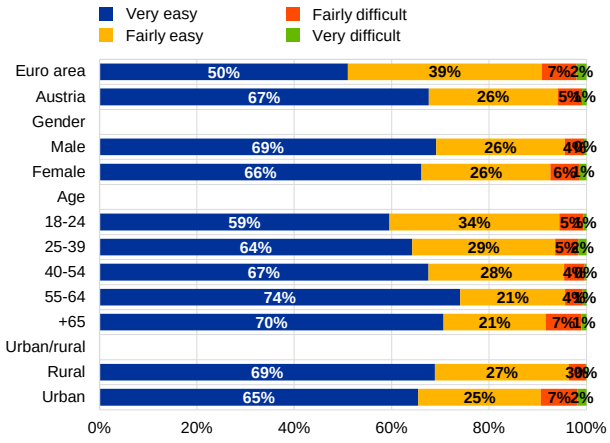
Importance to have the option to pay in cash



Share of payment instruments for bill transactions (number)



Ease to withdraw cash from an ATM or a bank



See note from previous page.

Belgium

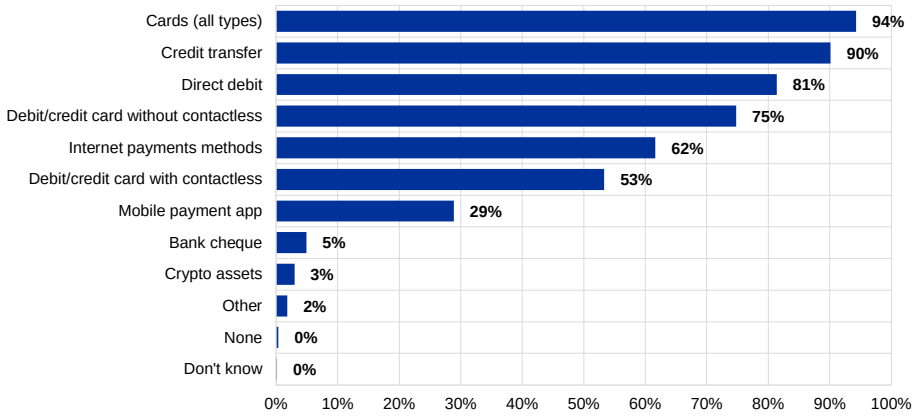
Table B.3.1

General Information

Sample size	3,032	
via internet		1,519
via telephone		1,513
Reported payments	**Number**	**Value**
Payment transaction in sample	8,814	€985,146
via POS and P2P	3,965	€128,818
via online purchases	619	€62,695
via bill payments	4,230	€793,632

Chart B.3.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

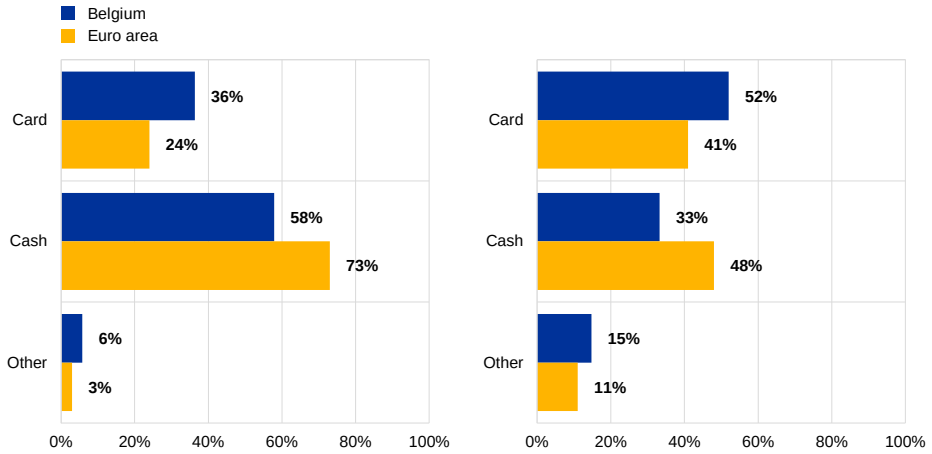
Table B.3.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.31	€32.49	€42.49	1.57	€25.55	€40.12
Cash	0.76	€18.66	€14.13	1.14	€16.92	€19.33
Non-cash	0.55	€51.50	€28.36	0.43	€48.56	€20.80
Online purchases	0.20	€101.25	€20.68	0.16	€66.86	€10.86
Bill payments	0.20	€187.61	€37.39	0.13	€160.83	€21.45
Average payments	**1.71**	**€58.76**	**€100.56**	**1.87**	**€38.82**	**€72.43**

Chart B.3.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

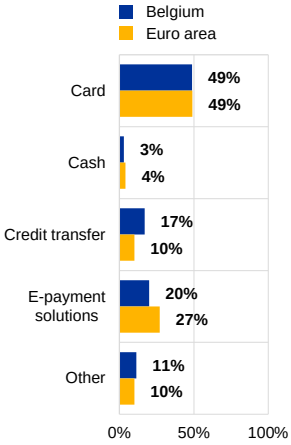


POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

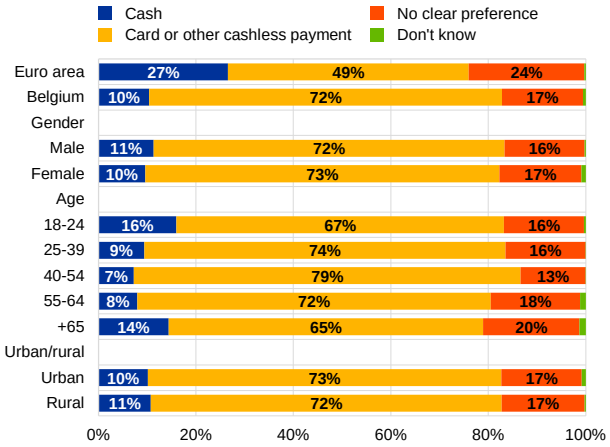
Chart B.3.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

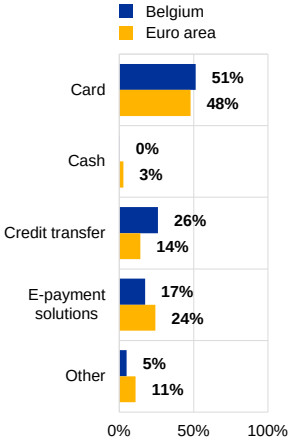
Share of payment instruments for online transactions (number)



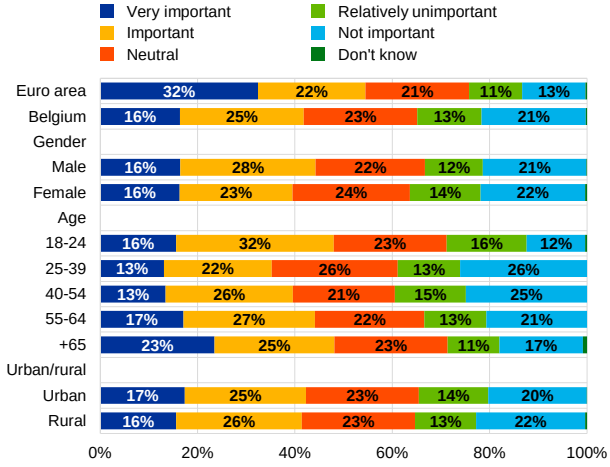
Preferred payment instrument



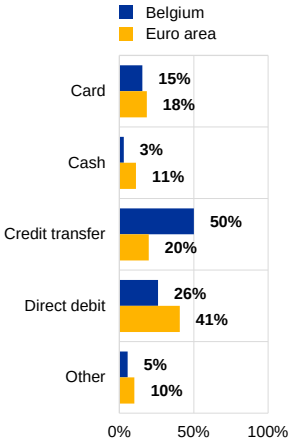
Share of payment instruments for online transactions (value)



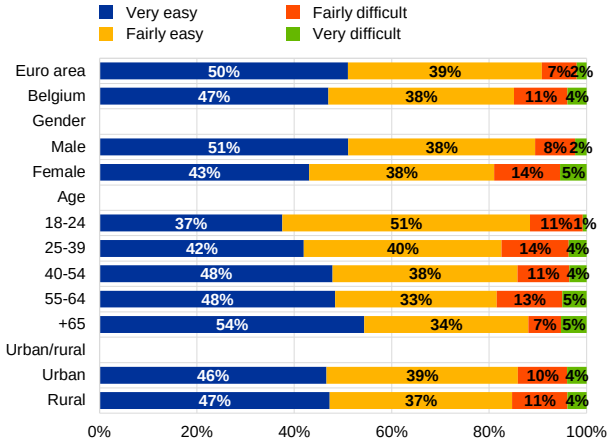
Importance to have the option to pay in cash



Share of payment instruments for bill transactions (number)



Ease to withdraw cash from an ATM or a bank



See note from previous page.

Cyprus

Table B.4.1

General Information

Sample size	508	
face to face		508
Reported payments	**Number**	**Value**
Payment transaction in sample	3,219	€122,202
via POS and P2P (3 days)	2,795	€68,593
via online purchases (3 days)	37	€1,992
via bill payments	387	€51,617

Chart B.4.1

Access to payment instruments other than cash

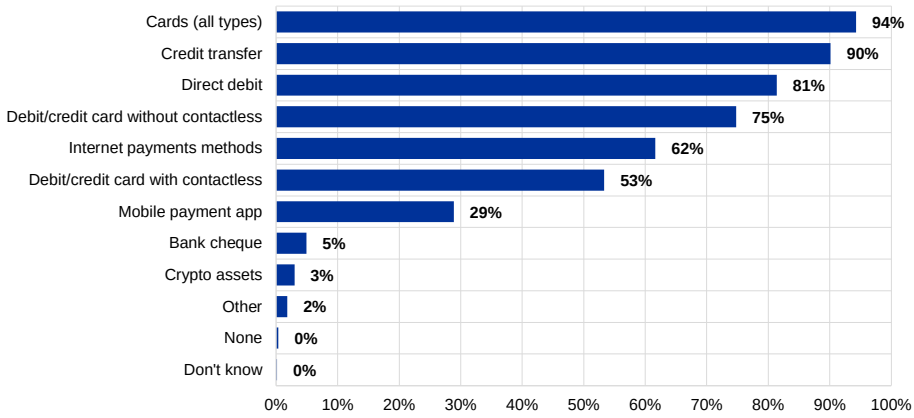


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Table B.4.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.83	€24.54	€45.01	1.57	€25.55	€40.12
Cash	1.52	€21.53	€32.72	1.14	€16.92	€19.33
Non-cash	0.31	€39.12	€12.28	0.43	€48.56	€20.80
Online purchases	0.02	€53.20	€1.31	0.16	€66.86	€10.86
Bill payments	0.11	€133.52	€14.52	0.13	€160.83	€21.45
Average payments	**1.97**	**€30.92**	**€60.83**	**1.87**	**€38.82**	**€72.43**

Chart B.4.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

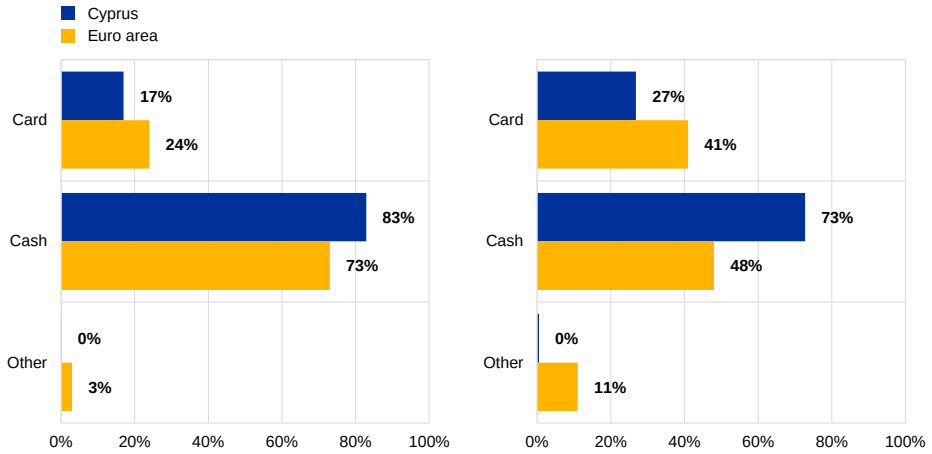

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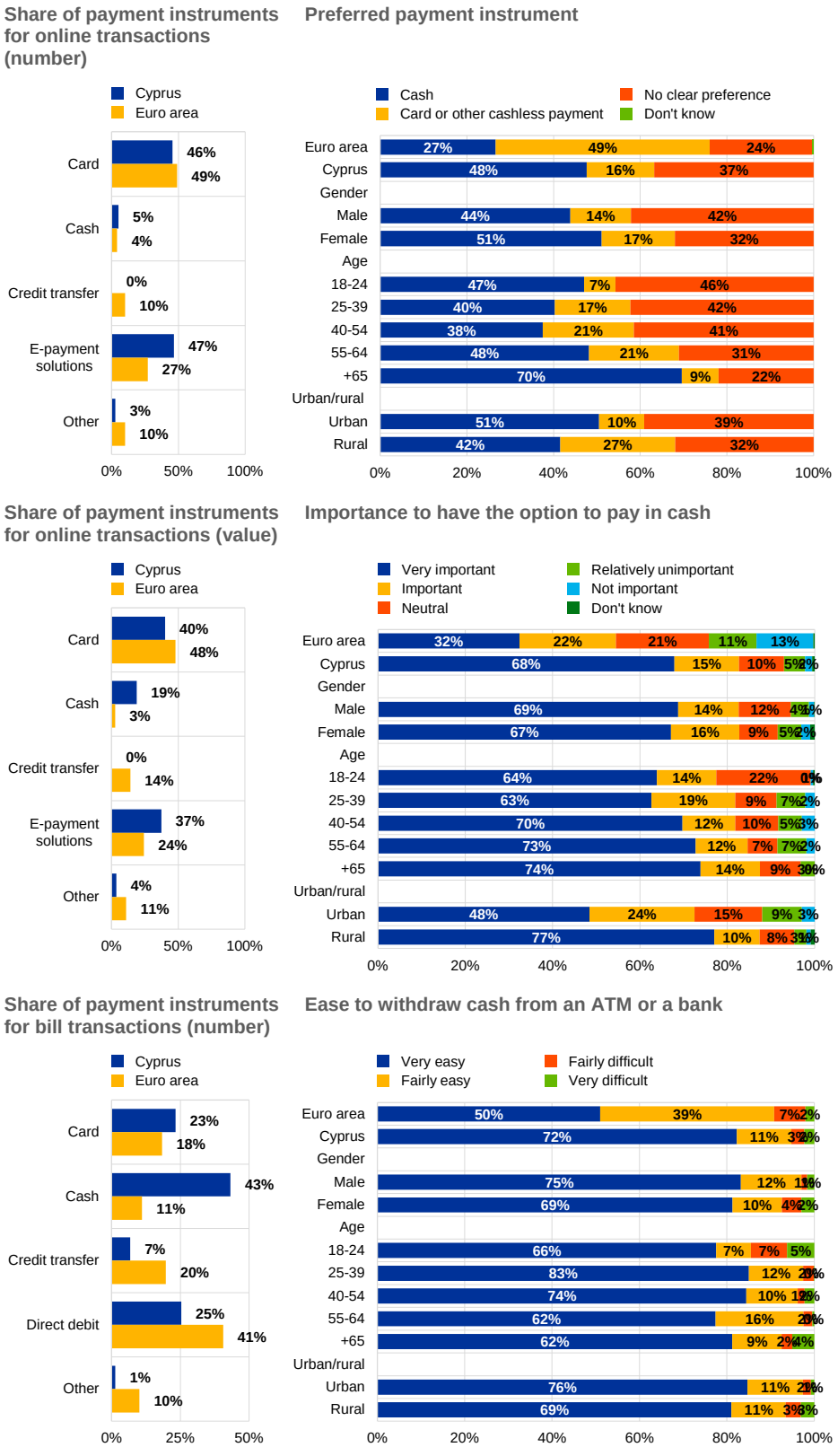
Chart B.4.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Estonia

