



The Digital Transformation and Payments in Portugal



Portugal is fertile ground for the digital transformation.

Most people have access to the internet from fixed broadband connections, using their computers and browsers, or smartphones with a data plan from their cellular carriers. Most also have payment cards, and payment accounts, that enable them to engage in transactions on websites and apps, to use digital wallets, and pay with their smartphones.

Looking backward, this chapter shows that Portugal has benefitted from a robust and innovative payments system largely driven by domestic players. This now helps global players, such as Apple, introduce new payment products, which depend on people having payment cards, merchants taking cards, and processors handling card transactions.

Looking forward, this chapter shows that global firms, many of which have already entered Portugal, will play increasingly important roles in driving competition and innovation alongside domestic ones. That is largely just a reflection of the new realities, particularly in Europe, that make it easier to operate payments businesses globally and make national borders much less relevant.

Part A describes the current state of how people pay in Portugal, including innovative domestic solutions, and how Portugal compares to other EU countries. Part B shows that BigTech and FinTech firms, along with other multinational ones, have entered Portugal and are working to expand their footprints in the country as well as internationally.

A. Payments and Innovation in Portugal

To understand payments and innovation in Portugal, it is useful to start by briefly outlining the key players.⁷⁵

Since its creation in 1983, SIBS has played a key role in developing the infrastructure for the Portuguese payments industry and driving innovation in retail payments. Historically, from a consumer standpoint, SIBS has operated the ATM network for 27 banks which account for almost all consumer bank deposits and, under the MB brand, the domestic debit card scheme.

⁷⁵ An appendix describes the structure of the payments industry in more detail.

Starting around 2015 SIBS introduced MB WAY, which is a mobile app that enables payment account holders at participating banks to pay with a QR code at participant merchants, transfer money to other MB WAY participants, buy online by generating a proxy or virtual card number, along with other services.

From a merchant standpoint, SIBS enables merchants to accept cards on compatible EFTPOS terminals and online. It is also the processor for all these transactions including settling with merchants and banks.

SIBS was founded by Portuguese banks who sought scale economies in a small market from developing a shared platform and is now owned by 21 banks.⁷⁶ It now operates in several countries, including Poland and Romania.

Portuguese banks are critical players in payments in Portugal as they are in most developed countries. They offer consumers payment accounts, which is where most people put their paychecks and manage their household finances, operate ATM machines, issue debit cards which access those funds, and often issue credit cards as well. Banks also offer online banking, and mobile banking. An estimated 64 percent of internet users used online banking in 2021.⁷⁷

Most major banks in Portugal belong to Mastercard and/or Visa for issuing credit cards.⁷⁸ Banks issue credit cards that provide credit functionality through the international schemes. Often the credit cards also enable MB thereby providing the consumer with both credit and debit functionality.

1. All the Ways People Can Pay

There are two main dimensions to how people can pay which help in understanding data on how they do pay in Portugal.

The first is where the money comes from. Payment methods transfer money from the consumer to the merchant.

The simplest case is cash. The money comes from the consumer and probably from a wallet. The consumer obtained that cash from an ATM machine, over the counter at their branch, perhaps because they were paid in cash, from a stash at home, or from a family or friend.

Debit cards and direct debit, including MB WAY's P2P option, and credit transfers pull the money from the consumer's payment account at their bank.

Credit cards pull money in the first instance from the card issuer, typically a bank. The issuer sends the money through the card network to the merchant and later bills the consumer who has options to pay in full or revolve.

Some digital payment methods, often called e-money – enable the consumer to download money, effectively, into the payment method, such as the Starbucks mobile app, so that it is there for the taking. In some cases,

76 Rosa Soares, "Business model, the secret of MULTIBANCO," *Publico*, 30 September 2007. <https://www.publico.pt/2007/09/30/jornal/modelo-de-negocio-o-segreto-do-multibanco-231725>

77 Eurostat, "Individuals - internet use," https://ec.europa.eu/eurostat/databrowser/view/isoc_ci_ifp_iu/default/table?lang=en; Eurostat, "Individuals using the internet for internet banking," <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>.

78 China Union Pay is also present and Discover is making inroads in acquiring and is expected to issue cards as well.

the money is automatically pulled from another account. The money then comes from the issuer of the e-money method who the consumer already paid or provided access to funds.

The second dimension involves the physical mechanism by which the consumer effectively gives the merchant the money.

At physical locations, consumers give the merchant cash, insert a plastic card into, or wave at, an EFTPOS, or use a mobile phone for which the consumer has registered a payment credential, such as a credit card or current account details, into an app, such as Apple Pay. Figure 2 shows the stickers on a smoothie stand in Lisbon which lists the various methods accepted for payment at the store's EFTPOSs. The stand lets consumers know that they can pay with MB, the major international card brands, Apple Pay and G Pay.

Figure 2 Payment Methods Accepted at Vendor Shop Window in Lisbon



Online, for websites, consumers can typically pay with a card number – their actual card number or a virtual one (generated in the MB WAY app, for example) or a digital wallet (such as PayPal) into which they have registered a card credential. Figures 3 and 4 show the check-out page at a typical Portuguese online store, Worten, which is the largest appliance retailer, and El Corte Ingles, the largest department store in Europe, which also caters to an international clientele.

Figure 3 Check-Out Page at El Corte Inglés

ESCOLHER MÉTODO DE PAGAMENTO

☐ Cartão El Corte Inglés



☐ Paypal



☐ Multibanco



☐ Cartão de Crédito



☐ MBWAY



☐ Alipay



☐ Wechat



CANCELAR

EFFECTUAR PEDIDO

Figure 4 Check-Out Page at Worten

←

worten

Checkout Seguro

Faturação

Entrega

Opções de entrega

4


Pagamento

Revisão


Seleciona o método de pagamento

▼ Tens um cupão? [insere-o aqui](#)


☐ Cartão de Crédito




☐ Cartão Universo




☐ Referência Multibanco



☐ MB WAY



☐ Cartão Dá



A TUA COMPRA

Frigorífico Combinado
SAMSUNG
RB30J3000WW (No Frost
- 178 cm - 311L - Branco)
Qtd: 1
€407,99

SUBTOTAL

€407,99

ENVIO E ENTREGA

€0,00

TOTAL

€407,99

CONTINUAR

44

For Apple's iOS and Google's Android, payments in app often depend on whether the goods and services being sold are physical or digital. For physical goods, such as a ride, consumers can normally pay with the same options they have for websites; this is determined by the app, Uber for example, which payment options users can register in a country. For digital goods, such as an artifact for a game, or a digital subscription, consumers typically have to use the app store's payment method based on a payment credential the user has registered with Apple or Google, as discussed above.

