

EUROPEAN REGION

PORTUGAL

STATISTICAL YEARBOOK

2024

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NOTE FOR EUROPE

The 22nd Edition of the Digital & Payment Card Yearbooks has some statistical reporting changes to address. The statistical data for 2022 is based on the new ECB regulation ECB/2020/59, which replaced the ECB reporting statistics regulation from 2013 up to 2021 (ECB/2013/43), the well proven ECB bluebook reporting is discontinued.

For 2022, the ECB has declared all data as provisional, because the first-time reporting under the new standard may include errata and double counting.

The researchers and editors have worked hard in this 22nd edition to balance out any obvious errata, but it remains that in some instances the data from 2022 cannot be compared to 2021.

Where this has occurred, we have clearly stated it and have added explanation to the table and text.



INTRODUCTION

PORTUGAL

Market Overview

Payment Organizations

SIBS - interbank organisation, manages the Multibanco networks

Unicre - interbank organisation, main acquirer, Unibanco issuer.

Domestic Payment Brands

Multibanco (MB) cards, co-badged Maestro, Electron, Mastercard or VISA. MB cards can have debit and/or delayed debit function and a credit and/or delayed debit function on a single card.

MB Way wallet, the mobile payment app developed by SIBS. Unibanco credit cards co-badged VISA or Mastercard.

Market Structure

Portugal's Multibanco ATM and POS network is one of the most advanced in the world with more than 100 ATM service functions.

Card payments by number are 6.65-times higher than withdrawals.

Though domestic banks account for most of the retail banking market, Santander owns the fourth-biggest Portuguese bank.

The three largest banks control 58.6% of the total bank assets.

In 2017, Banco Santander Totta absorbed Banco Popular. Emerging Open Banking payment ecosystem.

Notable Market Trends

Contactless cards, MPOS terminals, QR-codes, MB WAY wallet.

Following the lingering effects of the pandemic, remote payments surged by 48% in volume and 120% in value in 2022.

Major Card Issuers

Caixa Geral de Depósitos (CGD), Millennium bcp, Novo Banco, Banco BPI, Banco Santander Totta.

Major Card Acquirers

Unicre, CGD netcaixa, Millennium bcp, EuroBIC, Novo Banco, Banco BPI.

Major Card Processors

SIBS FPS, Redsýs (E), Fiserv, bank IT in-house; Fiserv

Key Statistics 2022

Population	10.29 million, with 2.33 cards per capita
Card Functions	Cards with debit and/or deferred debit function: 20.35 million Cards with credit and/or delayed debit function: 8.65 million Total cards: 24.02 million.
Card Payments	Debit and/or deferred debit: 1.91 billion; value €98.68 billion Credit and/or delayed debit: 344.28 million; value €13.66 billion Total: 2.30 billion; value €114.83 billion.
POS	407,927; 384,685 are MB Net terminals
POS Payments	All cards: 1.56 billion; value €60.10 billion.
ATMs	13,088, of which 12,000 were MB Net ATMs.
ATM Transactions	All cards 390.36 million; value €30.67 billion.
Digital A2A Payments	Credit Transfers: 333.1 million; value: €1,444.5 billion Direct Debits: 258.5 million; value: €39.5 billion

Note: Banco de Portugal aligned its statistical reporting with the ECB standard.

Note: *Italic* forecast figures for 2023F are estimated in the payment market context based on 2022 figures.

Source: ECB, Banco de Portugal, SIBS, Redunice.

INTRODUCTION – PAYMENTS IN PORTUGAL

Portugal is a semi-presidential representative democratic republic, which joined the European Union in 1986 and the euro zone in 1999.

Portugal's payment market has undergone a transformation from a largely cash-based society to one that favours card usage and digital channels. Structural changes to the banking business model have encouraged digitisation, particularly in relation to the uptake of mobile payments provided by the influence of the Spanish banking groups which have a significant role in the Portuguese bank sector.

The adoption of the revised Payment Services Directive, PSD2, and disruptive technologies have set the stage for digital payments for the digital economy in Portugal. They have accelerated digital payment transformation and mobile payment services, as well as cardless IBAN-based payments directly from bank accounts.

In the last decade, Portuguese consumers have embraced mobile devices such as tablets, smartphones and Internet of Things (IoT). This change significantly impacts their shopping experience. Consumers have become increasingly connected and they have started to purchase anywhere, at any time, from any device.