Table B.5.1

General Information

Sample size	3,023	
via internet		1,523
via telephone		1,500
Reported payments	**Number**	**Value**
Payment transaction in sample	7,642	€446,668
via POS and P2P	3,491	€73,946
via online purchases	683	€43,643
via bill payments	3,468	€329,079

Chart B.5.1

Access to payment instruments other than cash

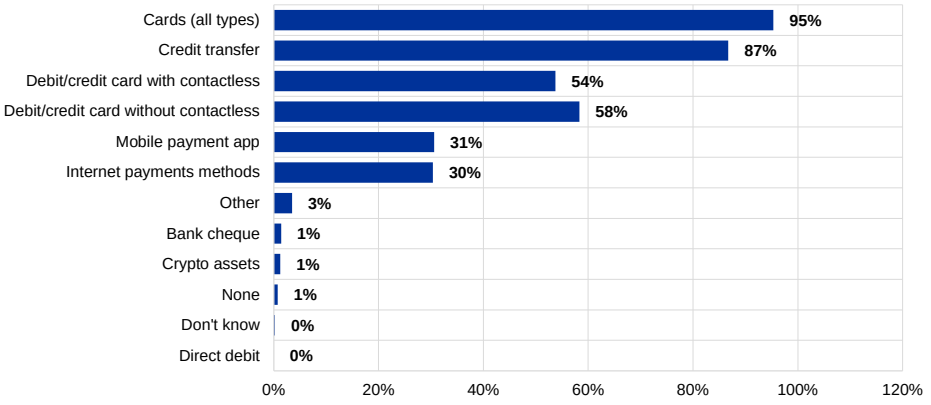


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Table B.5.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.15	€21.18	€24.46	1.57	€25.55	€40.12
Cash	0.55	€18.33	€10.08	1.14	€16.92	€19.33
Non-cash	0.61	€23.77	€14.39	0.43	€48.56	€20.80
Online purchases	0.23	€63.93	€14.44	0.16	€66.86	€10.86
Bill payments	0.16	€94.88	€15.55	0.13	€160.83	€21.45
Average payments	**1.54**	**€35.25**	**€54.45**	**1.87**	**€38.82**	**€72.43**

Chart B.5.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

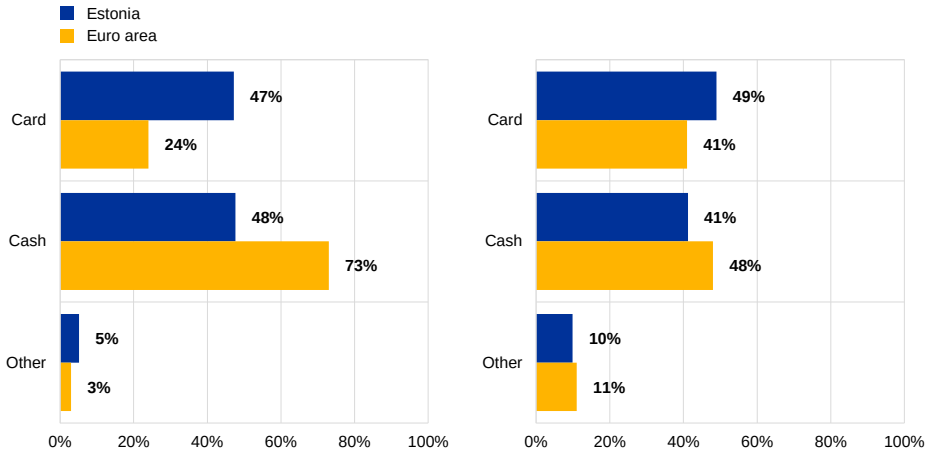

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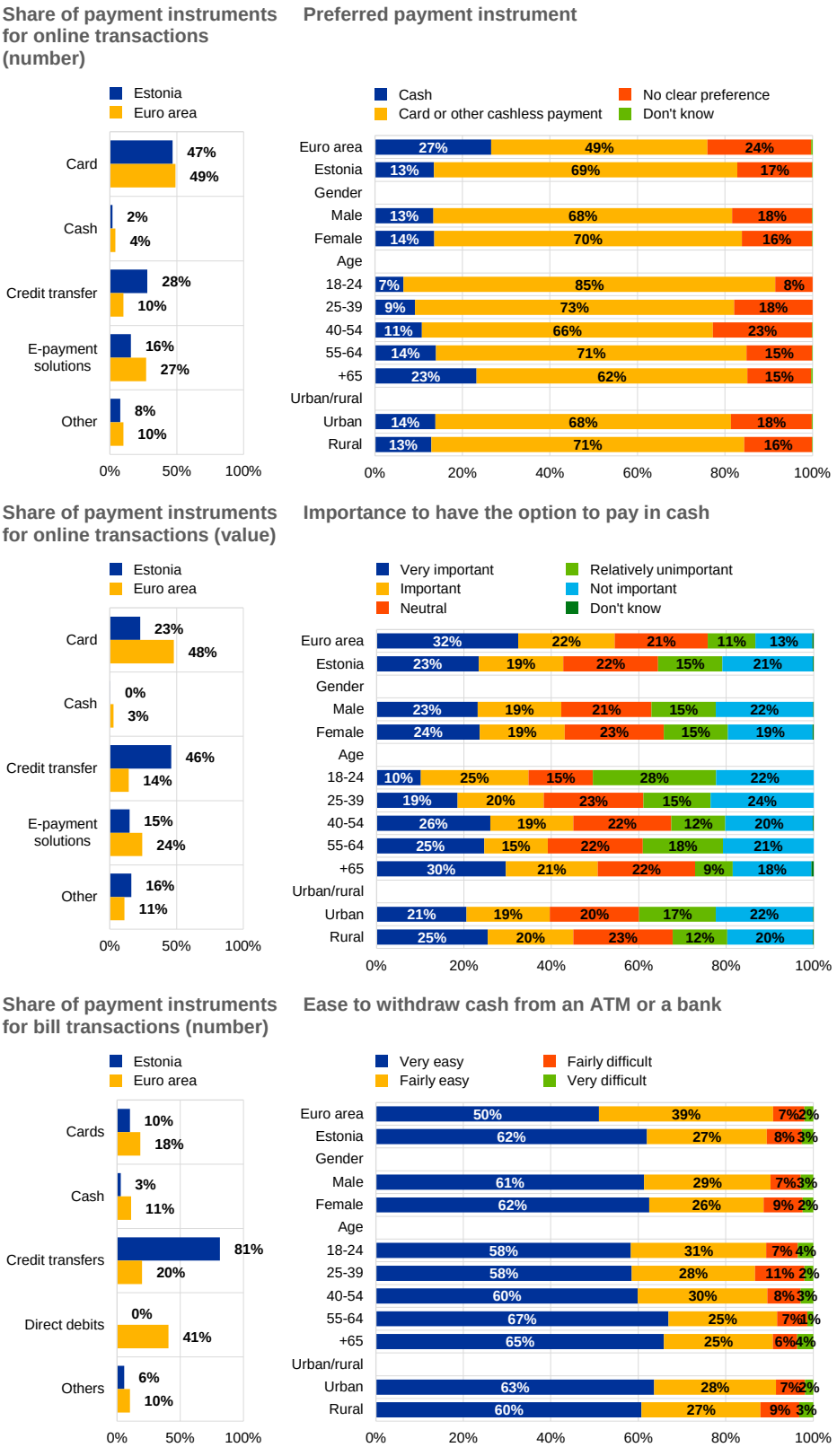
Chart B.5.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Spain

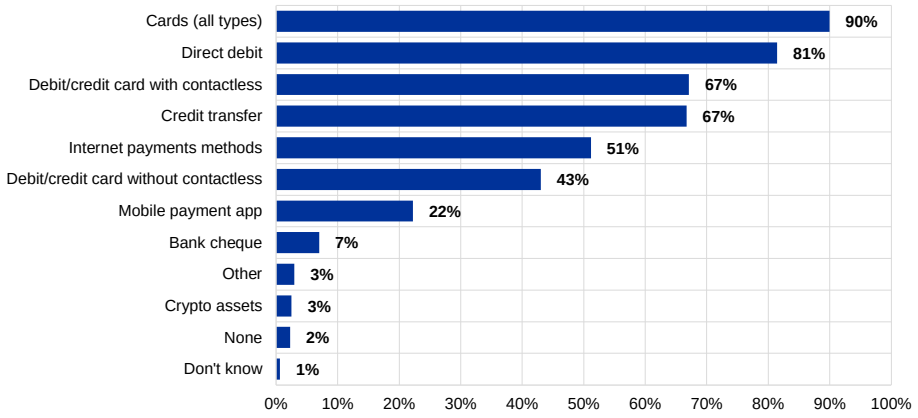
Table B.6.1

General Information

Sample size	4,157	
via internet		2,060
via telephone		2,097
Reported payments	**Number**	**Value**
Payment transaction in sample	9,799	€496,024
via POS and P2P	6,700	€124,118
via online purchases	636	€32,049
via bill payments	2,463	€339,858

Chart B.6.1

Access to payment instruments other than cash



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Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

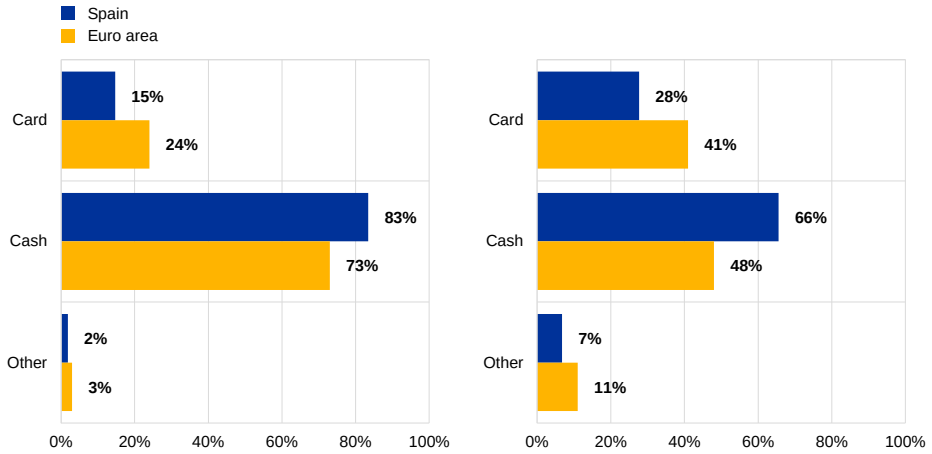
Table B.6.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.61	€18.52	€29.86	1.57	€25.55	€40.12
Cash	1.34	€14.56	€19.57	1.14	€16.92	€19.33
Non-cash	0.27	€38.52	€10.28	0.43	€48.56	€20.80
Online purchases	0.15	€50.41	€7.71	0.16	€66.86	€10.86
Bill payments	0.08	€138.01	€11.68	0.13	€160.83	€21.45
Average payments	**1.85**	**€26.63**	**€49.25**	**1.87**	**€38.82**	**€72.43**

Chart B.6.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
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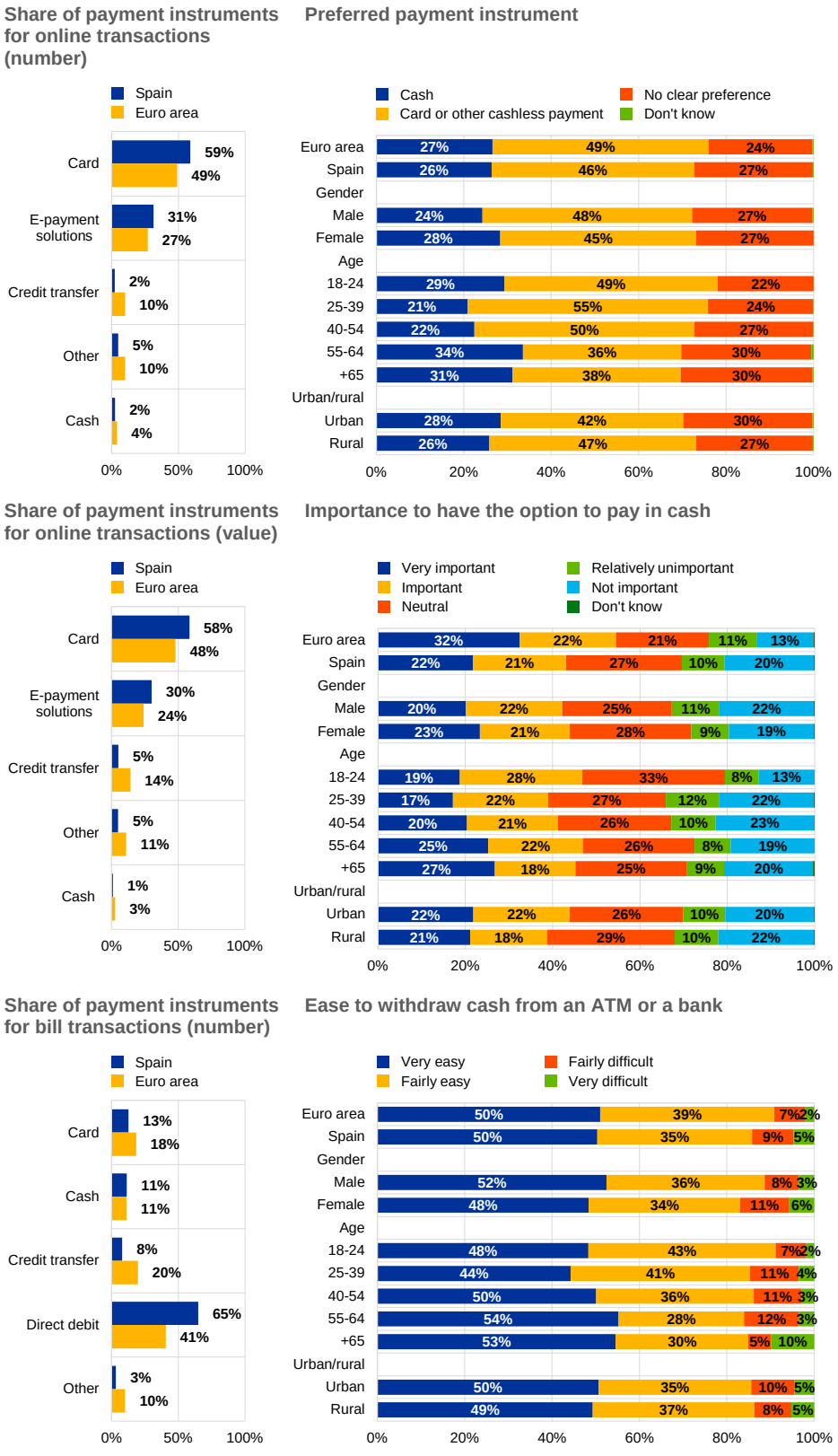
Chart B.6.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Finland

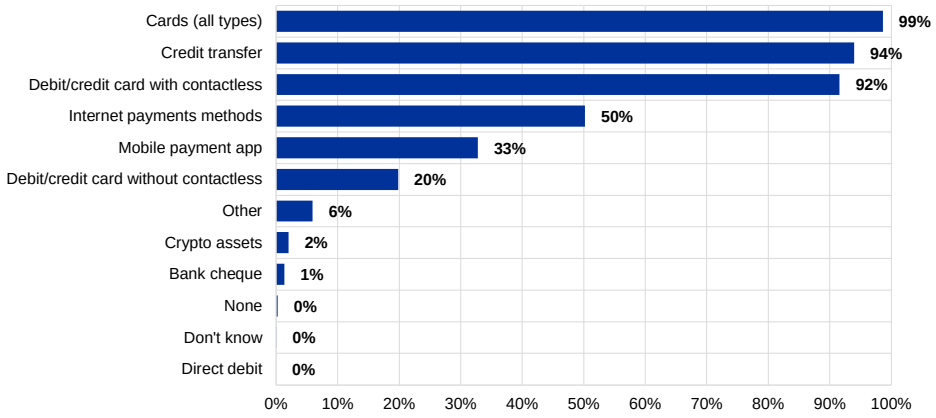
Table B.7.1

General Information

Sample size	3,023	
via internet		1,514
via telephone		1,509
Reported payments	**Number**	**Value**
Payment transaction in sample	8,774	€948,786
via POS and P2P	4,158	€115,380
via online purchases	461	€39,568
via bill payments	4,155	€793,838