Finally, Portuguese consumers can use their ATM/debit card to access an ATM, or use their mobile banking app or site, to authorize payment from their current account. That can also be used to pay at an online site that generates an invoice.

2. How People Pay in Portugal

Unfortunately, as in many countries, there are no comprehensive data on the payment methods, and sources of funds, that people use to pay overall in Portugal.⁷⁹ The following presentation looks at various elements of how people pay.

The general portrait that emerges is that, as of around 2020, cards were the leading method for paying in physical stores and online; consumers pay bills and online purchases with direct debits; and cash accounts for a substantial portion of payments at physical stores. Mobile payment methods are used increasingly – both at physical stores and online – and the use of virtual cards online is rising.

The following statistical portrait of payments relies on two main sources.

ECB's Payments and Settlement Systems Statistics (PSSS) collects payments data in most EU countries, including Portugal. It publishes these data in its statistical warehouse. They are commonly used to measure payments in the EU. The most recent data available are for 2020.

The SPACE survey, sponsored by the ECB, collected data from 17 EU countries between mid-March and mid-December 2019 on various aspects of consumer payments. Respondents were asked to keep track of their payment transactions in one-day diaries. The SPACE survey also used payment diaries collected during 2017 and 2019 by Germany and the Netherlands. That resulted in data for 19 countries for similar questions asked in these surveys. These are the EU-19 countries identified above. The SPACE survey included Portugal for which there were 2,127 respondents.

When these sources provide conflicting results, we use discretion in choosing which to report. The SPACE data provide useful indications of payments behaviors that are not tracked otherwise. Respondents, however, do not necessarily understand some of the questions and may not record accurate data, such as the amount they paid.

The ECB Statistical Warehouse data is likely accurate at least for countries with sophisticated financial institutions that track data. The data refers to crude payment categories, however, and does not track mobile payment methods such as MB WAY or Apple Pay.

⁷⁹ The same is true in many countries although occasional surveys sometime provide more comprehensive (although self-reported) data.

a. Cash vs. Cards

To calculate the share of payments made with cash versus cards it is necessary to estimate the amount of cash use. Although systematic data on the use of cash pay is not available it can be inferred from the amount of cash that people take out annually.⁸⁰ People mainly get cash from ATM machines and bank branches both of which are reported by the ECB's PSSS as are card payments.⁸¹ These data are likely highly accurate and are available consistently across most countries. In 2020, payments made with cash accounted for 32 percent of household consumption expenditures in Portugal and, of all payments made with cards or cash, 34 percent.⁸² Of course, the percent of cash is higher at physical locations and nil at online ones.

As of 2020, 21.9 million payment cards had been issued in Portugal.⁸³ That works out to about 2.1 cards per capita or 2.4 per citizen aged 15 or older.⁸⁴ According to published data, about 95 percent of those cards had a debit and/or delayed debit function.⁸⁵ In 2020, debit cards accounted for 96 percent of card transactions compared to 4 percent for credit cards.⁸⁶

These data do not, however, capture the fact that many debit cards are co-badged with a credit card brand. These dual-function cards enable the cardholder to pay using debit, through MB, or to pay using credit, through their credit card issuer. Of the roughly 22 million cards with some payment schemes about 31 percent are dual-purpose which enable them to be used as credit cards.⁸⁷

b. Physical Points of Sale

Many retailers have EFTPOSs that can accept cards and other forms of digital payments. As of September 2021, 173,614 merchants had physical and/or digital acceptance through the MULTIBANCO network.⁸⁸ There were 354.6 thousand payment terminals in Portugal as of December 2020 compared to approximately 131 thousand retail establishments.⁸⁹ The SPACE survey reports that 71 percent of POSs made it possible for

80 Colgan, Gloria, David Evans, Scott Murray, and Karen Webster (2013) "Paying with Cash: A Multi-Country Analysis of the Past and Future of the Use of Cash for Payments by Consumers," Working Paper.

81 The SPACE survey also asks people where they get cash from including from ATMs. See European Central Bank (2020) "Study on the payment attitudes of consumers in the euro area (SPACE)" at Chart 59. We have also used the percent for 2017 for ATM use to infer the total amount of cash use based on PSSS data on ATM cash withdrawals. The cash percent for 2020 based on this approach is 33 percent compared to 34 percent based on assuming cash is obtained either from ATMs or over-the-counter.

82 Calculations based on data from the European Central Bank. See the following data series: "All cash transactions: Via customer terminals provided by non-resident PSPs - cash withdrawals", "All cash transactions - Via customer terminals provided by non-resident PSPs - cash withdrawals", "OTC cash withdrawals", and "Final consumption expenditure of households by consumption purpose". The SPACE survey reports that cash accounted for 54 percent of the value of POS and P2P transactions in 2019. One possibility for the difference is that it is based on people reporting the value of transactions and will understate card use if people don't report large value transactions which are typically made on cards. See European Central Bank (2020) "Study on the payment attitudes of consumers in the euro area (SPACE)" at Figure 1.

83 European Central Bank (2021) "Payments Statistics Full Report," at Table 10.1 Number of cards issued by resident PSPs, <https://sdw.ecb.europa.eu/reports.do?node=1000004051>.

84 The World Bank, "Population, total - Portugal" <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=PT>; The World Bank, "Population ages 0-14, total - Portugal," <https://data.worldbank.org/indicator/SP.POP.0014.TO?locations=PT>.

85 European Central Bank (2021) "Payments Statistics Full Report," at Table 10.1 Number of cards issued by resident PSPs, <https://sdw.ecb.europa.eu/reports.do?node=1000004051>. The ECB notes, "If a card offers several functions, it is counted in each applicable sub-category. Thus the total number of cards may be smaller than the sum of the sub-categories, and sub-categories should not be added up in order to avoid double-counting." See European Central Bank (2021) "Payments Statistics Full Report: Payments statistics: methodological Notes" at p. 2, <https://sdw.ecb.europa.eu/reports.do?node=1000002018>.