In addition, new consumer demands are a game changer. Portuguese consumers like digital banking apps with access to all their accounts at different banks in one single app, with the option to make payments directly from their bank account of choice. Additionally, they appreciate more banking services and payment services added to their mobile banking app. Consumer adoption of digital payments in Portugal is driven by minimal cost, secure payments and a high level of user convenience.

Driven by the development of social media and mobile devices, the emergence of permanently connected consumers has impacted their interactions with brands but also their expectations of how to shop using the increasing number of touch points between consumers and merchants, e.g.:

- Using mobile devices in-store to look up products or additional information on the internet
- Using mobile devices in-store to shop at the same merchant or online at another merchant
- Using mobile devices to purchase at home in online shops or scan outdoor for advertised products
- Using mobile apps to shop online, or using QR-codes to bridge from merchant posters to their online shops.

The ongoing rollout of a mature online and mobile communication infrastructure is an enabler for digital card payment transformation and for Open Banking payments in Portugal.

In a few years from now, mobile banking apps and mobile payment apps are expected to combine account management, digital payment services, personal finance management and value-added digital services from location finders to digital vouchers.

Cash payments, card payments and cardless payments directly from bank accounts (A2A payments) remain all relevant for Portuguese merchants and are heavily used by Portuguese consumers.

This country profile provides a brief introduction into two competing payment ecosystems in Portugal:

- Card payment ecosystem
- Cardless Open Banking payment ecosystem.

Legal Framework for Payment Services

The legal framework for European payment services is a joint project undertaken by the European Commission as the regulator, the European Central Bank (ECB) as the Euro System, and the European Payments Council (EPC) with the objective of standardising payments in Europe and to remove existing barriers, promote cross-border competition between payment services, strengthen the European internal market and drive the digital payment transformation.

Based on its vision, the EU Commission has therefore created a unique legal framework for cashless B2C and B2B payments that supersedes pre-existing national legislation and is binding for financial service providers and payment service providers throughout the EU.

Portugal has largely transposed this legal framework into their national payment legislation.

Historically, there has been a de facto national regulation of all Portuguese payment schemes with high technical barriers to ensure and defend payment security.

With the implementation of the payment services directive, all payment services in Portugal are based on the unique legal framework for payment services of the European Commission effective in the European Economic Area (EEA).

In addition, the respective rules and regulations of the domestic card scheme and the international card schemes continue to be applied by the card payment service providers (e.g. EMV, PCI, RTS SCA, and SEPA Cards Framework), respectively.

Legal Framework relevant for Payment Services in Portugal

The revised Payment Services Directive, PSD2, had established a legal and regulatory framework for payment services providers, enforcing several protections for their clients such as safeguarding of funds; and required them to execute processes in accordance with banking regulations, such as KYC and AML. It has already resulted in significant progress regarding

the integration of the European retail payments markets.

Following the alignment with the EEA region, the legal framework for payment services in Portugal includes the directives and regulations of the European Commission (EC), the ECB, and/or the national central bank (NCB) of the individual country.

All card payment service providers and all cardless payment service providers of the Open Banking payment ecosystem must apply for the European legal framework including:

Revised Payment Services Directive (PSD2)

PSD2 is the key directive for borderless banking and payment services in Europe. Among others, PSD2 regulates digital payment services and payment service providers such as payment institutions, e-money institutions, payment initiation service providers and account information service providers. PSD2 formulates the Open Banking Mandate for regulated access to payment accounts.

General Data Protection Regulation (GDPR) - effective from May 2018

GDPR establishes a regulatory framework for customer control of their data through consent mechanisms, the right to be forgotten and the right to retrieve all personal data for re-use at other service providers of choice, thereby preventing a 'lock-in' situation.

E-Money Directive (EMD)

The EMD sets out the rules on the business and supervision of e-money institutions.

Anti-Money Laundering Directive (AMLD)

The AMLD6 aims to improve the harmonisation of the criminal liability of money laundering and terrorist financing across the EU27.

Customer Rights Directive (CRD)

CRD gives consumers the same strong rights across the EU. It aligns and harmonises national consumer rules, for example on the information consumers need to be given before they purchase something, and their right to cancel online purchases, wherever they shop in the EU.

EU Price Regulation for cross-border payments

In 2001, Regulation (EC) No 2560/2001, followed in 2009 by Regulation (EC) No 924/2009, fixed uniform underlying conditions for processing cross-border payments in euro, and the fees for intra-EU cross-border payments in euro were aligned with those for domestic payments in euro.

SEPA End-Date Regulation

SEPA payment instruments replaced domestic A2A payment instrument formats for euro payments.