Chart B.7.1

Access to payment instruments other than cash



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Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Table B.7.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.38	€27.75	€38.17	1.57	€25.55	€40.12
Cash	0.49	€20.88	€10.14	1.14	€16.92	€19.33
Non-cash	0.89	€31.49	€28.03	0.43	€48.56	€20.80
Online purchases	0.15	€85.83	€13.09	0.16	€66.86	€10.86
Bill payments	0.20	€191.07	€37.51	0.13	€160.83	€21.45
Average payments	**1.72**	**€51.48**	**€88.77**	**1.87**	**€38.82**	**€72.43**

Chart B.7.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

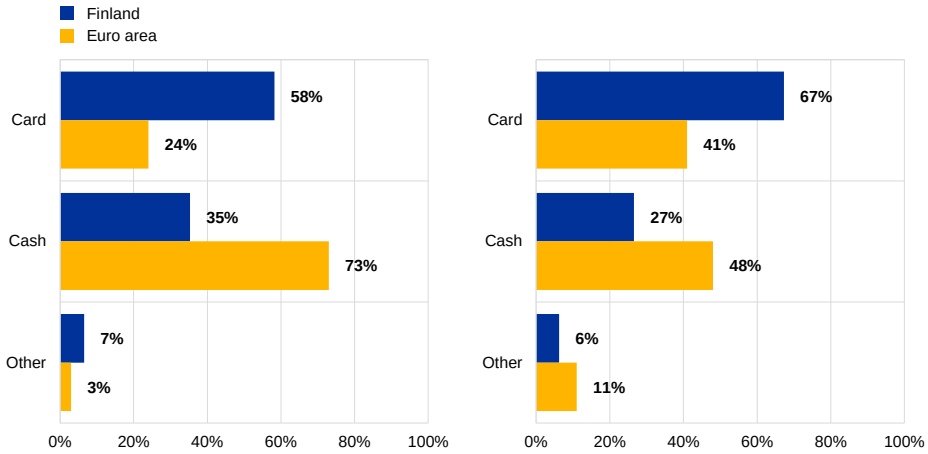

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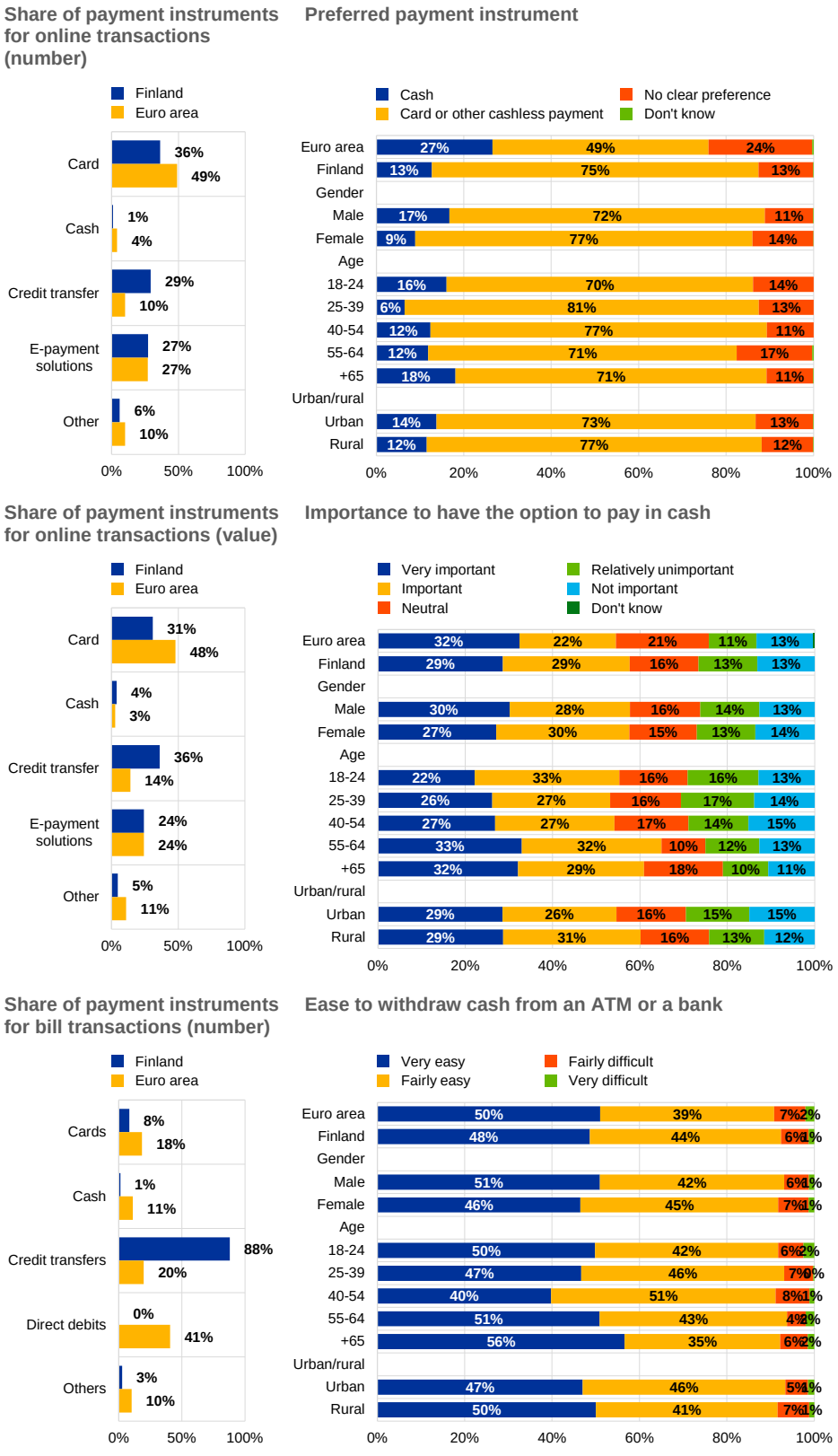
Chart B.7.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

France

Table B.8.1

General Information

Sample size	4,489	
via internet		2,212
via telephone		2,277
Reported payments	**Number**	**Value**
Payment transaction in sample	11,340	€1,129,055
via POS and P2P	5,755	€172,948
via online purchases	809	€53,812
via bill payments	4,777	€902,295

Chart B.8.1

Access to payment instruments other than cash

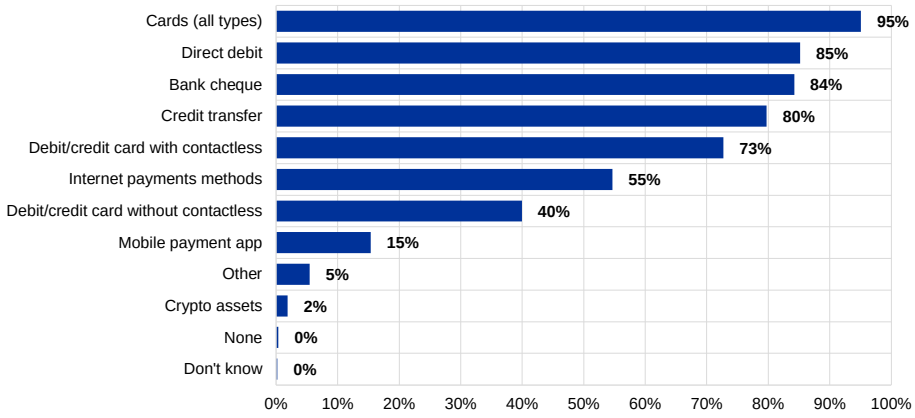


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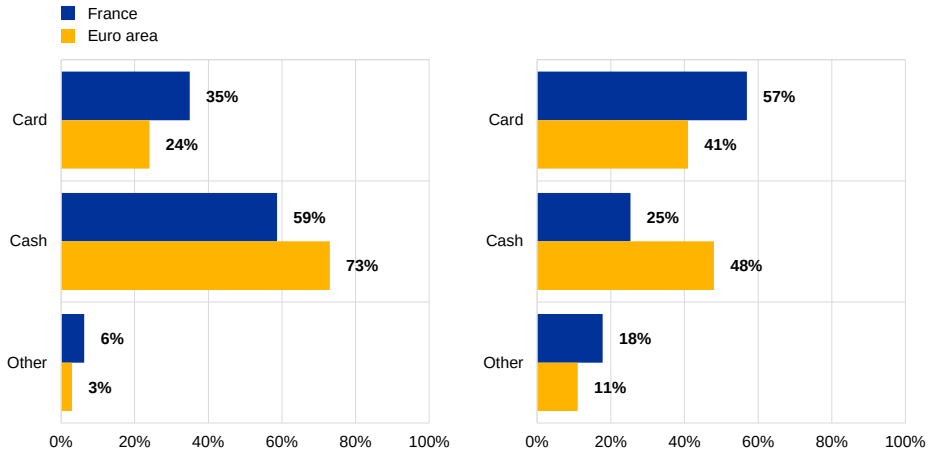
Table B.8.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.28	€30.05	€38.53	1.57	€25.55	€40.12
Cash	0.75	€12.95	€9.75	1.14	€16.92	€19.33
Non-cash	0.53	€54.36	€28.78	0.43	€48.56	€20.80
Online purchases	0.18	€66.55	€11.99	0.16	€66.86	€10.86
Bill payments	0.15	€188.89	€28.71	0.13	€160.83	€21.45
Average payments	**1.61**	**€49.08**	**€79.23**	**1.87**	**€38.82**	**€72.43**

Chart B.8.2

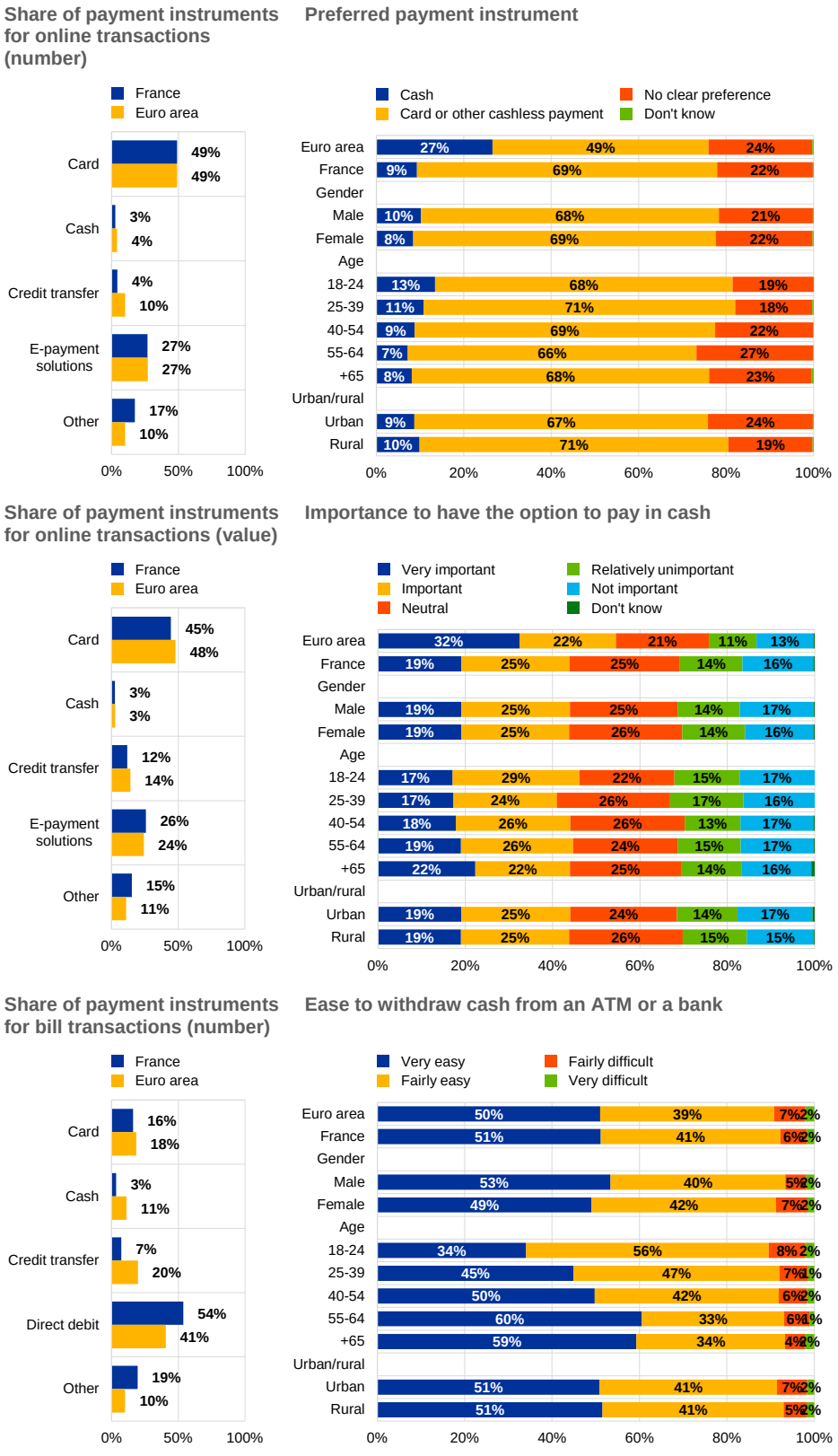
Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Chart B.8.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Greece

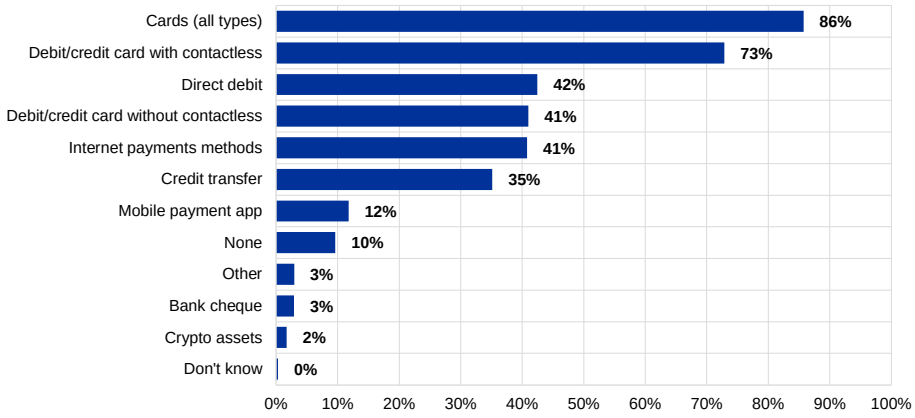
Table B.9.1

General Information

Sample size	2,109	
via internet		1,054
via telephone		1,055
Reported payments	**Number**	**Value**
Payment transaction in sample	6,370	€357,583
via POS and P2P	4,086	€118,977
via online purchases	326	€15,180
via bill payments	1,958	€223,425