86 Calculations based on data from European Central Bank's Payments and Settlement Systems Statistics, and The World Bank, World Development Indicators

87 European Central Bank (2021) "Payments Statistics Full Report," at Table 10.1 Number of cards issued by resident PSPs, <https://sdw.ecb.europa.eu/reports.do?node=1000004051>.

88 Data provided by SIBS.

89 European Central Bank, "Number of POS terminals provided by resident PSPs - located in the reporting country - from Portugal," https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=133604&PUBLICACOESmodo=2&xlang=pt.

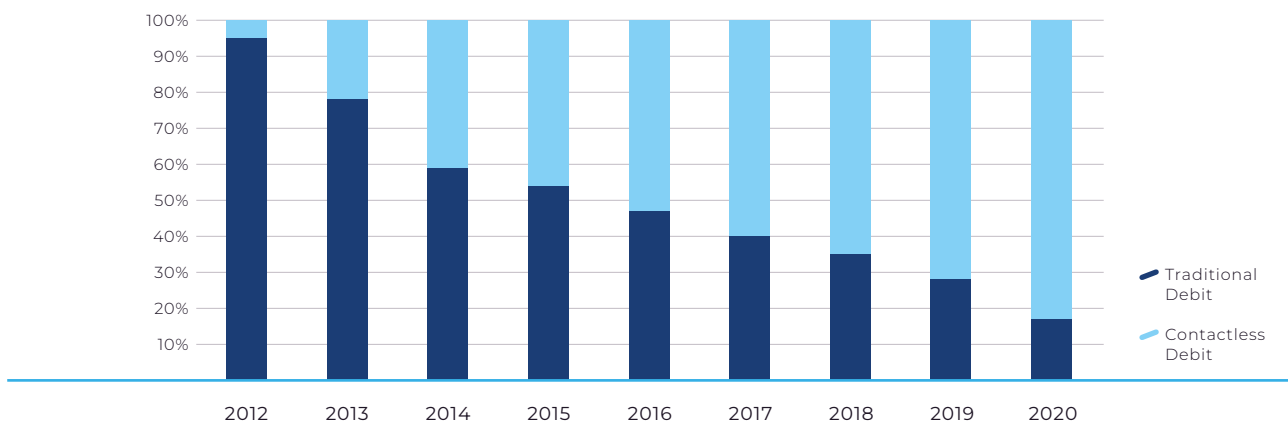
consumers to pay with cards or other non-cash payment methods and therefore had EFTPOSs. The 29 percent of POSs that only accepted cash are likely small merchants.

Around 95 percent of the EFTPOS terminals could take contactless payments from a domestic scheme, such as MB and about 59 percent from an international scheme such as a Visa debit card or Apple Pay. By 2020, 83 percent of debit cards in Portugal were contactless compared to just 22 percent in 2013. Figure 5 documents the move to contactless cards.

Contactless EFTPOS terminals are capable of taking Apple Pay, Google Pay, and other digital wallets that use NFC to communicate with the terminal. MB WAY can be used with both iOS and Android phones to pay with a QR code, or the latter only at contactless terminals with NFC. MB WAY cannot be used with iPhones to pay at contactless terminals because Apple does not allow payment apps to gain access to the “secure element” necessary for that.⁹⁰

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The use of SIBS’ mobile payment method, MB WAY, has grown rapidly at physical stores, particularly for low-valued transactions.
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Figure 5 Percent of Debit Cards in Portugal that are Traditional vs Contactless, 2012-2020



Source: SIBS

Despite the high penetration of contactless cards and terminals in Portugal, only 24 percent of transactions (23 percent based on value) were made with contactless with the remainder done by inserting the card in the terminal according to the SPACE survey for 2019.⁹¹ According to the Banco de Portugal, that share has increased to more than 40 percent of transactions as of December 2021.⁹²

⁹⁰ Apple’s refusal to allow competitors of Apple Pay access to the secure element has been the subject of several antitrust investigations. See European Commission, “Antitrust: Commission opens investigation into Apple practices regarding Apple Pay,” June 16, 2020, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1075; Reuters, “French watchdog warns of big tech’s sway over payment services,” April 29, 2021, <https://www.reuters.com/technology/french-watchdog-warns-big-techs-sway-over-payment-services-2021-04-29/>. The Australian government is currently considering new laws that would regulate digital wallets, including Apple Pay. See Reuters, “Australia considering new laws for Apple, Google, WeChat digital wallets,” August 30, 2021, <https://www.reuters.com/technology/australia-considering-new-laws-apple-google-wechat-digital-wallets-2021-08-30/>.

⁹¹ European Central Bank, “Study on the payment attitudes of consumers in the euro area (SPACE)” at Charts 8 and 9.

⁹² “Banco de Portugal: 40% of card payments were already ‘contactless’ at the end of 2021,” *Expresso*, 23 February 2022. <https://expresso.pt/economia/2022-02-23-banco-de-portugal-40-dos-pagamentos-com-cartao-ja-eram-contactless-no-final-de-2021>

Public data are not available on the use of mobile payments at EFTPOSs. SIBS reports that MB WAY has grown rapidly since its introduction in 2015 and it, along with Apple Pay, are increasingly used by Portuguese consumers.

c. Online Points-of-Purchase

In 2019, according to the SPACE survey, and shown in Table 8, 61 percent of the online transactions by value, and 38 percent by number, were made with cards. E-payment solutions, which include Pagamento de Serviços, accounted for 25 percent, by value, and 46 percent by number.