Card Interchange Fee Regulation (IFR)

The IFR caps interchange fees for payments with consumer cards, effective from 9 December 2015. It increases transparency on fees thus permitting retailers to know the level of fees

paid when accepting cards.

Domestic bank service laws

Complementary to EC directives and EC regulations.

Characteristics of the PSD2 Outlook: PSD3 and PSR

The adoption of PSD2 has formalised the relationship between banks and trusted payment providers (TPPs) by establishing the Open Banking Mandate providing open access to customer account data and the payments infrastructure. This is expected to stimulate the FinTech market to develop new integrated services models for both consumer and business customers.

This regulation is a reaction to the growing demand from customers as mobile and internet applications have become widely adopted, driving expectations in how services should be delivered across all industries. Other market segments have adopted Open Banking APIs to respond to this demand and shown that innovative applications can grow business and change customer behaviour.

PSD2 has a significant impact on the European payments industry. According to the EC, the revised Payment Services Directive brings several new important elements and improvements to the EU payment market e.g.:

- To restrict the exceptions where payments services are outside of the PSD
- To include currencies other than the euro currency in the scope of the PSD2
- To include white label ATM service providers to be licensed as payment institutions
- To include Payment Initiation Service Providers (PISPs) in the scope of the PSD2
- To include Account Information Service Providers (AISPs) in the scope of the PSD2
- To cover regulatory challenges regarding surcharges on card transactions ('forbidden')
- To cover regulatory and security challenges posed by a range of online payments services and new mobile payments services expected to explode onto the European scene over the next two years
- Regulation of Payment Initiation Services - It facilitates and renders the use of internet payment services more secure, by including within the PSD2 scope, the new so-called *payment initiation services*. These services operate between the merchant and the purchaser's bank, allowing for cheap and efficient electronic payments without, for example, the use of a credit card. *These service providers will now be subject to the same high standards of regulation and supervision as all other payment institutions.*

- Access to Current Account (XS2A) - to cover regulatory and security challenges posed by single leg transactions e.g., the regulatory approved access of *non-bank* payment initiation services to the bank account of a user at the user's bank, once access is granted by the user ('get account information'). PSD2 mandates that the information details exchanged between trusted payment providers (TPPs) and account holding banks (ASPSPs) is as minimal as possible. For example, the PISP may only receive a Yes/No answer from the consumer's bank about the availability of funds before initiating the payment.
- At the same time, banks and all other payment service providers will need to step up the security of online transactions by including strong customer authentication for payments.
- Consumers will be better protected against fraud, possible abuses, and payment incidents (e.g. in case of disputed and incorrectly executed payment transactions). Consumers may be required to face only very limited losses - up to a maximum of €50 (vs €150 currently) - in cases of unauthorised card payments
- The proposal increases consumer rights when sending transfers and money remittances outside Europe or paying in non-EU currencies.

In 2022, the regulator started a PSD2 review process, which will end up in a revised PSD2 dubbed PSD3. While consultations are currently ongoing, the revisions are expected to address the achievements of the PSD2 and evaluate the need for a revised standard.

Proposed EC Revisions to the EU Payment Services Regulation - PSD3 and PSR

In June 2023, the European Commission (EC) published its proposed revisions to EU payment services legislation, as well as a proposal on Open Finance/data access in the financial services sector beyond Open Banking/payment accounts in the form of a new Open Finance framework called "FIDA".

Essentially, the EC is proposing that PSD2 would be split into two different instruments. These will ensure consumers can continue to make electronic payments and transactions safely and securely in the EU, domestically or cross-border, in euro and non-euro. Whilst safeguarding their rights, it also aims to provide greater choice of payment service providers on the market:

- A third Payment Services Directive (PSD3) that would deal with the authorisation process for payment institutions (PIs), for electronic money institutions (EMIs) and the prudential regime. The directive remains the most appropriate instrument since licensing and supervision of PIs remains a national competence of EU Member States.
- A separate Payment Services Regulation (PSR) that would deal essentially with rules (and related penalties) for PSPs and users. The European Banking Authority (EBA), in its Opinion on PSD2 (published in June 2022), identified differences in Member States' approaches to applying PSD2, and an EBA Peer Review (published in January 2023) concluded that deficiencies in approaches led to different supervisory expectations for PIs and EMIs.

Among others, the PSR includes a shift in liability that adds complexity for financial institutions combatting APP fraud scams and new account fraud.