Chart B.9.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

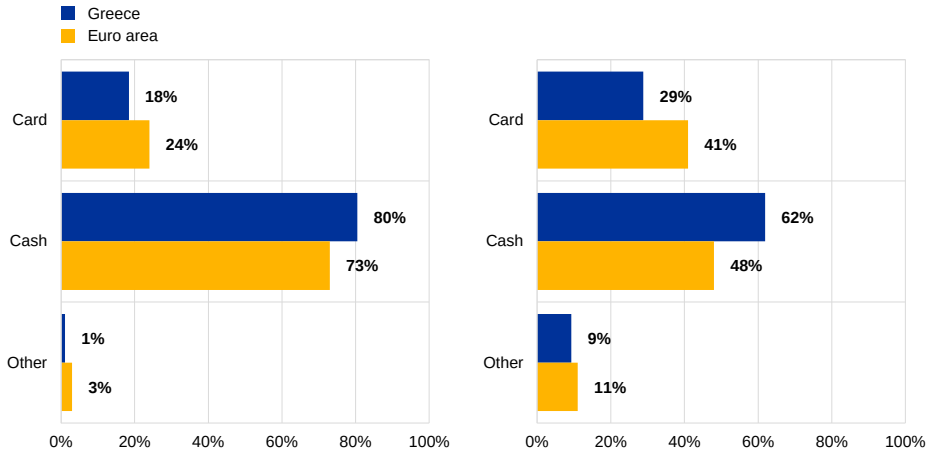
Table B.9.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.94	€29.12	€56.41	1.57	€25.55	€40.12
Cash	1.56	€22.39	€34.92	1.14	€16.92	€19.33
Non-cash	0.38	€56.88	€21.50	0.43	€48.56	€20.80
Online purchases	0.15	€46.51	€7.20	0.16	€66.86	€10.86
Bill payments	0.13	€114.08	€15.13	0.13	€160.83	€21.45
Average payments	**2.22**	**€35.40**	**€78.75**	**1.87**	**€38.82**	**€72.43**

Chart B.9.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

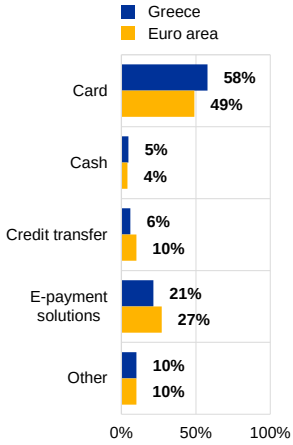


POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

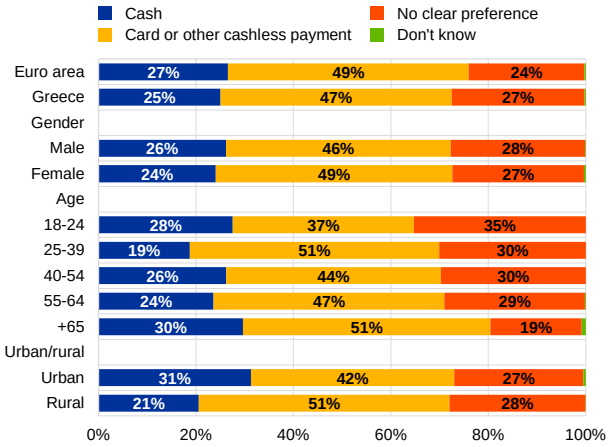
Chart B.9.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

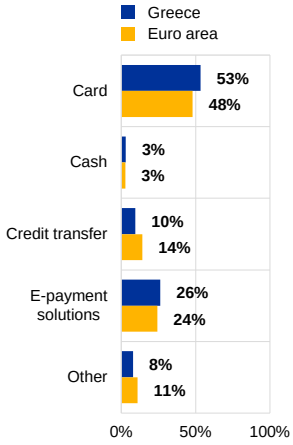
Share of payment instruments for online transactions (number)



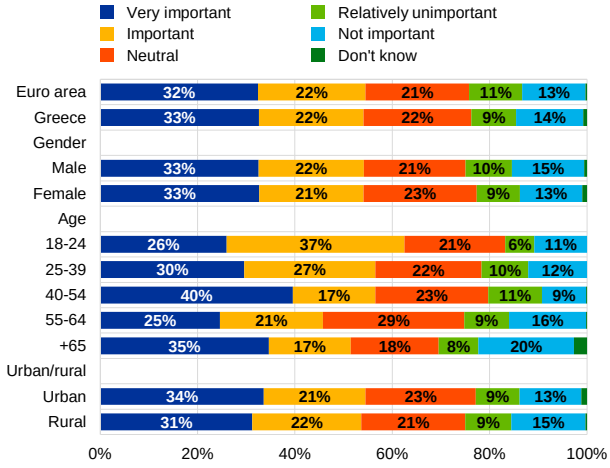
Preferred payment instrument



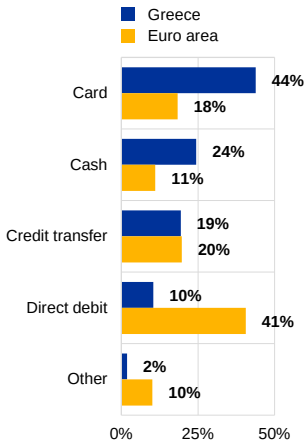
Share of payment instruments for online transactions (value)



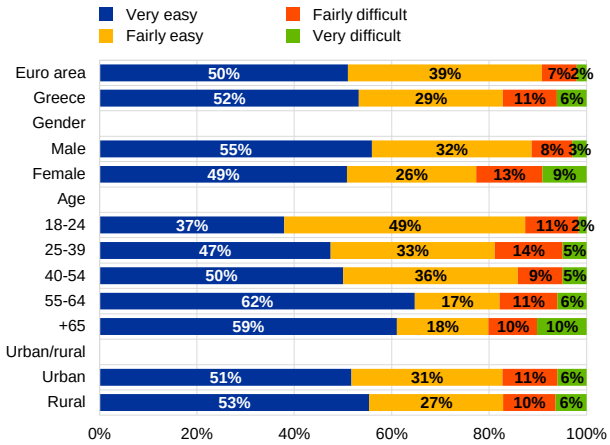
Importance to have the option to pay in cash



Share of payment instruments for bill transactions (number)



Ease to withdraw cash from an ATM or a bank



See note from previous page.

Ireland

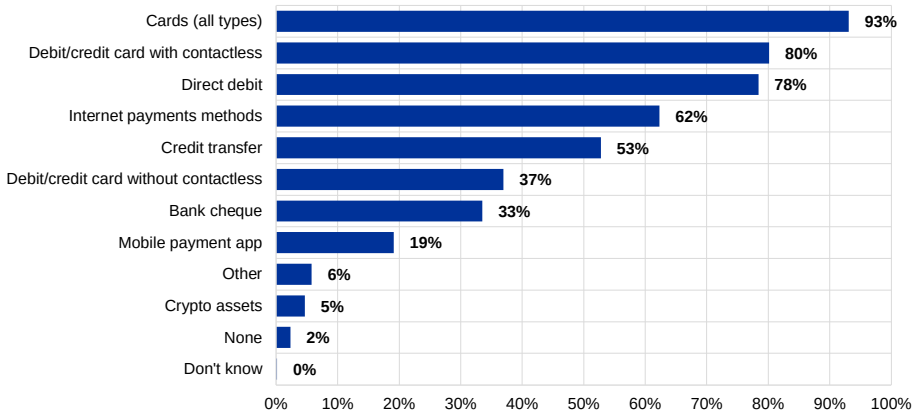
Table B.10.1

General Information

Sample size	2,088	
via internet		1,042
via telephone		1,046
Reported payments	**Number**	**Value**
Payment transaction in sample	6,623	€506,153
via POS and P2P	3,965	€123,783
via online purchases	467	€39,322
via bill payments	2,191	€343,048

Chart B.10.1

Access to payment instruments other than cash



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P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

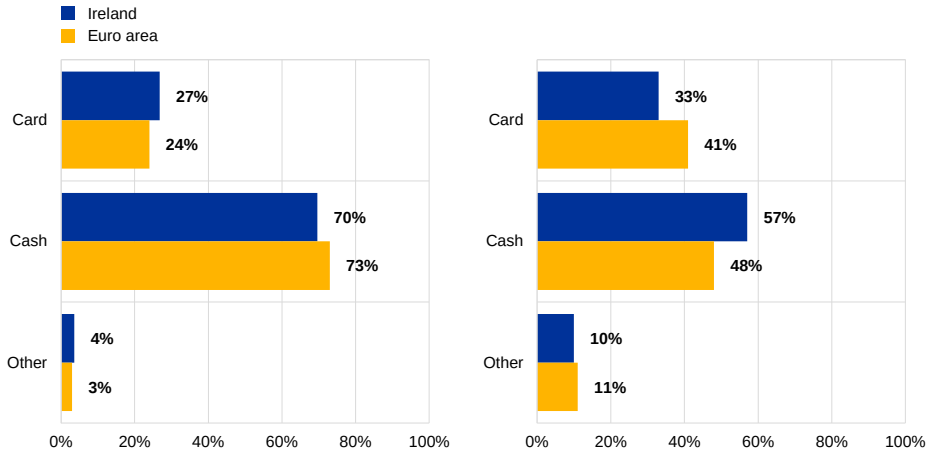
Table B.10.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.90	€31.22	€59.28	1.57	€25.55	€40.12
Cash	1.32	€25.59	€33.83	1.14	€16.92	€19.33
Non-cash	0.58	€44.11	€25.46	0.43	€48.56	€20.80
Online purchases	0.22	€84.23	€18.83	0.16	€66.86	€10.86
Bill payments	0.15	€156.57	€23.47	0.13	€160.83	€21.45
Average payments	**2.27**	**€44.70**	**€101.59**	**1.87**	**€38.82**	**€72.43**

Chart B.10.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
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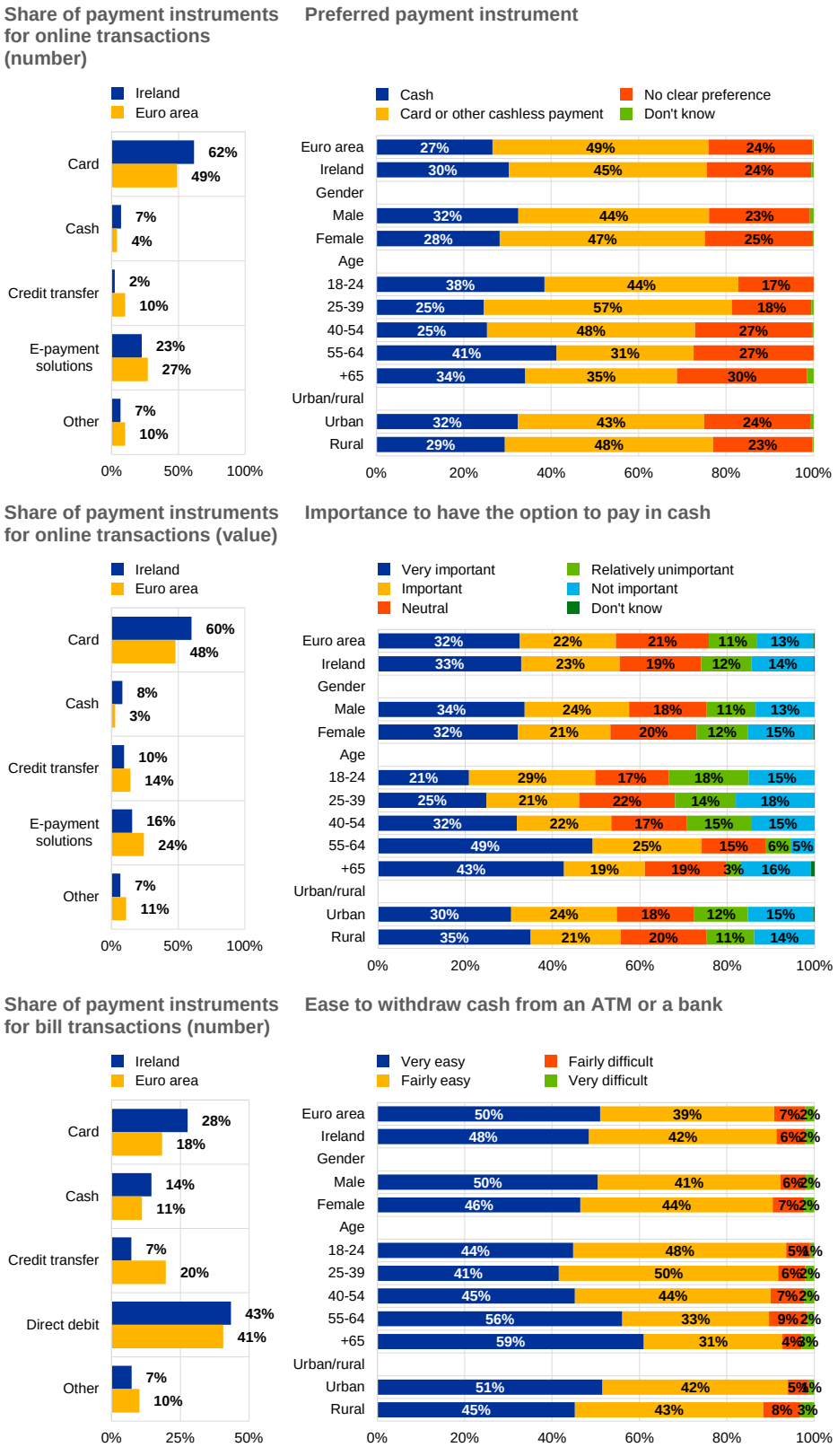
Chart B.10.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Italy

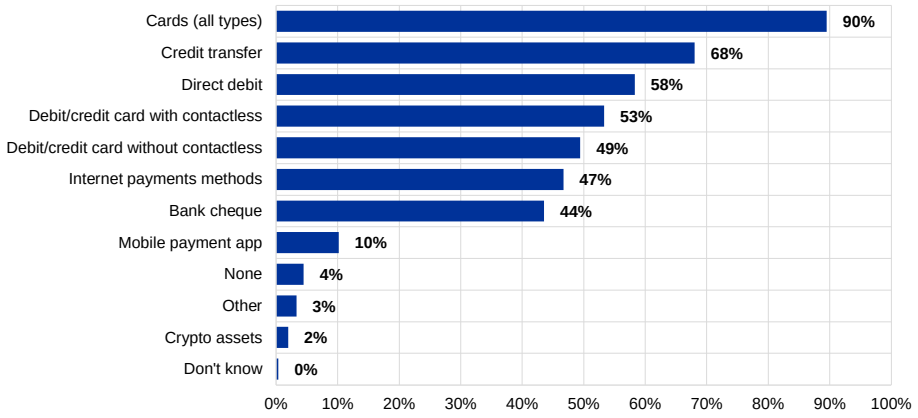
Table B.11.1

General Information

Sample size	4,199	
via internet		2,099
via telephone		2,100
Reported payments	**Number**	**Value**
Payment transaction in sample	10,875	€546,852
via POS and P2P	7,978	€183,516
via online purchases	570	€36,872
via bill payments	2,327	€326,464

Chart B.11.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
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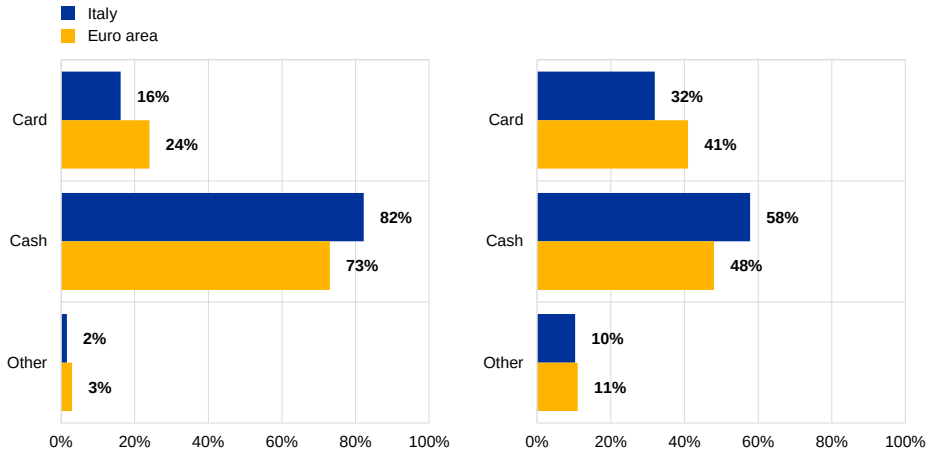
Table B.11.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.90	€23.00	€43.70	1.57	€25.55	€40.12
Cash	1.56	€16.18	€25.26	1.14	€16.92	€19.33
Non-cash	0.34	€54.50	€18.45	0.43	€48.56	€20.80
Online purchases	0.14	€64.64	€8.78	0.16	€66.86	€10.86
Bill payments	0.08	€140.29	€11.11	0.13	€160.83	€21.45
Average payments	**2.11**	**€30.07**	**€63.59**	**1.87**	**€38.82**	**€72.43**