Table 8 Share of Payment Instruments for Online Transactions, Portugal

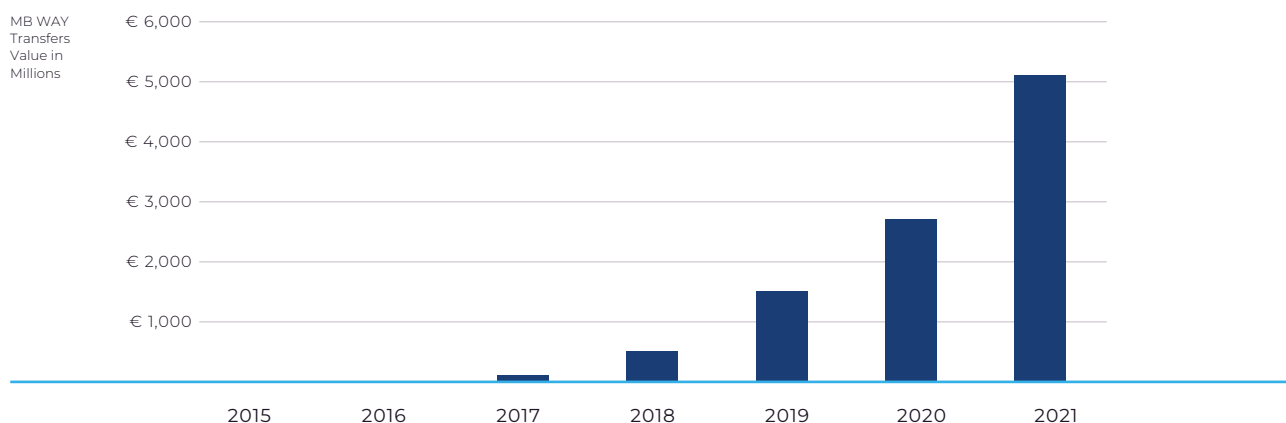
Instrument	Share of Transactions	Share of Transaction Value
Card	38%	61%
Cash	4%	2%
Credit Transfer	7%	8%
E-Payment Solutions	46%	25%
Other	4%	4%

Source: European Central Bank (2020) “Study on the payment attitudes of consumers in the euro area (SPACE),” at Charts 15-16.

At the same time, there is evidence to suggest that more transactions in the digital world are moving to MB WAY and digital wallets such as PayPal.

People also send money to each other online. MB WAY was used to do that for an increasing amount, as shown in Figure 8, surpassing €5 billion in 2021. Some of the P2P payments may also be for personal services such as a babysitter.

Figure 8 Value of MB WAY Transfers, 2015-2021



Source: SIBS

The SPACE report also reports how people make bill payments based on number. In 2019, 35 percent of bill payments were made with cards, 29 percent with direct debit, and 6 percent with other methods.⁹³ The SPACE survey finds that 16 percent of bill payments were made with cash.

d. ATMs

Portugal had 14,415 ATMs in 2021 according to data from the Portuguese Bank Association. The density of that network is reflected in the fact that the average number of ATMs per 1000 people is 1.4. ATMs are the major source of cash in Portugal as we saw above.

MULTIBANCO provides a number of services at its ATMs besides withdrawing cash. Consumers can pay their bills, top-up and charge their mobile phones, get a train ticket, and transfer funds between accounts at participating banks. As of September 2021, there were 24 million MULTIBANCO cards which provided ATM access.⁹⁴ Table 9 shows the number of different transactions conducted in 2021. Only 52 percent of the transactions at the ATMs involved cash withdrawal, which confirms the diverse ways that Portuguese consumers use these ATMs.

Metric	Inquiry	Withdrawal	Service Payment & Special Services	Others
Number	190,321,852	353,981,032	86,829,954	55,231,674
Share of Total	27.73%	51.57%	12.65%	8.05%

Source: SIBS. Others include Deposit, transfers, and various Value Added operations

Based on value, withdrawals amounted to €27.8 billion, payment services/special services €9.1 billion, deposits €8.1 billion, transfers €16.2 billion. Payment services refer to the functionality that covers multiple entities receiving payments in the “entity/reference” standard. Cash withdrawals only comprised about 45 percent of the value of transactions, further confirming the diverse use of ATMs in Portugal.

3. Portugal Compared to Other EU Countries⁹⁵

Portugal has a remarkably robust and innovative payment system given its relative size and per capita income.

As of 2020, Portugal had 10.3 million people,⁹⁶ with GDP per capita of €19,646.⁹⁷ Household consumption expenditure per capita was €12,594.⁹⁸ Compared to the EU-19. Portugal ranks 8th in population, 11th in household consumption per capita, and 14th in GDP per capita.

Portugal has the densest network of ATMs in Europe. There are 1.4 ATMs per 1000 inhabitants – compared with 0.85 for the EU-5 and 0.83 for the EU-19 in 2021. And those ATMs provide a much richer menu of services as discussed above than ATMs in other countries. This network provided highly innovative way of providing

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⁹⁴ Based on data from SIBS.

⁹⁵ All European averages are population weighted.

⁹⁶ The World Bank, “Population, total - Portugal,” <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=PT>.

⁹⁷ The World Bank, “Population, total - Portugal,” <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=PT>; The World Bank, “GDP (current US\$),” <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>; OECD, “Exchange rates,” <https://data.oecd.org/conversion/exchange-rates.htm>.

⁹⁸ The World Bank, “Population, total,” <https://data.worldbank.org/indicator/SP.POP.TOTL>; The World Bank, “GDP (current US\$),” <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>; The World Bank, “Households and NPISHs final consumption expenditure (% of GDP) - Portugal,” <https://data.worldbank.org/indicator/NE.CON.PRVT.ZS?locations=PT>; ; OECD, “Exchange rates,” <https://data.oecd.org/conversion/exchange-rates.htm>.

remote payment services to the population, including those without internet access, and when online banking was more primitive than it is today.

Portugal also has one of the densest networks of EFTPOSs in Europe. With 36.5 terminals per 1000 inhabitants, it ranks fifth in the EU-27 in 2021.⁹⁹ That enables people with cards, or smartphone apps, to pay digitally at many physical merchants.

In 2021, roughly 95 percent of people over the age of 15 have debit cards in Portugal which is slightly higher than the average for the EU5 at 97 percent. These debit cards provide access to ATMs and EFTPOSs not to mention online methods discussed below. Counting both debit and credit, the number of cards per capita is 2.2, the third highest in the EU-27.¹⁰⁰

With MB WAY, Portugal has also been a leader in the adoption of a widely accepted domestic mobile payments methods. While there is little data on the availability of mobile payment solutions by country, it does not appear that the EU-5 or the UK have a mobile payments method that is widely accepted at physical points of sale, supported by major domestic or international card networks, and with a large base of users. Apple Pay and Google Pay are the main mobile payment apps used in most countries although there are some smaller domestic schemes such as PayBack Pay in Germany. It also does not appear that virtual card solutions, similar to MB NET, are in use in major EU countries or the UK.