- A proposal on Open Finance/data access in the financial services sector beyond Open Banking/payment accounts in the form of a new Open Finance framework called "FIDA", a legislative proposal for a framework for financial data access. This framework will establish clear rights and obligations to manage customer data sharing in the financial sector beyond payment accounts. In practice, this will lead to more innovative financial products and services for users and will stimulate competition in the financial sector.

The objective of the regulation is to enhance harmonisation of the rules and enforcement across the various EU Member States. In addition, the EC proposed to merge the E-Money Directive (EMD2) with the proposed PSD3 and PSR texts, so as to have one coherent regime for both payment services and e-money services, and thereby ensure a level-playing field between PIs and EMIs.

PSD3 also amends the Settlement Finality Directive (SFD) in order to allow non-bank PSPs (e.g. PIs and EMIs) to participate directly in SFD-designated payment systems. Fintechs will be given access to all EU payment systems, with appropriate safeguards, and giving them a right to have a bank account. That way, those non-bank PSPs would no longer need to rely on banks in order to execute payment transactions.

A system to check IBANs and a platform to enable payment service providers to share fraud-related information are two proposals around consumer protection, including an extension to all credit transfers of IBAN/name-matching verification services. These have been proposed by the Commission for instant payments in Euro. All consumers should benefit from them, for both regular and instant credit transfers.

The European Banking Authority (EBA) is given once again a number of mandates under PSD3 and the PSR to prepare draft regulatory technical standards (RTS) and draft implementing technical standards (ITS), ultimately to be adopted by the EC, as well as guidelines, and to continue maintaining the register.

General Data Protection Regulation (GDPR)

The General Data Protection Regulation (GDPR) is a legal framework that sets guidelines for the collection and processing of personal information from individuals who live in the European Union (EU). Since the Regulation applies regardless of where websites are based, it must be heeded by all sites that attract European visitors, even if they don't specifically market goods or services to EU residents.

Adopted in April 2016, the Regulation came into full effect in May 2018, after a two-year transition period. The GDPR replaces the Data Protection Directive 95/46/EC and is designed to:

- Harmonise data privacy laws across Europe
- Protect and empower all EU citizens data privacy

- Reshape the way organisations across the region approach data privacy

The GDPR mandates that EU visitors to all websites must be given a number of data disclosures. Sites must also take steps to facilitate such EU consumer rights as timely notification in the event of personal data being breached (breach notification). Among others, the GDPR mandates the user's right to access their data and the right to be forgotten. In addition, the conditions for consent have been strengthened, and companies are no longer able to use long, illegible terms and conditions full of legalese. Also, it must be as easy to withdraw consent as it is to give it.

eIDAS Regulation and Digital ID Trends

The electronic Identification, Authentication and Trust Services regulation (eIDAS) is a set of EU standards and regulations for electronic identification and trust services for electronic transactions in the European Single Market. It was established in the EU Regulation as of 23 July 2014, relating to electronic identification, and repeals directive 1999/93/EC from December 1999. It entered into force on 17 September 2014 and applies from 1 July 2016 except for certain articles, listed under its article 52.

In June 2021, the European Commission proposed an update to eIDAS that will enable every European to have a set of digital identity credentials recognised anywhere in the EU. With eIDAS 2.0, by 2024, all EU member countries must make a digital identity wallet available to every citizen who wants one. Many digital ID schemes operate based on super-secure passwords and/or mobile apps confirmed by a second factor, either passwords or one-time token or biometric factors such as fingerprints.

Digital ID in Europe has been proliferating rapidly in recent years. To date, both the nature of these schemes and their application have varied widely - for example, BankIDs in the Nordics being used to support instant payments and the delivery of harmonised government services.

The EU also confirmed in June 2021 that it is to introduce a European Digital Identity Wallet that will enable citizens to link their national digital identity with other personal attributes and will be recognised in all 27 EU member states.

eID platform initiative - In May 2017, a group of European companies including banks, vehicle manufacturers, and technology providers signed a "corresponding declaration of intent" to establish a joint, pan-industry platform that will let their customers use a so-called "master key" for registration and identification when accessing online services across a range of sectors including government, aviation and retail.

Biometric Authentication Services

As a form of digital identity, biometric factors have been gaining ground across Europe in recent years, especially since the EU mandated their use for national ID cards and passports from August 2021.

In the payments industry, European banks and other account servicing payment service providers

(ASPSPs) have started to support new biometrics technology companies that will develop client identification and authentication systems. They will be dedicated to the research and development of software for the digital verification and authentication of personal identity, through facial, voice, image or document recognition, or fingerprint reading.