Chart B.11.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



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P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
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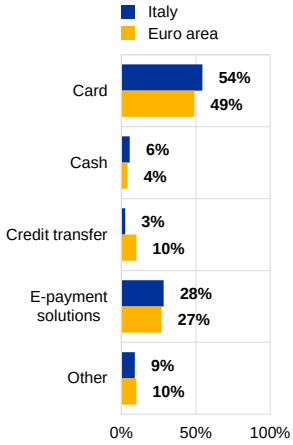
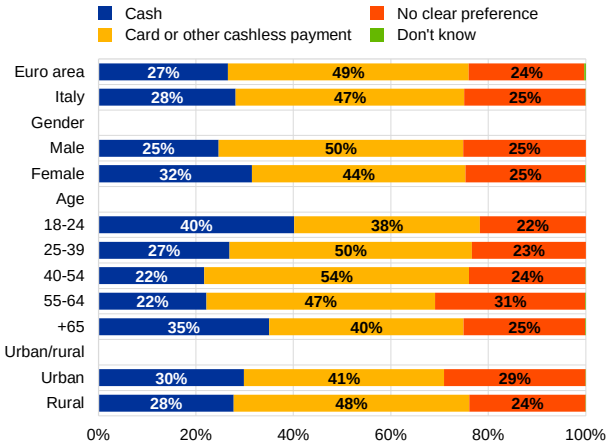
Chart B.11.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

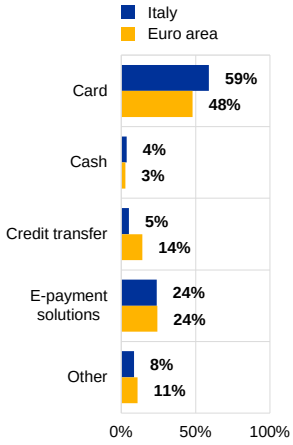
Share of payment instruments for online transactions (number)



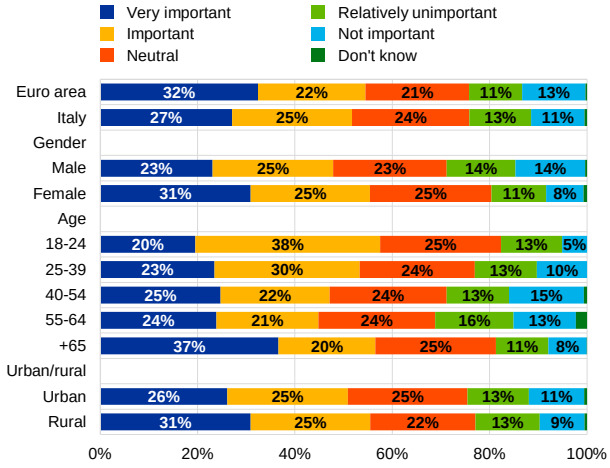
Preferred payment instrument



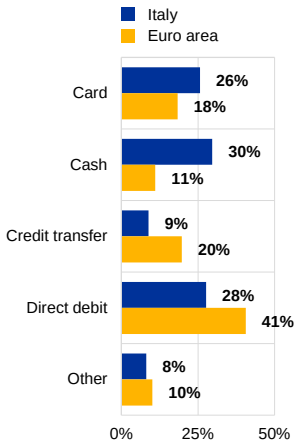
Share of payment instruments for online transactions (value)



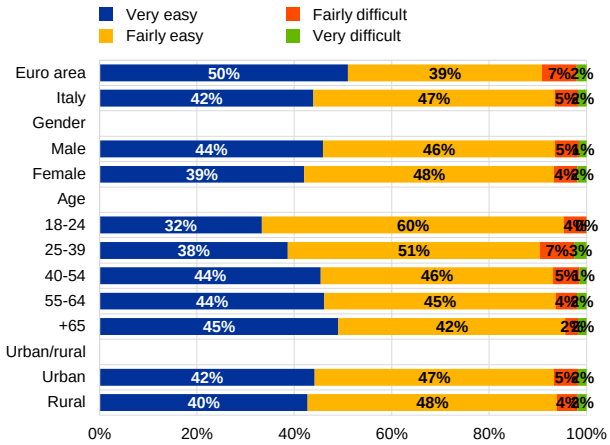
Importance to have the option to pay in cash



Share of payment instruments for bill transactions (number)



Ease to withdraw cash from an ATM or a bank



See note from previous page.

Lithuania

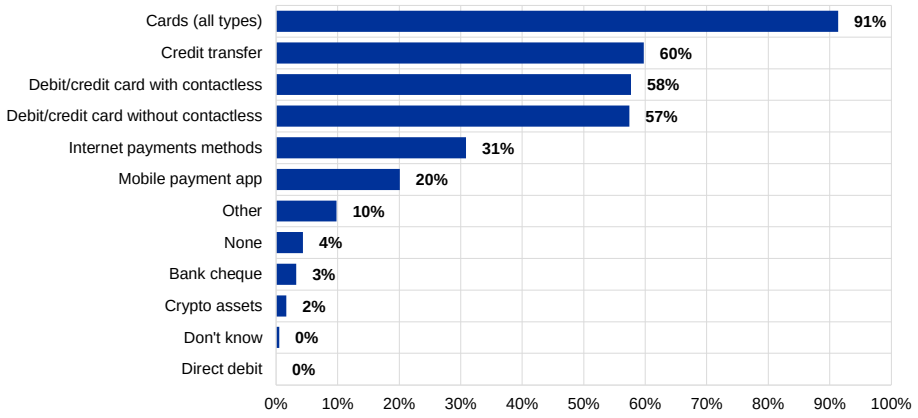
Table B.12.1

General Information

Sample size	2,164	
via internet		1,108
via telephone		1,056
Reported payments	**Number**	**Value**
Payment transaction in sample	6,116	€272,026
via POS and P2P	3,181	€69,985
via online purchases	492	€26,371
via bill payments	2,444	€175,670

Chart B.12.1

Access to payment instruments other than cash



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
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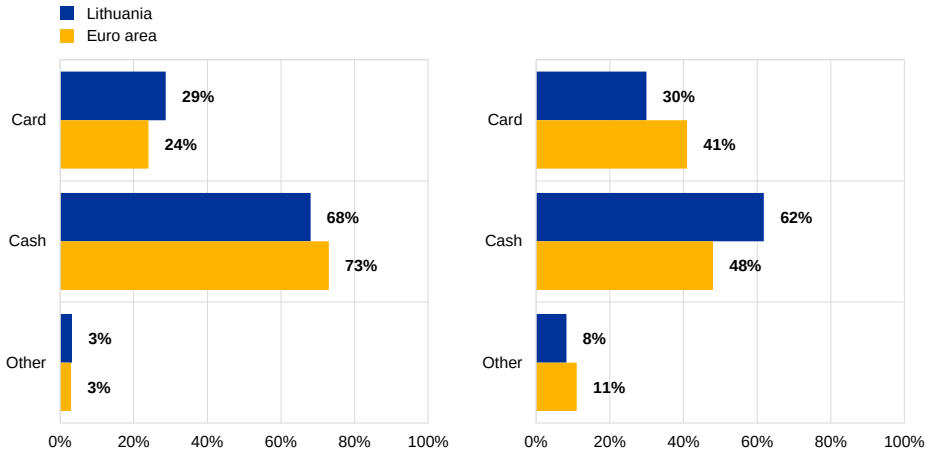
Table B.12.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.47	€22.00	€32.34	1.57	€25.55	€40.12
Cash	1.00	€20.01	€20.00	1.14	€16.92	€19.33
Non-cash	0.47	€26.26	€12.34	0.43	€48.56	€20.80
Online purchases	0.23	€53.64	€12.19	0.16	€66.86	€10.86
Bill payments	0.16	€71.89	€11.60	0.13	€160.83	€21.45
Average payments	**1.86**	**€30.20**	**€56.12**	**1.87**	**€38.82**	**€72.43**

Chart B.12.2

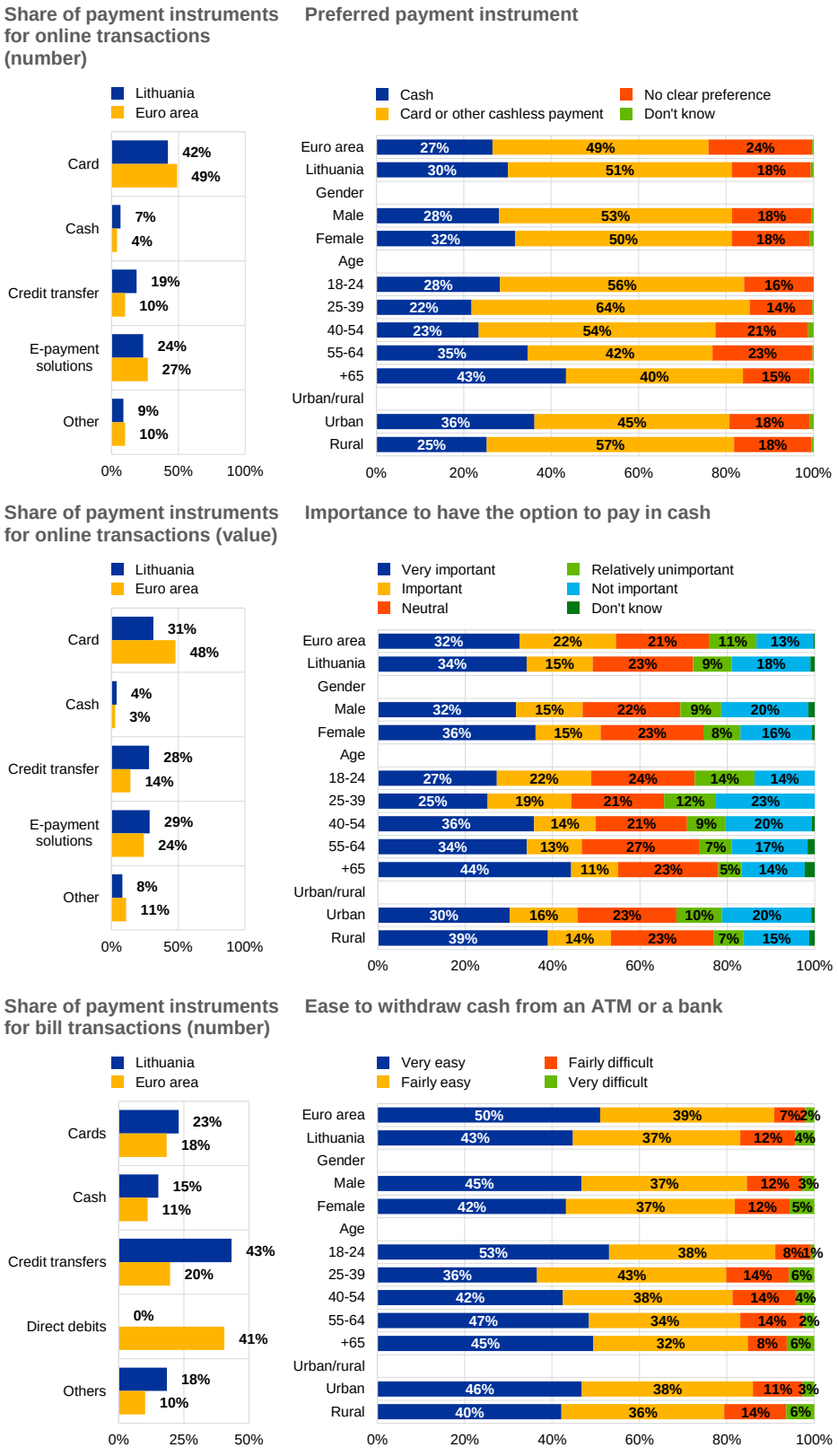
Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Chart B.12.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Luxembourg

Table B.13.1

General Information

Sample size	1,367	
via internet		752
via telephone		615
Reported payments	**Number**	**Value**
Payment transaction in sample	4,796	€1,115,675
via POS and P2P	2,294	€123,343
via online purchases	347	€38,103
via bill payments	2,154	€954,229

Chart B.13.1

Access to payment instruments other than cash

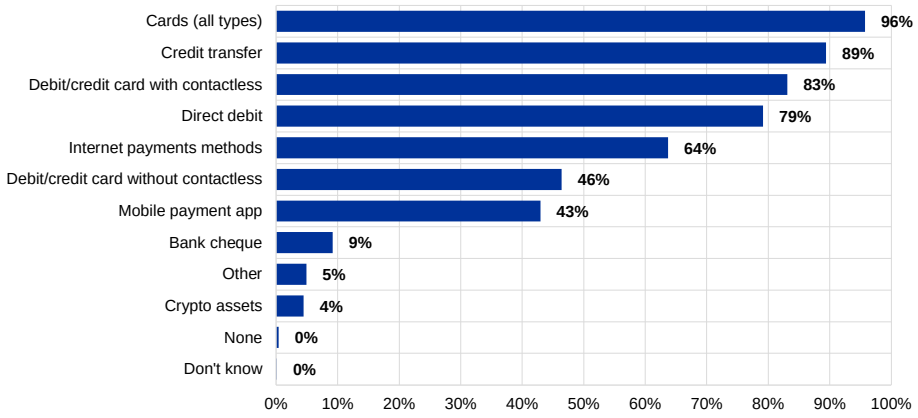


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Table B.13.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.68	€53.77	€90.23	1.57	€25.55	€40.12
Cash	0.91	€24.15	€21.98	1.14	€16.92	€19.33
Non-cash	0.77	€88.85	€68.25	0.43	€48.56	€20.80
Online purchases	0.25	€109.72	€27.87	0.16	€66.86	€10.86
Bill payments	0.23	€442.91	€99.72	0.13	€160.83	€21.45
Average payments	**2.16**	**€100.97**	**€217.82**	**1.87**	**€38.82**	**€72.43**