Portugal has made good progress in reducing the use of cash which provides an overall reflection of the impact of innovations in payments. We calculated the share of cash relative to household expenditures following the methodology described above for the EU-5 and twelve EU countries for which consistent data were available. Table 10 reports the cash share for 2020 and the percent decline in the cash share between 2014 and 2020. Portugal has a higher cash share than the EU-5 or EU-16 average, but its rate of decline has been substantially greater. As of 2020 its cash share was lower than Italy and was 7th out the 16 countries for which we had data.

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Table 10 Share of Household Consumption Expenditures Accounted for by Cash Payments

Metric	Portugal	EU-5	EU-16
Share in 2020	32%	25%	26%
Percentage Point Change Since 2014	-15%	-6%	-8%

Source: Calculations based on data from European Central Bank's Payments and Settlement Systems Statistics.

Note: Due to unavailability of data, EU-19 estimates exclude Austria, Finland and Malta for all years and Estonia and Luxembourg in 2014.

Portugal has achieved wide adoption of contactless terminals although it has lagged in issuing contactless cards. In 2020, according to the SPACE survey, Portuguese respondents indicated that they used contactless for 23 percent of all transactions by value.¹⁰¹ That compares to an average for of 29 percent for the EU-5 and

⁹⁹ Data is unavailable for Cyprus and Malta.

¹⁰⁰ Data is unavailable for Cyprus and Malta.

¹⁰¹ European Central Bank (2020) "Study on the payment attitudes of consumers in the euro area (SPACE)," Chart 9.

31 percent for the EU-19.¹⁰² Portuguese consumers used contactless less in than all EU-19 countries except France, Belgium, and Germany. MB is rolling out more contactless cards rapidly which will close these gaps and, as noted above, contactless had increased to over 40 percent in Portugal as of December 2021.¹⁰³

The Portuguese payment system has relative low fraud rates which makes cards more reliable for consumers and merchants. In 2019, the number of fraudulent transactions per thousand transactions was 9 per 100,000 transactions in Portugal compared with 36 for the EU-5 and 32 for the EU-19.¹⁰⁴

Finally, Portugal has made significant progress towards open banking, which will prove important for the discussion below. According to a recent report by Salt Edge, which evaluates the progress towards interoperability with banks, Portugal has one of the highest availability of API solutions.¹⁰⁵ Their study examined the extent to which API requests for services sent to banks that had made APIs available “were accepted by the banks’ APIs and successfully replied to.” In 2022, 96.5 percent of API requests were successful in Portugal which placed it second among European countries (the Czech Republic was first) and third including the UK.

4. The Role of SIBS in Portuguese Payments Innovation

SIBS has been the main driver of payments innovation in Portugal. It has been mainly responsible for developing the ATM network and the deployment of EFTPOSs in Portugal. That has resulted in the dense penetration of ATMs and EFTPOSs documented above. SIBS has also been responsible for developing and operating the card network in Portugal, which has facilitated the widespread adoption of electronic payments.

SIBS has spearheaded innovations throughout the payments ecosystem. As the operator of the main ATM network, it has introduced a series of features over the years that have enabled Portuguese consumers to engage in diverse transactions. In addition to bill payments, discussed above, SIBS has introduced other value-added services.

To name a few, in 1991 it introduced a toll collection system, Via Verde, which automatically debits tolls for roads and bridges from the user’s payments account. A few years later in 1997, it created the first ATM-top up for prepaid mobile services, making Portugal the first country to have this. It then introduced self-service top up of mass transit monthly passes at the ATM. In 2008, SIBS, on behalf of the National Forestry Authority, developed ATM functionality that enable people to obtain or renew a hunting license; the program won the Prize for the best online European Administrative Service in 2009. As a result of these and similar efforts, according to a 2017 report by the Centre for European Policy Studies, “ATMs in Portugal are among the most advanced in Europe....”¹⁰⁶

SIBS has also introduced significant innovations in mobile and online payment methods. It launched MB WAY, a popular mobile payment method, in 2015, three years before Apple Pay entered. It enables payment account holders at participating banks to:

102 The EU-19 estimate excludes Cyprus and Malta due to data availability. See European Central Bank (2020) “Study on the payment attitudes of consumers in the euro area (SPACE),” Chart 9; The World Bank.

103 One source of the delay is that, unlike chip and pin there are no international standards for contactless which requires domestic schemes, such as MB, to develop their own solutions.

104 European Central Bank (2021) “Seventh report on card Fraud,” at Table 2.

105 Salt Edge (2021) “State of open banking payments in Europe in 2021,” https://www.saltedge.com/resources/others/state_of_ob_payments.

106 Willem Pieter de Groen, Zachary Kilhoffer, and Roberto Musmeci, “The Future of EU ATM Markets,” Centre for European Policy Studies,” p. 46. https://www.ceps.eu/wp-content/uploads/2018/10/20181005_FutureofATM_0.pdf.

- Transfer money to other MB WAY participants using their mobile phone number. That is, MB WAY is a mobile-based P2P payment network.
- Pay in store at participating establishments by scanning a QR Code that is displayed by the MULTIBANCO network on EFTPOS or virtual terminals.
- Buy online by introducing a mobile proxy for the MB WAY-enabled merchant and authenticating the transaction in the mobile app, or by using MB NET to generate a virtual card number from international brands.
- Withdraw cash by generating a code from the app and entering it into the MULTIBANCO ATM terminal.

SIBS also launched MB NET. It generates a virtual card which consumers can use to pay securely online. It is based on an app for Windows, iOS, and Android. Consumers register a credit or debit card in the app. They can then generate a virtual card – that is a one-time card number – that allows them to make a purchase at domestic and international stores that accept Mastercard, Visa, or American Express.