Chart B.13.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

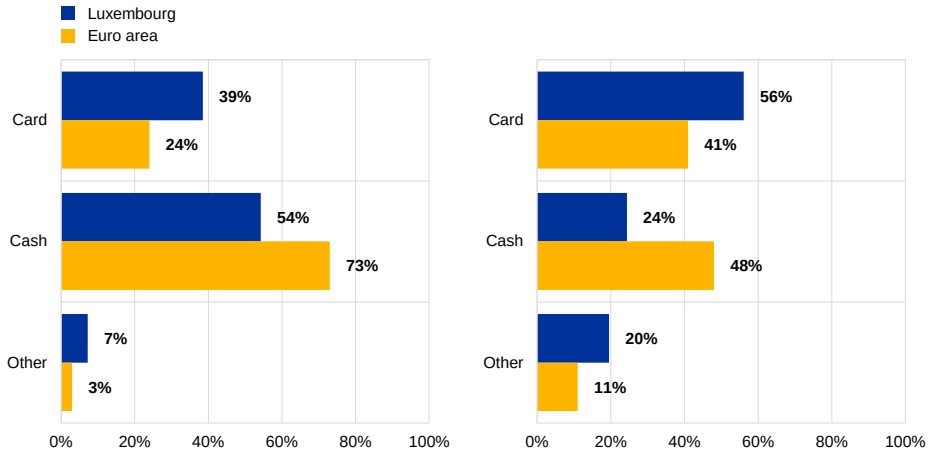

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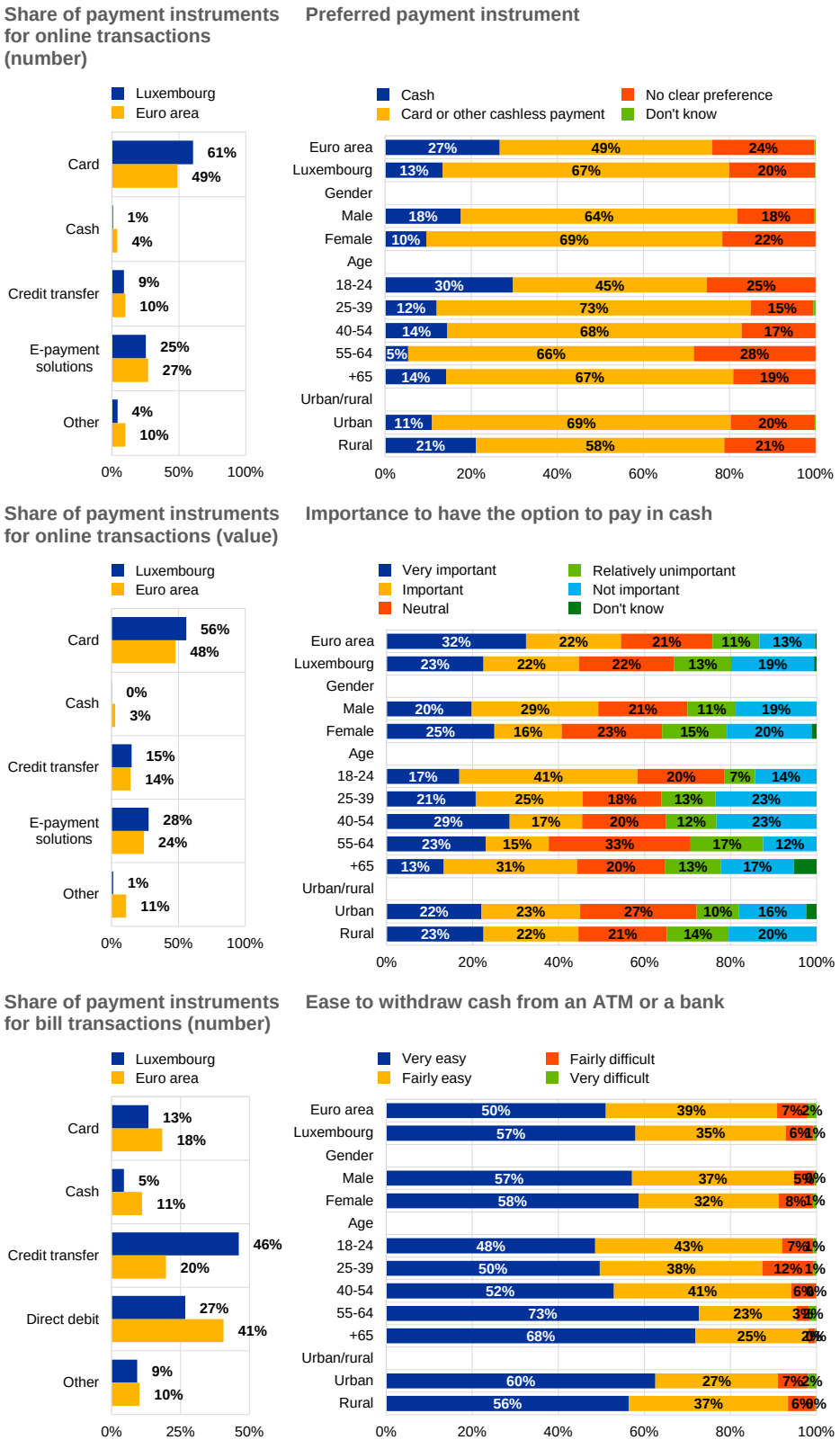
Chart B.13.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Latvia

Table B.14.1

General Information

Sample size	2,144	
via internet		1,085
via telephone		1,059
Reported payments	**Number**	**Value**
Payment transaction in sample	6,337	€221,908
via POS and P2P	3,542	€61,783
via online purchases	281	€11,086
via bill payments	2,515	€149,038

Chart B.14.1

Access to payment instruments other than cash

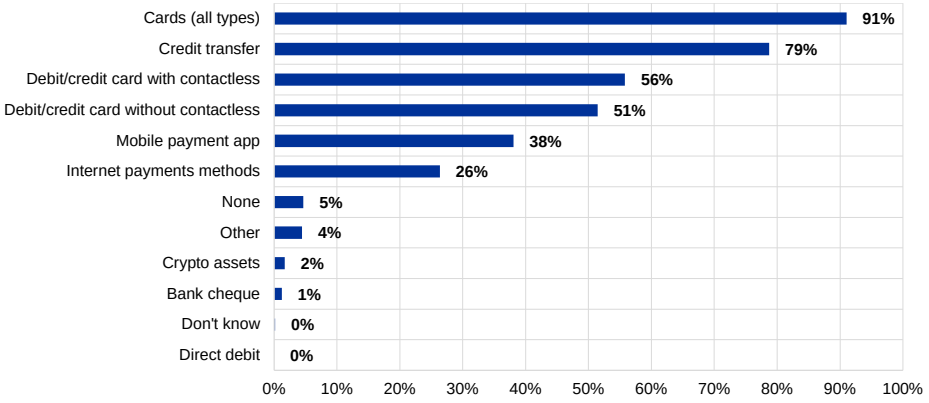


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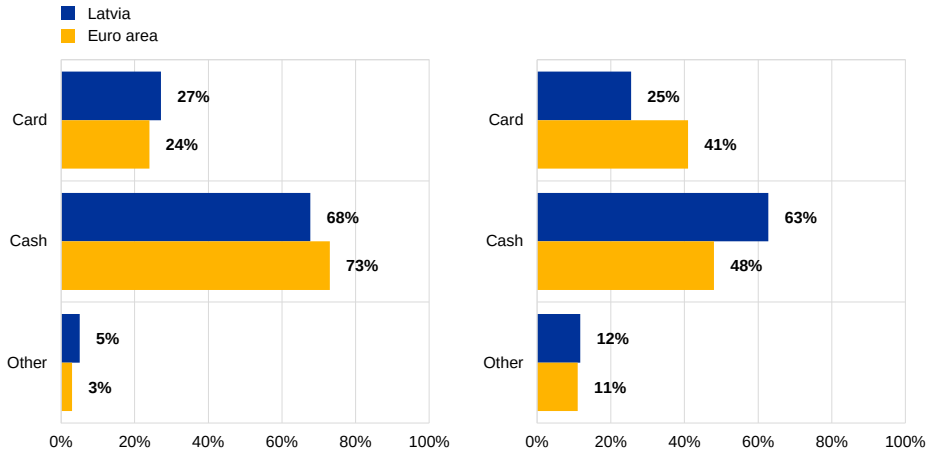
Table B.14.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.65	€17.44	€28.82	1.57	€25.55	€40.12
Cash	1.12	€16.18	€18.10	1.14	€16.92	€19.33
Non-cash	0.53	€20.09	€10.72	0.43	€48.56	€20.80
Online purchases	0.13	€39.51	€5.17	0.16	€66.86	€10.86
Bill payments	0.17	€59.27	€9.93	0.13	€160.83	€21.45
Average payments	**1.95**	**€22.51**	**€43.92**	**1.87**	**€38.82**	**€72.43**

Chart B.14.2

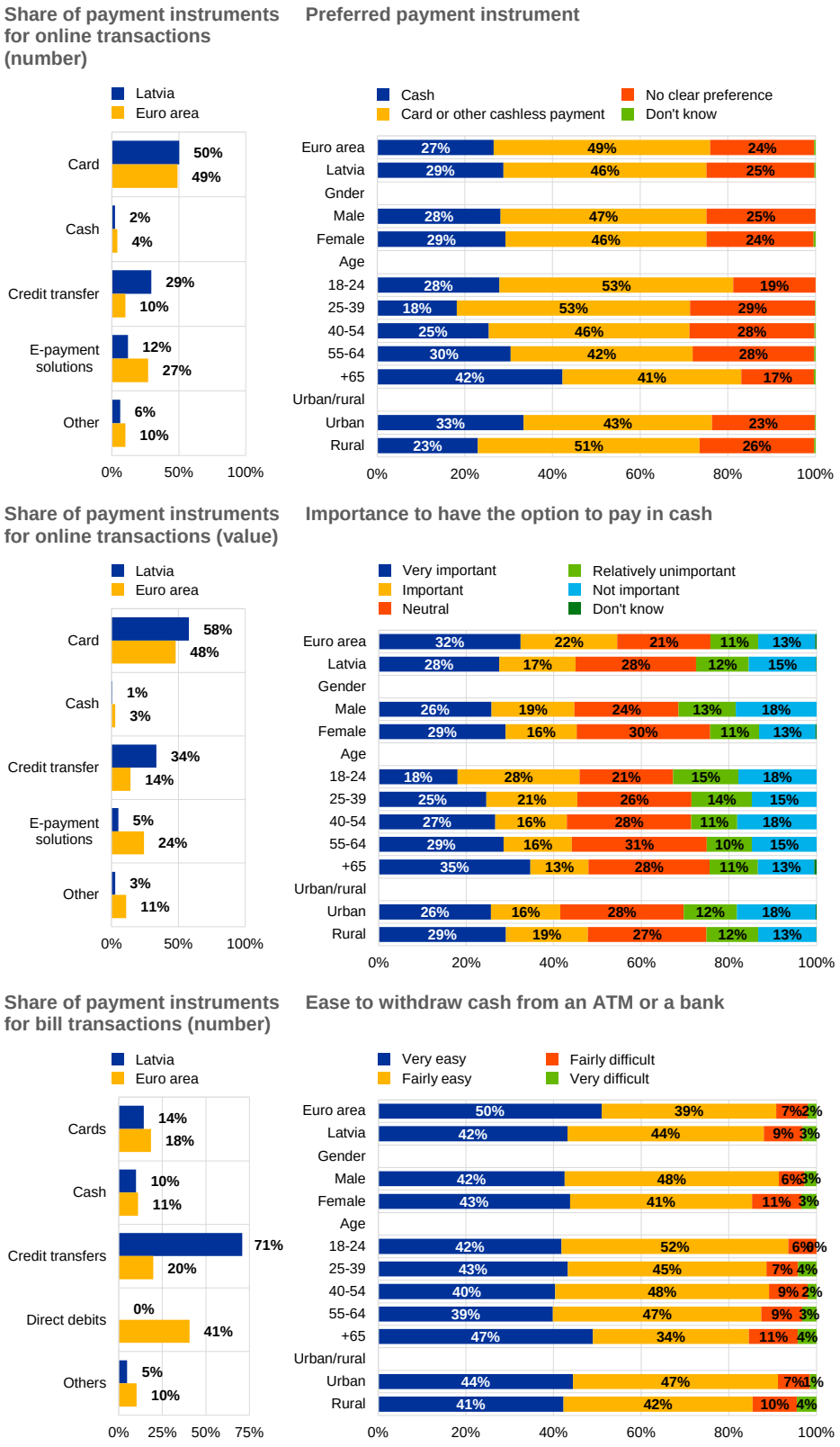
Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)



POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Chart B.14.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Malta

Table B.15.1

General Information

Sample size	450	
face to face		450
Reported payments	**Number**	**Value**
Payment transaction in sample	2,109	€113,962
via POS and P2P (3 days)	1,716	€46,685
via online purchases (3 days)	80	€6,435
via bill payments	313	€60,842

Chart B.15.1

Access to payment instruments other than cash

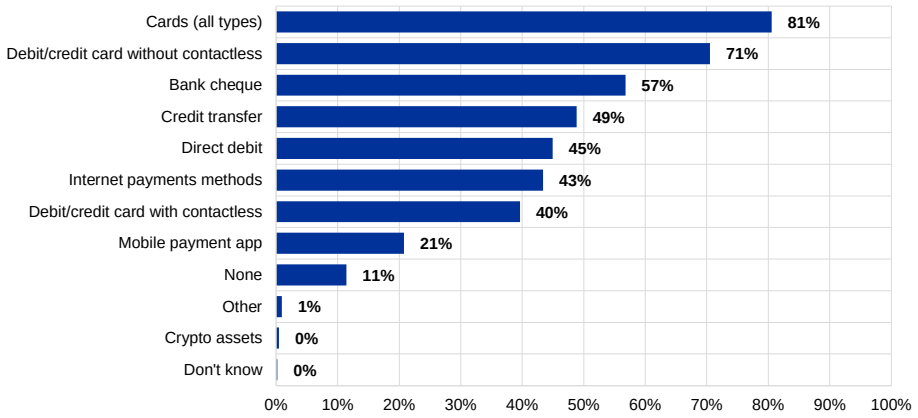


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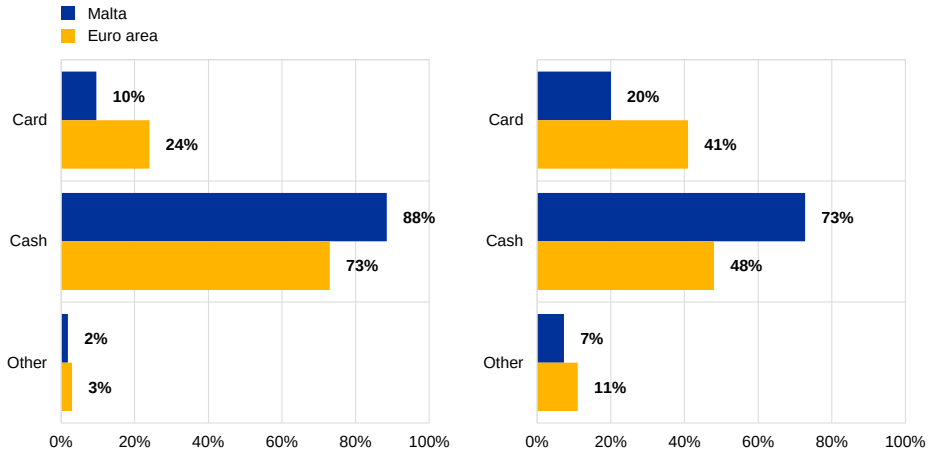
Table B.15.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.27	€27.20	€34.58	1.57	€25.55	€40.12
Cash	1.13	€22.36	€25.15	1.14	€16.92	€19.33
Non-cash	0.15	€64.49	€9.43	0.43	€48.56	€20.80
Online purchases	0.06	€80.82	€4.77	0.16	€66.86	€10.86
Bill payments	0.10	€194.34	€19.31	0.13	€160.83	€21.45
Average payments	**1.43**	**€41.03**	**€58.66**	**1.87**	**€38.82**	**€72.43**

Chart B.15.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

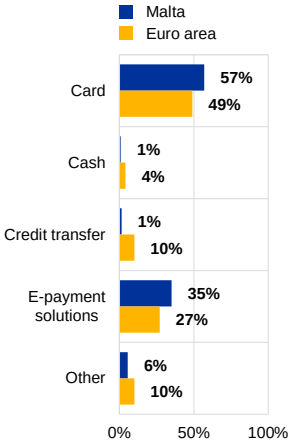


POS (Point of Sale): is the place in which goods and services are sold and paid for, such as shops and restaurants as well as services outside the home.
P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

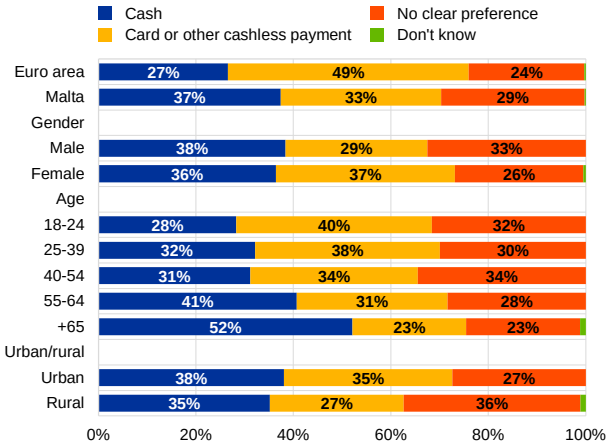
Chart B.15.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)

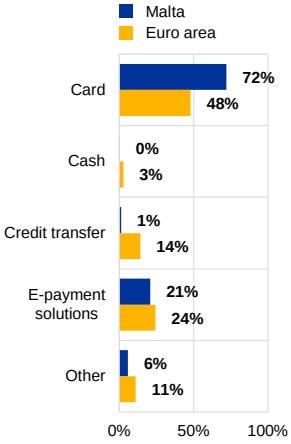
Share of payment instruments for online transactions (number)



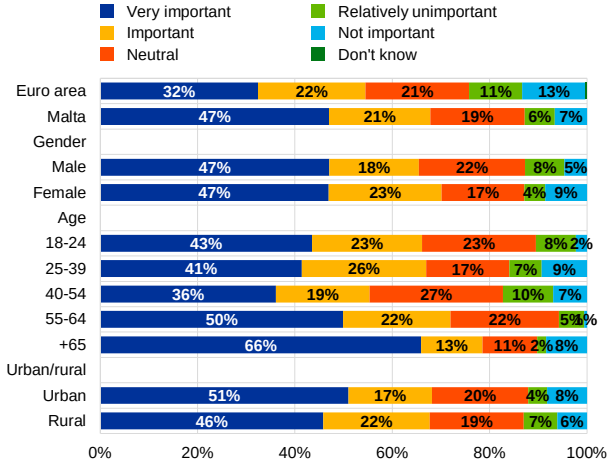
Preferred payment instrument



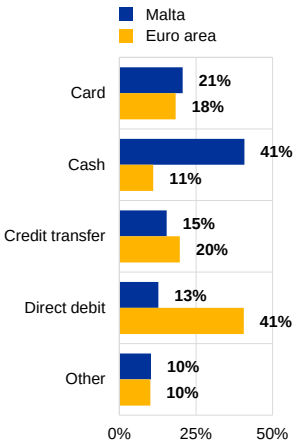
Share of payment instruments for online transactions (value)



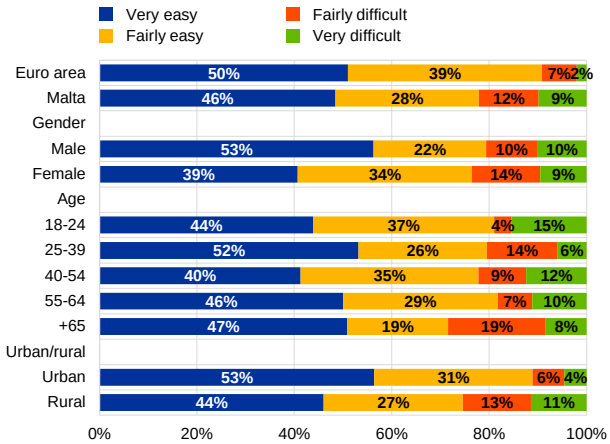
Importance to have the option to pay in cash



Share of payment instruments for bill transactions (number)



Ease to withdraw cash from an ATM or a bank



See note from previous page.

Portugal

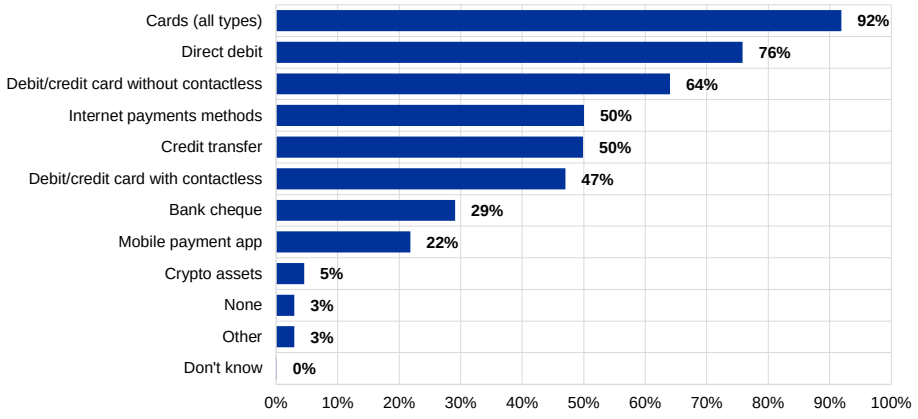
Table B.16.1

General Information

Sample size	2,127	
via internet		1,075
via telephone		1,052
Reported payments	**Number**	**Value**
Payment transaction in sample	6,655	€310,982
via POS and P2P	4,083	€62,533
via online purchases	254	€13,193
via bill payments	2,317	€235,256

Chart B.16.1

Access to payment instruments other than cash



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P2P (Person-to-person): includes all the payments made from a private individual to another private individual without intermediaries.
Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Table B.16.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.92	€15.31	€29.40	1.57	€25.55	€40.12
Cash	1.56	€10.17	€15.90	1.14	€16.92	€19.33
Non-cash	0.36	€37.95	€13.50	0.43	€48.56	€20.80
Online purchases	0.12	€51.96	€6.20	0.16	€66.86	€10.86
Bill payments	0.16	€101.52	€15.80	0.13	€160.83	€21.45
Average payments	**2.19**	**€23.42**	**€51.40**	**1.87**	**€38.82**	**€72.43**

Chart B.16.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

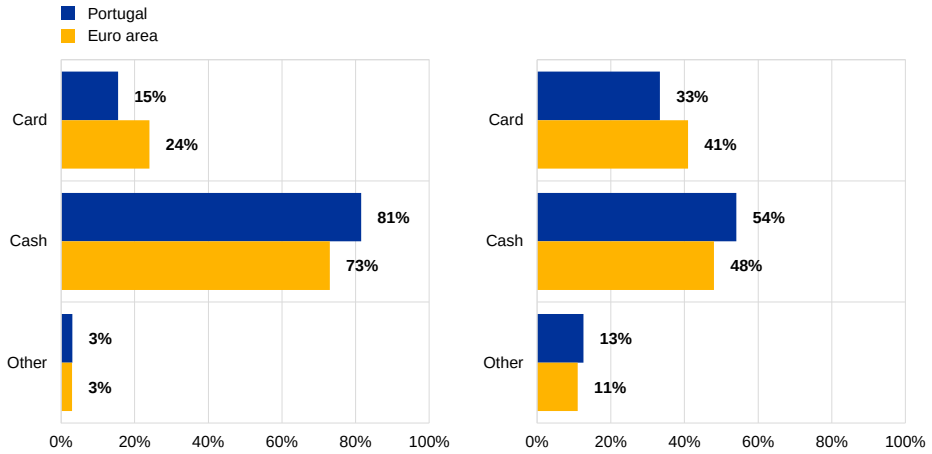

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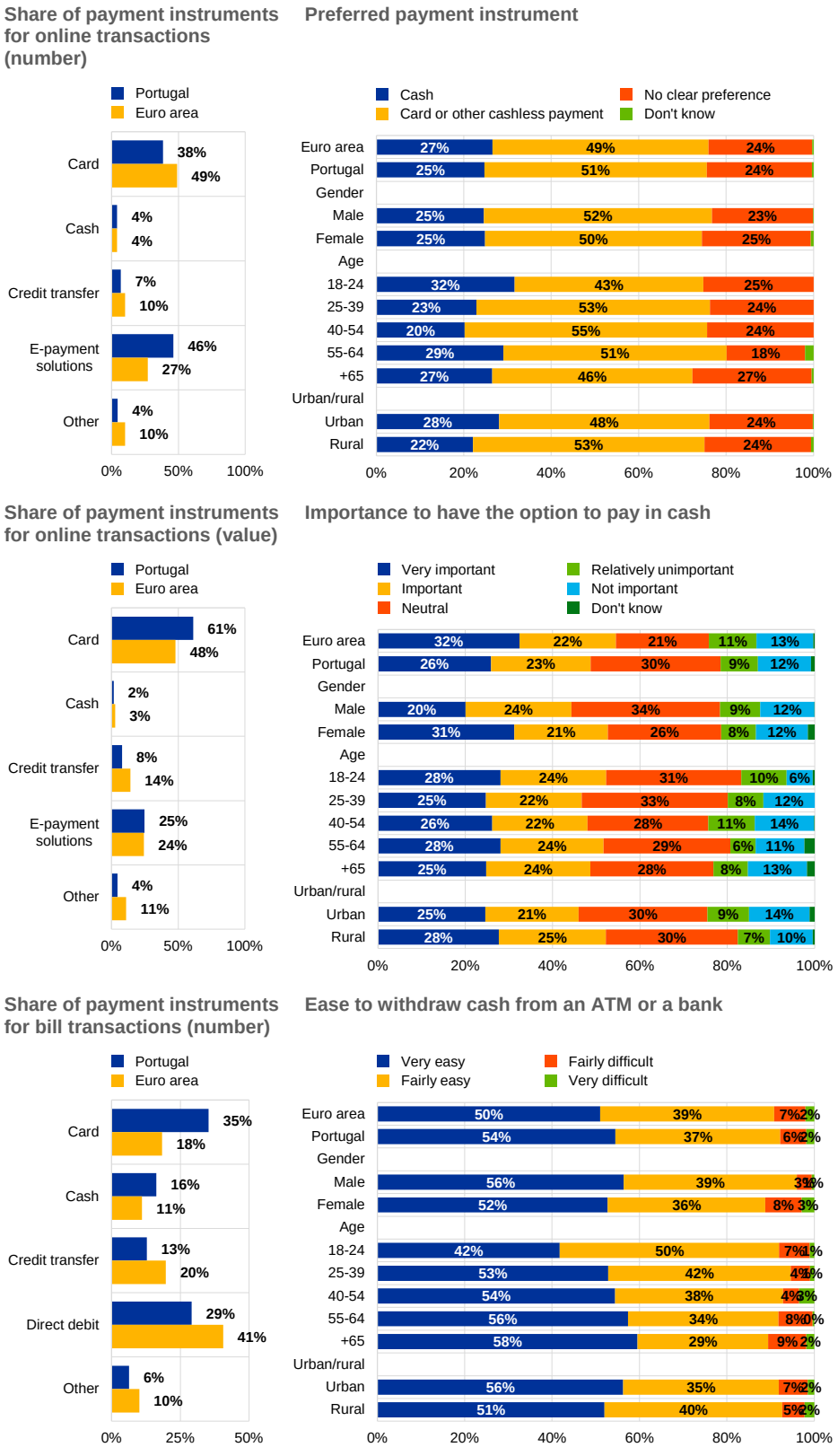
Chart B.16.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Slovenia

Table B.17.1

General Information

Sample size	2,075	
via internet		1,026
via telephone		1,049
Reported payments	**Number**	**Value**
Payment transaction in sample	6,642	€378,003
via POS and P2P	3,316	€85,236
via online purchases	394	€22,827
via bill payments	2,932	€269,940

Chart B.17.1

Access to payment instruments other than cash

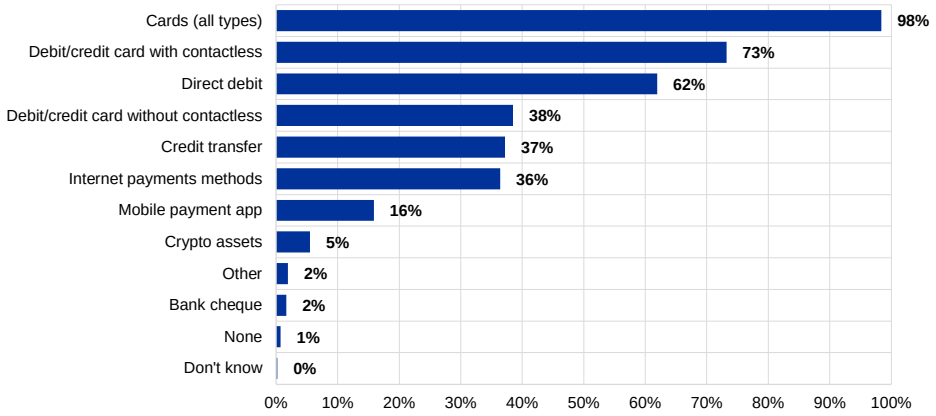


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Table B.17.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.60	€25.70	€41.08	1.57	€25.55	€40.12
Cash	1.17	€22.10	€25.90	1.14	€16.92	€19.33
Non-cash	0.43	€35.60	€15.18	0.43	€48.56	€20.80
Online purchases	0.19	€58.00	€11.00	0.16	€66.86	€10.86
Bill payments	0.20	€92.07	€18.58	0.13	€160.83	€21.45
Average payments	**1.99**	**€35.51**	**€70.66**	**1.87**	**€38.82**	**€72.43**

Chart B.17.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

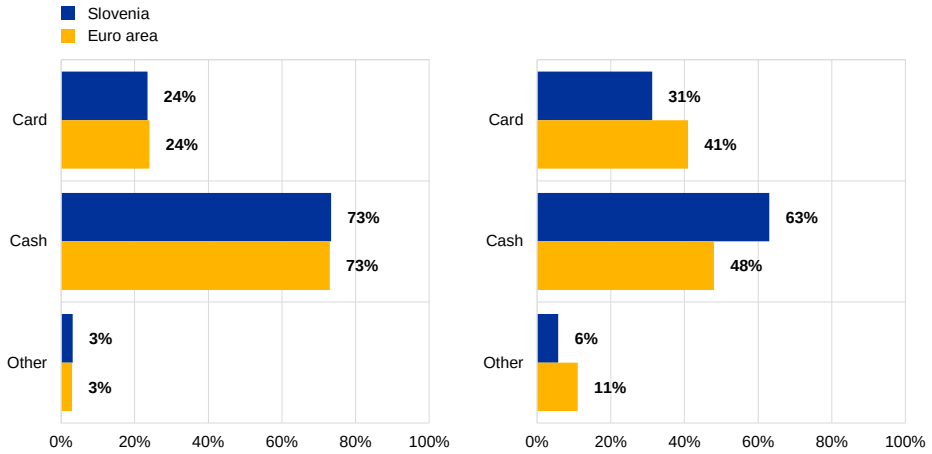

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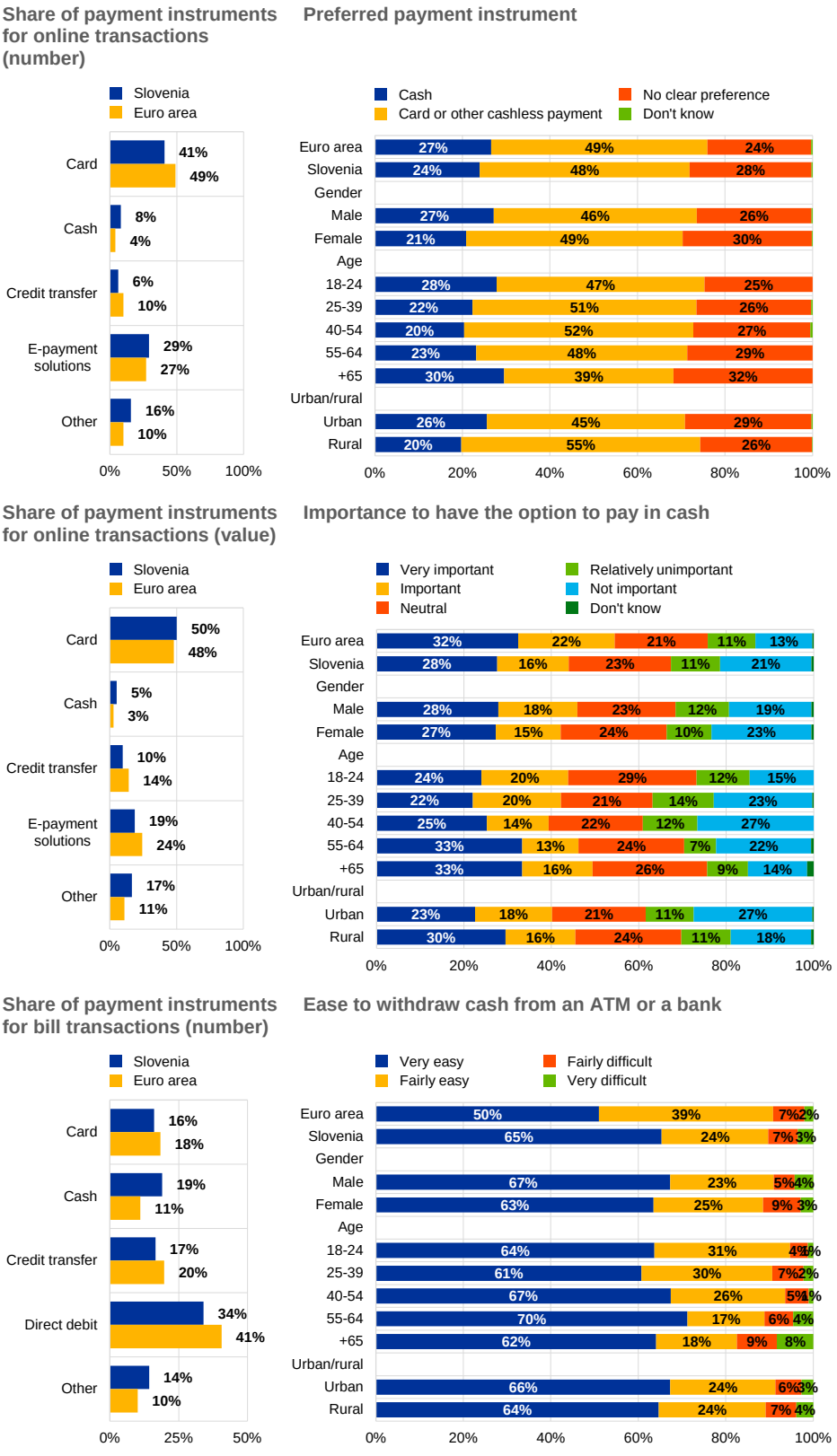
Chart B.17.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