As noted above, SIBS is also a processor and automated clearing house for account-to-account transactions, under the SEPA schemes, thereby providing connectivity to the European payment system – in all of SEPA scheme modalities. In particular, SIBS' SEPA Instant Payments Solution allows banks to make available to their customers account-to-account transfers of up to €100,000 and delivered within seconds, all across Europe as it provides interoperability through TIPS.¹⁰⁷

SIBS operates a market in which payment service providers, including banks and SIBS, can provide APIs which other parties, such as FinTechs, can use under the EU's open banking initiative. SIBS API Market is used by 25 API providers. SIBS enables several APIs from account information to payment initiation and funds confirmation. SIBS API Market processed 137 million API calls in 2021 allowing over 60 registered third-party providers from 19 countries to build services with a single connection to the whole Portuguese market.¹⁰⁸

B. The Emerging Role of Big Techs, FinTechs, and Pan-European Players in Portuguese Payments

The digital transformation, the growing importance of BigTechs and FinTechs, and SEPA-related developments are introducing new competition and sources of innovation into the Portuguese payment system. Many of these sources are still in their early days but have the prospect of becoming significant factors in the payments ecosystem, and competitive dynamics, over time.

The new modes of competition have been facilitated by the investments that the Portuguese payment industry have made in the retail payments industry. SIBS has developed the key infrastructure, including the card processing, instant payment processing, and open API platforms that financial institutions, issuers, acquirers, payment providers, payment facilitators, integrators,



 The new modes of competition have been facilitated by the investments that the Portuguese payment industry have made in the retail payments industry.



¹⁰⁷ SIBS, "Payments on Account," <https://www.sibs.com/en/produtos/payments-on-account/>.

¹⁰⁸ Data provided by SIBS.

merchants, and others use to develop services. Banks and merchants have made investments that resulted in the widespread availability and use of electronic payments.

Tech firms, for example, can count on consumers having debit cards that they can enter into the firms' digital wallets, and all online merchants and most significant physical merchants accepting these cards. Apple Pay, for example, had to sign up banks to include debit cards in its wallet but could depend on almost everyone with an iPhone having a debit card and the majority of merchants with contactless EFTPOS systems being able to take it.

FinTechs can also rely on the fact that almost all households have banks accounts and that these accounts are accessible with permission through reliable bank APIs that are disseminated on the API Marketplace. They can also rely on banks participating in interoperable instant payment systems.

Lastly, despite the small size of the country, multinational processors, equipment providers, and other payments companies coming into Portugal can depend on an advanced widely deployed digital payments industry.

1. Big Techs Have a Material Presence in Payments in Portugal

Apple, Google, and Amazon are already active payments players in Portugal while Facebook is increasingly active. Table 11 provides a summary based on available data of the number of relevant users in Portugal and the key products that are present in the market.

Table 11 Summary of Big Tech Companies' Payments Related Products in Portugal

Company	Payments Related Products in Portugal	Userbase in Portugal
Apple	Apple Pay, Apple Cash, Apple ID (App Store)	1.8 million iPhone users ¹⁰⁹
Google	Google Pay for Google Play, mobile payments on Android devices, and Chrome	5.4 million Android smartphone users ¹¹⁰
Amazon	Amazon One-Click, Amazon Pay	Not available
Facebook	Facebook Pay	7.9 million Facebook users (not including Instagram or Whatsapp) ¹¹¹

a. Apple

Apple Pay launched in Portugal in June 2019. It initially partnered with 3 neo-banks – Monese, N26, and Revolut, and later Lydia – and is currently partnered with 26 banks, which accounted for approximately 70 percent of consumer deposits in Portugal, as of December 2020.¹¹² It has not partnered yet with two large banks – Banco BPI and Novo Banco. Table 12 shows the participating institutions.

¹⁰⁹ There are an estimated 7.2 million smartphone users in Portugal and iPhones account for approximately 25% of the installed base of smartphones. See Telecompaper, "Portugal reaches over 84% smartphone penetration," <https://www.telecompaper.com/news/portugal-reaches-over-84-smartphone-penetration--1366923>; Statcounter, "Mobile Operating System Market Share Portugal," <https://gs.statcounter.com/os-market-share/mobile/portugal/#monthly-202101-202109>.

¹¹⁰ There are an estimated 7.2 million smartphone users in Portugal and iPhones account for approximately 75% of the installed base of smartphones. See Telecompaper, "Portugal reaches over 84% smartphone penetration," <https://www.telecompaper.com/news/portugal-reaches-over-84-smartphone-penetration--1366923>; Statcounter, "Mobile Operating System Market Share Portugal," <https://gs.statcounter.com/os-market-share/mobile/portugal/#monthly-202101-202109>.

¹¹¹ Statista, "Facebook users in Portugal from September 2018 to July 2021," <https://www.statista.com/statistics/1017409/facebook-users-portugal/>.

¹¹² Apple, "Apple Pay participating banks in Europe and the Middle East," as rendered on June 28, 2019, <https://web.archive.org/web/20190628203002/https://support.apple.com/en-us/HT206637>; Apple, "Apple Pay participating banks in Europe and the Middle East," <https://support.apple.com/en-us/HT206637>.

Table 12 Apple Pay Participating Banks in Portugal as of March 2022¹¹³

Activo Bank	moey!
Banco Montepio	Monese
Bank of America	N26
Bunq	Openbank
Caixa Geral de Depósitos	Payhawk
Cetelem	Paysera
CGD	Revolut
Credito Agricola	Santander
Curve	SumUp
FNAC (CaixaBank Payments & Consumer)	Unibanco
iCard	Universo
Lydia	Wise
Millennium BCP	ZEN.COM

There are an estimated 1.8 million iPhone users in Portugal¹¹⁴ of whom an estimated 98 percent have an iPhone 6 or higher model than can use Apple Pay.¹¹⁵ They can use Apple Pay at any contactless terminal, about 59 percent as reported above, that accept the international cards brands. Although there are relatively fewer iPhone than Android phone users in Portugal, iPhones are expensive phones that tend to be purchased by higher-income, and therefore higher-spending, people. There are no data available for Portugal on how many iPhone users have associated a payment credential with Apple Pay.

Based on the U.S. experience it is likely that the volume of Apple Pay transactions will increase substantially as a result of more users installing Apple Pay, more banks working with Apple, and more merchants accepting it. Apple may struggle as it has in the U.S. to get iPhone users to pay with Apple Pay when they can although as noted above it is making efforts to do so by providing incentives.