Slovakia

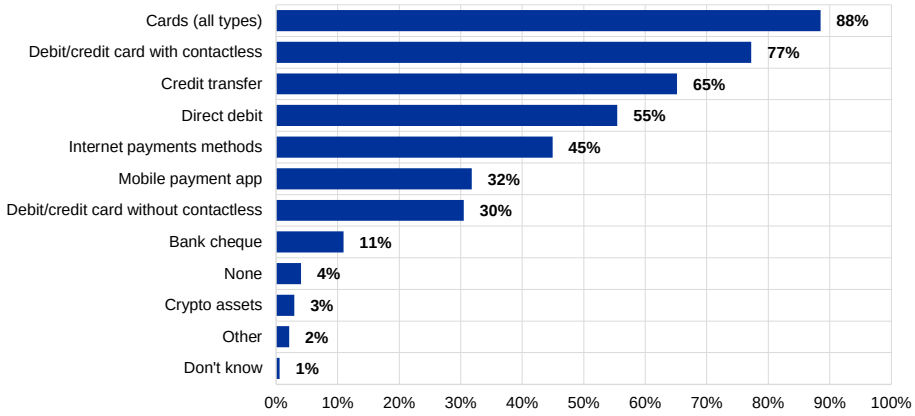
Table B.18.1

General Information

Sample size	2,089	
via internet		1,037
via telephone		1,052
Reported payments	**Number**	**Value**
Payment transaction in sample	6,042	€278,811
via POS and P2P	3,324	€80,098
via online purchases	391	€18,059
via bill payments	2,327	€180,653

Chart B.18.1

Access to payment instruments other than cash



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Remote payments: include payments made online via internet, mail and telephone orders and bill payments. For these payments, Germany is excluded from the calculation of the EA averages. Also, the value of bill payments is not included because the frequency at which the bill has been paid is unknown, and therefore the value of the bill can refer to a single payment, a weekly, monthly or annual one.

Table B.18.2

Transaction per payment type per country

Payment type	Average number and value of transaction					
	Country number per day	Country value of one transaction	Country value per day	Euro area number per day	Euro area value of one transaction	Euro area value per day
Payments at POS and P2P	1.59	€24.10	€38.34	1.57	€25.55	€40.12
Cash	1.17	€20.66	€24.20	1.14	€16.92	€19.33
Non-cash	0.42	€33.68	€14.14	0.43	€48.56	€20.80
Online purchases	0.19	€46.16	€8.64	0.16	€66.86	€10.86
Bill payments	0.16	€77.63	€12.35	0.13	€160.83	€21.45
Average payments	**1.94**	**€30.63**	**€59.34**	**1.87**	**€38.82**	**€72.43**

Chart B.18.2

Share of payment instruments at POS and P2P (number; left-panel; value; right-panel)

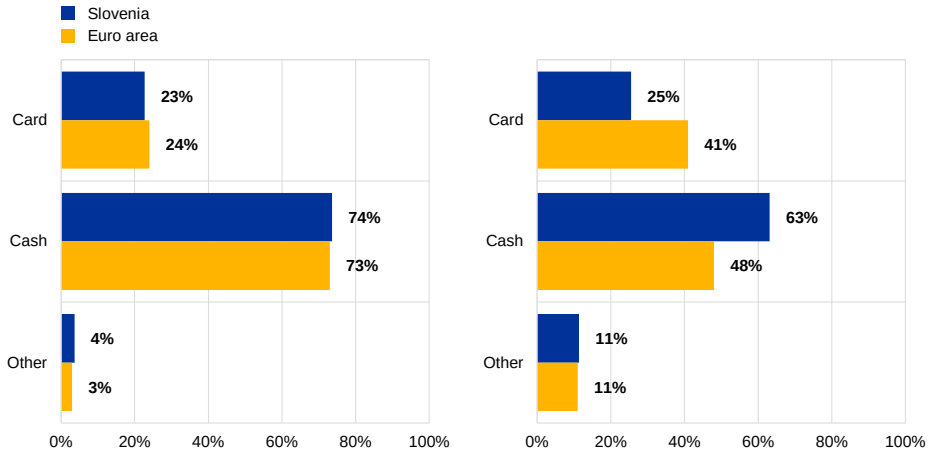

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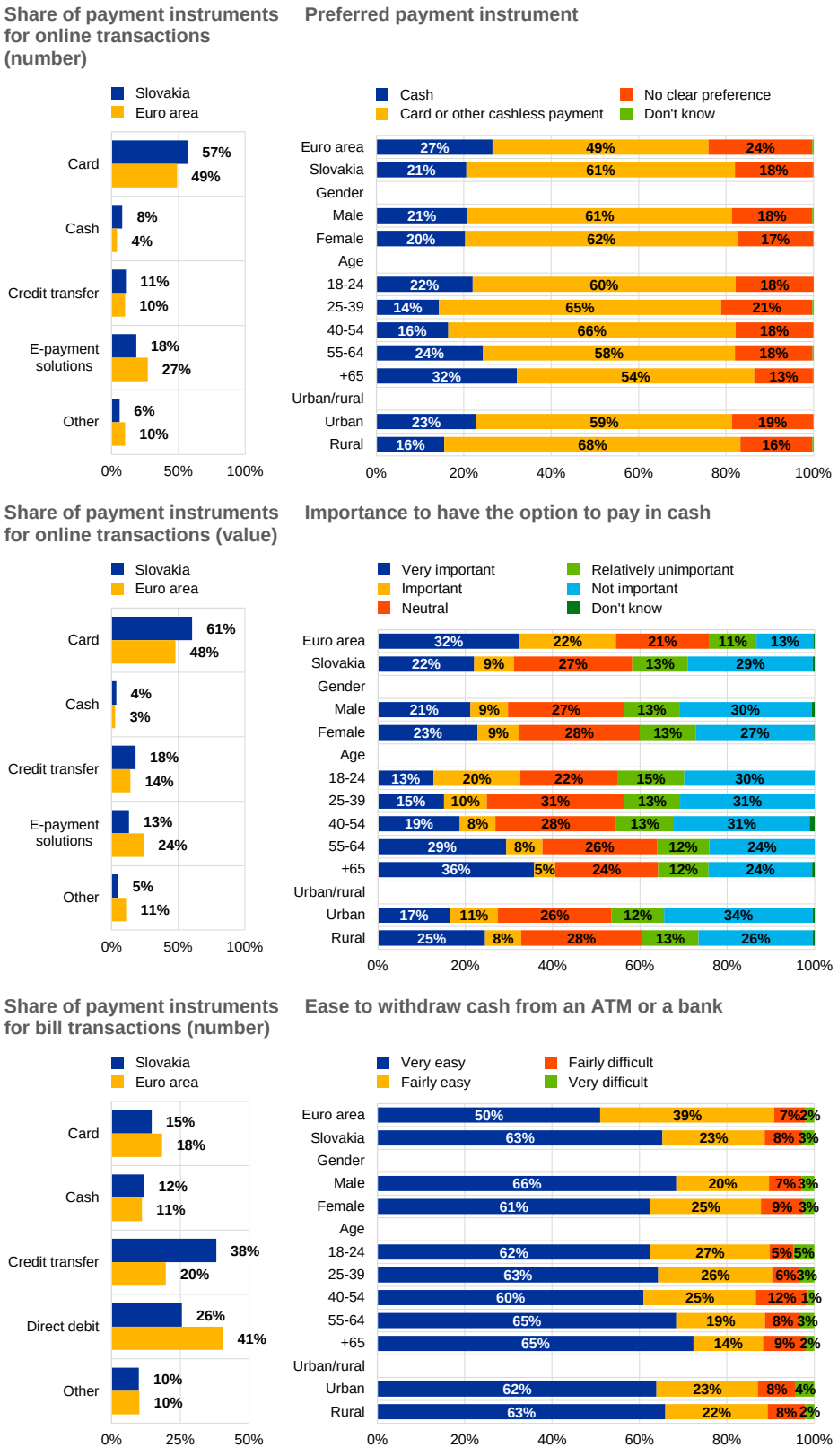
Chart B.18.3

Remote payments (left-panels) and opinions on payment instruments (right-panels)



See note from previous page.

List of references

Alvarez, F. and Lippi, F. (2017), “Cash burns: an inventory model with a cash-credit choice”, *Journal of Monetary Economics*, Vol. 90, pp. 99-112.

Arango, C., Huynh, K.P. and Sabetti, L. (2015), “Consumer Payment Choice: Merchant Card Acceptance versus Pricing Incentives”, *Journal of Banking & Finance*, Vol. 55, pp. 130-141.

Arango, C., Hogg, D. and Lee, A. (2015), “Why Is Cash (Still) so Entrenched? Insights from Canadian Shopping Diaries”, *Contemporary Economic Policy*, Vol. 33, pp. 141-158.

Arango-Arango C.A., Bouhdaoui, Y., Bounie, D, Eschelbach, M. and Hernandez, L. (2018), “Cash remains top-of-wallet! International evidence from payment diaries”, *Economic Modelling*, Vol. 69, pp. 38-48.

Bagnall, J., Bounie, D., Huynh, K., Kosse, A., Schmidt, T., Schuh, S. and Stix, H. (2016), “Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data”, *International Journal of Central Banking*, Vol. 12, pp. 1-62.

Banque de France (2019), “Report on public access to cash in Metropolitan France”.

Banque de France (2020), “Public access to cash – Update of the assessment at end-2019”.

Beshears, J., Choi, J. J., Laibson, D. and Madrian, B. C. (2008), “How are preferences revealed?”, *Journal of Public Economics*, Vol. 92, No 8-9, pp. 1787-1794.

Bethlehem, J. (2010), "Selection bias in web surveys", *International Statistical Review*, Vol. 78, No 2, pp. 161-188.

Bouhdaoui, Y. and Bounie, D. (2012), “Modeling the Share of Cash Payments in the Economy: An Application to France”, *International Journal of Central Banking*, Vol. 8, No 4, pp. 175-195.

Bounie D., François A., Moret A., and Politronacci E. (2018), "Use of cash in France: the payment method of choice for low-value purchases", *Banque de France Bulletin*, Vol. 220.

Cohen, M. and Rysman, M. (2013), “Payment Choice with Consumer Panel Data”, *Research Department Working Papers*, No 13-6, Federal Reserve Bank of Boston.

Demirguc-Kunt, A. and Klapper, L. (2012), “Measuring Financial Inclusion: The Global Findex Database”, *Policy Research Working Paper*, No 6025, World Bank Group, Washington, DC.

Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S. and Hess, J. (2018), “The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution”, World Bank Group, Washington, DC.

De Nederlandsche Bank (2020), “Shift of cash to debit card continues”, *DNBulletin*, Retrieved 25 September 2020.

De Nederlandsche Bank (2020), “Contactless payments gaining further ground during the COVID-19 crisis”, *DNBulletin*, Retrieved 16 October 2020.

Deutsche Bundesbank (2018), “Payment behaviour in Germany in 2017. Fourth study of the utilisation of cash and cashless payment instruments”, Frankfurt am Main.

Deutsche Bundesbank (2020), “Cash hoarding by German households – how much cash do they store and why?”, *Monthly Report*, Frankfurt am Main, July.

EHI Retail Institute (2020), “Kontaktlos und Corona pushen Kartenzahlung”, Retrieved 23 September 2020.

Esselink, H. and Hernandez, L. (2017), “The use of cash by households in the euro area”, *Occasional Paper Series*, No 201, European Central Bank, Frankfurt am Main, November.

European Central Bank (2019), Opinion of the European Central Bank of 26 November 2019 on the requirement for certain credit institutions and branches to provide cash services, CON/2019/41.

Fernandez-Blanco, V., Orea, L. and Pietro-Rodriguez, J. (2009), “Analyzing consumers heterogeneity and self-reported tastes: An approach consistent with the consumer’s decision making process”, *Journal of Economic Psychology*, Vol. 30, No 4, pp. 622-633, August.

Filzmoser, P., Gussenbauer, J. and Templ, M. (2016), “Detecting outliers in household consumption survey data”, *Final report with the World Bank* (1157976), Vienna University of Technology, Vienna, Austria.

Ghosh, D. and Vogt, A. (2012), “Outliers: An evaluation of methodologies”, in American Statistic Association, *Joint statistical meetings*, San Diego, California, pp. 3455-3460.

Hayashi, F. and Klee, E. (2003), “Technology adoption and consumer payments: evidence from survey data”, *Review of Network Economics*, Vol. 2, No 2, pp. 1-16.

Jiménez, C. and Tejero, H. (2018), “Bank branch closure and cash access in Spain”, *Financial Stability Review*, Banco de España, No 34, pp. 35-56.

Jonker, N., Hernandez, L., de Vree, R. and Zwaan, P. (2018), "From cash to cards: how debit card payments overtook cash in the Netherlands”, *DNB Occasional Studies*, Vol. 16, No 1, Research Department, De Nederlandsche Bank.

Klee, E. (2008), “How people pay: Evidence from grocery store data”, *Journal of Monetary Economics*, Vol. 55, No 3, pp. 526-541.

Lagarde, C. (2020), “Payments in a digital world”, speech at the Deutsche Bundesbank online conference on banking and payments in the digital world, 10 September 2020, Retrieved 9 October 2020.

Moracci, E. (2020), “Payment Choices and Cash Management: Theory and Evidence from ECB SUCH Data”, European University Institute, unpublished.

Rysman, M. and Schuh, S. (2016), “New Innovations in Payments”, *Innovation Policy and the Economy*, Vol. 17, pp. 27-48.

Shy, O. (2020), “How currency denomination and the ATM affect the way we pay”, *Journal of Economics and Business*.

Stavins, J. (2017), “How Do Consumers Make Their Payment Choices?”, *Research Data Reports*, No. 17-1, Federal Reserve Bank of Boston.

Stavins, J. (2019), “How Does Liquidity Affect Consumer Payment Choice?”, *Research Department Working Papers*, No. 19-7, Federal Reserve Bank of Boston.

Sveriges Riksbank (2020), “Secure access to cash – report from the Riksbank Committee”, Retrieved 25 September 2020.

Templ, M., Gussenbauer, J. and Filzmoser, P. (2019), “Evaluation of robust outlier detection methods for zero-inflated complex data”, *Journal of Applied Statistics*, Vol. 47, No 7, pp. 1144-1167.

Van der Cruijsen, C., Hernández, L. and Jonker, N. (2017), “In love with the debit card but still married to cash”, *Applied Economics*, Vol. 49, No 30, pp. 2989-3004.

Van Hove, L. (2020), “How currency denomination and the ATM affect the way we pay: a comment on Shy”, *Journal of Economics and Business*.

Wakamori, N. and Welte, A. (2017), “Why Do Shoppers Use Cash? Evidence from Shopping Diary Data”, *Journal of Money, Credit and Banking*, Vol. 49, No 1, pp. 115-169.

Whitesell, W.C. (1989), “The Demand for Currency versus Debitable Accounts”, *Journal of Money, Credit and Banking*, Vol. 21, No 2, pp. 246-251.

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