Apple Pay can also be used online. A 2020 survey by ACEPI found that Apple Pay was listed as a preferred payment option for online purchases by 12 percent of respondents versus 68 percent for cards, 55 percent for PayPal, and 50 percent for MB WAY.¹¹⁶ That is an impressive showing given that Apple Pay was only became available, and only for some banks, in mid 2019.

b. Google Pay

Google has a significant presence in Portugal generally. Android phones, which generally come with Google's leading apps, account for approximately 75 percent of smartphones as of 2021.¹¹⁷ Google Chrome accounted for approximately 70 percent of browsers used by consumers in Portugal during 2020.¹¹⁸

113 Apple, "Apple Pay participating banks in Europe and the Middle East," <https://support.apple.com/en-us/HT206637>.

114 There are an estimated 7.2 million smartphone users in Portugal and iPhones account for approximately 25% of the installed base of smartphones. See Telecompaper, "Portugal reaches over 84% smartphone penetration," <https://www.telecompaper.com/news/portugal-reaches-over-84-smartphone-penetration--1366923>; Statcounter, "Mobile Operating System Market Share Portugal," <https://gs.statcounter.com/os-market-share/mobile/portugal/#monthly-202101-202109>.

115 Based on iPhone web usage worldwide during 2020 Q3. See Device Atlas, "The most popular iPhones – 2020," December 3, 2020, <https://deviceatlas.com/blog/most-popular-iphones>.

116 Associação da Economia Digital (2020) "Economia Digital em Portugal Edição 2020," at Figura 28.

117 Statcounter, "Mobile Operating System Market Share Portugal," <https://gs.statcounter.com/os-market-share/mobile/portugal/#monthly-202101-202109>.

118 Statcounter, "Browser Market Share Portugal Jan - Sept 2021," <https://gs.statcounter.com/browser-market-share/all/portugal/#monthly-202101-202109>.

As a mobile payment method, Google Pay recently entered Portugal in November 2020. At the time of entry it partnered only with FinTechs/neo-banks. Table 13 list the current set of Google Pay participating banks. Google Pay works at contactless EFTPOS if the user has an Android phone with NFC capability. There is no data available on the extent to which merchants take Google Pay yet.

Table 13 Google Pay Participating Banks in Portugal as of March 2022¹¹⁹

BitPanda	Monese	UNICRE
Bunq	N26	Universo
Caixa Geral de Depositos	Openbank	Viva Wallet
Curve OS Ltd	PayrNet	Wise
iCard	Paysafe Financial Services Limited	ZEN.COM
Lydia	Revolut	
Millennium bcp and ActivoBank	Swan	

c. Amazon

Amazon has the second-largest online store in Portugal (counting amazon.com and amazon.es) after El Cortés Ingles, the large Madrid-based department store which operates elcorteingles.pt.¹²⁰ Amazon made its Amazon Prime membership program, which now accounts for most U.S. users, available in Portugal in May 2021. Amazon, however, does not have warehouses in Portugal, and did not provide a Portuguese-language version of amazon.es until February 2021. Consumers therefore order from the Spanish store, which provides free delivery in Portugal, or the U.S. store.

Amazon's online customers in Portugal use its one-click method relying on the card credential that are also used for Amazon Pay. There is not data on Portuguese online stores taking payment with Amazon Pay. Portuguese Amazon users, however, may have this option when they shop at online stores outside of Portugal that take Amazon Pay.

d. Facebook

Facebook is widely used in Portugal with an estimated 7.9 million users in a population of 10.3 million.¹²¹ That does not include Messenger, Instagram and WhatsApp.

Facebook Pay is available in Portugal.¹²² Facebook users can use it on the social network to pay shop, buy tickets, purchases games, and make donations. Currently, people in Portugal cannot use Facebook Pay on Messenger to send and receive money.

¹¹⁹ Google Pay Help, "Portugal: Supported payment methods," <https://support.google.com/pay/answer/10173491?hl=en>.

¹²⁰ Statista, "Most popular online stores in Portugal in 2020, by e-commerce net sales," <https://www.statista.com/forecasts/988481/top-online-stores-portugal-ecommercedb>.

¹²¹ Statista, "Facebook users in Portugal from September 2018 to July 2021," <https://www.statista.com/statistics/1017409/facebook-users-portugal/>.

¹²² Facebook Pay, "Current availability," <https://pay.facebook.com/availability>.

2. FinTech/Neo-Banks are Increasing Presence in Portugal

We have already seen that FinTechs, including neo-banks, are operating in Portugal. Portuguese users of Apple Pay and Google Pay can use debit and credit cards from a number of FinTechs mainly based in the EU and UK. That means that those entities serve Portuguese consumers and that if Portuguese consumers want to use Apple Pay or Google Pay they can turn to a FinTech. Viva Wallet enables merchants to accept cards on Android devices. It also operates a payments gateway for online merchants. Table 14 lists all of the FinTechs that Apple Pay and Google Pay work within Portugal and the location of their headquarters.

Table 14 FinTechs/Neo-Banks That Apple Pay and Google Pay Work within Portugal¹²³

Company	Owned by Traditional Bank	Headquarters
BitPanda	N/A	Austria
Bunq	N/A	Netherlands
Curve OS Ltd	N/A	United Kingdom
iCard	N/A	Bulgaria
Lydia	N/A	France
moey!	CCAM	Portugal
Monese	N/A	United Kingdom
N26	N/A	Germany
Openbank	Banco Santander, S.A.	Spain
Payhawk	N/A	United Kingdom
PayrNet	N/A	United Kingdom
Paysafe	N/A	United Kingdom
Paysera	N/A	Lithuania
Revolut	N/A	United Kingdom
SumUp	N/A	United Kingdom
Universeo	N/A	Portugal
Viva Wallet	N/A	Greece
Wise	N/A	United Kingdom
ZEN.COM	N/A	Poland

In addition, a diverse group of FinTechs are providing various payments and remittance services, for consumers and merchants, in Portugal. Table 15 is based on the Portuguese FinTech Report for 2020 and 2021 which list the top FinTechs; we have added others that we know to be operating in Portugal. Of the 24 firms, 14 are based in Portugal, 22 in the EU, and 2 in the UK. Of these firms, 12 provide payments and remittance services for consumers, 4 provide digital gateways for online stores, and 3 offer merchant POS services. Besides these firms there is PayPal which, as we saw above, is one the most popular online payment methods.

¹²³ Apple, "Apple Pay participating banks in Africa, Europe, and the Middle East," <https://support.apple.com/en-us/HT206637>; Google Play Help, "Portugal: Supported payment methods," <https://support.google.com/pay/answer/10173491?hl=en>.

Table 15 New FinTechs/Neo-Banks that Provide Various Payment and Remittance Services in Portugal

Name	Headquarters	Owned by Traditional Bank	Consumer Payments and Remittances Services	Digital Gateways for Online Stores	Merchant POS Services
Ebury	United Kingdom	Banco Santander, S.A.	Yes	No	No
Lydia	France	N/A	Yes	No	No
Viva Wallet	Greece	N/A	No	Yes	Yes
EasyPay	Portugal	N/A	Yes*	No	No
FeedZai	Portugal	N/A	No	No	No
Hapi	Portugal	N/A	No	No	No
IfThenPay	Portugal	N/A	No	Yes	No
Invoicexpress	Portugal	N/A	No	No	No
Switch	Portugal	N/A	No	Yes	Yes
Revolut	United Kingdom	N/A	Yes	Yes	Yes
Best Bank	Portugal	Novo Banco, S.A.	Yes	No	No
Banco BiG	Portugal	N/A	Yes	No	No
ActivoBank	Portugal	Millennium bcp	Yes	No	No
Moey!	Portugal	CCAM	Yes	No	No
Bunq	Netherlands	N/A	Yes	No	No
N26	Germany	N/A	Yes	No	No
Openbank	Spain	Banco Santander, S.A.	Yes	No	No
Coverflex	Portugal	N/A	No	No	No
Arcopay	Spain	N/A	Yes	No	No
Tink	Sweden	N/A	No	No	No
Fraudio	Netherlands	N/A	No	No	No
YooniK	Portugal	N/A	No	No	No
Swood	Portugal	N/A	No	No	No
YData	Portugal	N/A	No	No	No

Source: Own elaboration based on Portugal Fintech Report (2020 & 2021), Firms' websites, and SIBS.

Note: *Payments services for businesses

As noted earlier, through SIBS API Market, FinTechs can access APIs that reliably connect with all significant banks in Portugal.

In addition to the FinTechs listed above, Portugal also has two licensed cryptocurrency exchanges – Criptoloja and Mind the Coin – as of June 2021.

3. International Payments Firms Operating in Portugal

For many years, through the first decade of the 2000s, there were just a few significant multinational payments firms operating in Portugal. As discussed above, these included the two U.S.-based global four-party card schemes – Visa and Mastercard – as well as the three-party US-based American Express.¹²⁴ Banco Santander, the Madrid-based global financial services firm, has operated one of the largest banks in Portugal.

These players may increase their presence in Portugal as a result of FinTech acquisitions. Mastercard's purchase of Aiiia enables it to serve as an intermediary between FinTechs and banks to provide value-added services under PSD2. Aiiia, for example, is integrated into Santander. Visa's proposed purchase of Tink could enable it to do the same. Meanwhile Santander's purchase of Pagonxt enables it to expand into provide payments services to merchants – both physical and online – and consumers.

Many multinational firms have entered, or grown their presence materially, in the last decade, in addition to the BigTech providers and PayPal already discussed.

- Firms that focus on ATMs or terminals, including virtual ones, for physical establishments include: Comercia Global Payments, Elavon, Euronet, Hipay, MyPOS, SaltPay, Sumup, VivaWallet, and Littlepay.
- Online payment processors and gateways include Adyen, Braintree/PayPal, Stripe, Worldpay, Checkout.com, Lemonway, and Mastercard. Online payment providers including wallets and credit offerings include: N26, Verse, Lydia, Curve, Wise.
- For acquiring for physical merchants, vertically integrated providers include Global Payments (partner of CaixaBank), Elavon Payments, InterCard Finance, Worldline, Paybyrd, and Viva Wallet.
- Other FinTechs include Fraud.io, Feedzai, and Auriga.
- A number of international firms started offices in Portugal which indicates likely entry and expansion including Nickel, Hi-pay, Revolut, Mollie, Tink and Anchorage.

Many multinational firms have entered, or grown their presence materially, in the last decade, in addition to the BigTech providers and PayPal.

Non-traditional issuers in Portugal, such as Revolut and Universo are using international processors such as Global Processing Services and MasterCard Processing.

4. Panoply of New Payments Players in Portugal

It bears emphasizing that these are early days in the latest digital transformation of payments. But all indications are that we have entered into a period of rapid innovation and dynamic competition, across the globe, and particularly in the EU. The digital transformation is breaking down borders as consumers and merchants gravitate towards digital, mobile, and app-based solutions. This vibrancy is already seen in Portugal. There is a panoply of new payments players in Portugal, many associated with large multinational tech firms or with well-financed and rapidly growing FinTechs and Neo-Banks.

Domestic players have some advantages in competing with these entrants into Portugal. They are well established, well known, and can differentiate their product offerings to appeal to local taste and needs. They will need to leverage these capabilities to compete with much larger businesses who can benefit from global economies of scale and scope, synergies from offering diverse product lines, and deep resources such as in machine learning, data, and artificial intelligence.

The BigTech firms obviously dwarf local firms. In 2021 Apple's global revenue was nearly 1,400 times larger than SIBS.¹²⁵ But even the payments-related parts of these firms loom large over local players. PayPal, for example, has more than 400 million active users globally which is about 40 times the population of Portugal. The traditional players, many of which have moved into digital services through investments or acquisitions are also formidable relative to domestic players. Visa, for example, processed 233 billion transactions between October 1, 2020 and September 30, 2021, compared to 7.5 billion for SIBS (31 times more) in 2021.

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The BigTech firms
obviously dwarf local
firms. In 2021 Apple's
global revenue was
nearly 1,400 times larger
than SIBS.
≡

125 Calculation based on data from S&P Capital IQ and SIBS.