With the EU regulator's decision to mandate Strong Customer Authentication (SCA) as part of the revised payment services directive, PSD2, biometric authentications look set to grow further in importance as part of the payments landscape.

Companies such as Sweden's Fingerprints (for online payment ID) and the UK's Fingopay (for physical payments) have pioneered their use in P2P and P2B transactions, while some national ID schemes such as BankID in the Nordics and nemID now include biometric factors alongside PIN in their log-in processes.

Among others, in 2023, payments-specific biometric initiatives and pilots in Europe include:

- Unlocking mobile wallet apps using biometric ID technology
- Biometric in-app authentication and biometric logins for one-click access to financial services
- Biometric in-app authentication of Apple Pay payments
- Contactless biometric cards that include an integrated fingerprint biometric sensor in parallel to PIN authentication
 - Biometric authentication of cash withdrawals at ATMs using biometric finger vein scanners
 - Finger vein recognition technology to authenticate users at the point-of-sale
 - Lock-screen payment functionality and biometric authentication via Touch ID added to mobile app platforms

Mastercard Identity Check - In October 2016, Mastercard launched its biometric payment authentication service, Mastercard Identity Check in 12 European countries. European consumers can now validate online purchases using 2-factor authentication such as one-time codes sent by SMS or fingerprints in their mobile app.

BANKING SECTOR

BANKING SECTOR

Established in 1846, Banco de Portugal (BDP) is the national central bank and supervises the Portuguese banking system. BDP is responsible for the prudential and market conduct supervision of credit institutions, financial companies, and payment institutions with a view to ensuring the stability, efficiency, and soundness of the financial system. The legal framework in which Portuguese financial institutions and companies operate based on European Union directives and Portuguese banking laws.

On 4 November 2014, the European Central Bank (ECB), via the Single Supervisory Mechanism (SSM), assumed the responsibility of supervising the financial stability of banks operating within the euro zone. However, while the ECB has final supervisory authority over all banks operating within the euro zone, it will only directly supervise those banks classified as 'significant' under the terms of the SSM (by September-2023, 109 significant banking groups have been recognised). All other 'less significant' banks continue to be supervised by Banco de Portugal.

In 2014, the Portuguese economy returned to modest growth (0.9%), after three consecutive years of economic recession. In 2019, Portuguese GDP grew by 2.2%, but due to the economic impact of the COVID-19 pandemic, GDP fell by 8.4% in 2020, one of the steeper declines in the EU. Portuguese GDP grew 4.9% in 2021, according to data from Statistics Portugal (INE), the highest rate since 1990, reflecting an acceleration of exports of goods and services in volume. Portugal's GDP grew 6.7% in 2022, its strongest pace in 35 years, fuelled by domestic demand and booming tourism. The IMF expects growth to soften to 2.6% in 2023 as higher prices (especially food and energy) weigh on demand growth. Meanwhile, inflation in 2020 remained stagnant at 0.0%, down from 0.3% in 2019. By 2021, inflation was 1.3%, while the annual average rate of change of the Portuguese Harmonised Index of Consumer Prices (HICP) was 0.9% (-0.1% in 2020). In 2022, annual inflation worsened to 8.1% from 0.9% in 2021 due to the steep rise in global energy and food prices, as well as the severe drought in Portugal until September 2022. In response, Portugal has adopted measures to counteract the impact of the rise in energy. With measures including lump-sum payments to low-income households, a reduction of the fuel tax, the suspension of the increase in the carbon tax, and a reduction of the VAT for electricity, inflation is projected to gradually diminish in 2023-24.

Structure

According to BdP, in 2022, there were 157 credit institutions, 25 financial companies, two branches of subsidiaries of EU-based credit institutions, and 21 registered representative offices of credit institutions and financial companies based abroad. There were also 480 EEA cross-border credit institutions as of 2022.

The three largest banks are Caixa Geral de Depósitos (CGD), Millennium bcp, and Banco Santander Totta). They controlled 58.6% of the banking sector's total assets in 2021 while the five largest banks controlled 82.2%.

Three Portuguese banks are state-owned: Caixa Geral de Depósitos (CGD), Novo Banco, and Banco Efisa. In December 2015, the former state-owned Banco Internacional do Funchal (Banif) was sold to Banco Santander Totta, excluding Oitante, the toxic bank part of BANIF.

Other major banks active in Portugal include CA Crédito Agrícola (CCCAM) with 617 branches, and CEMG Montepio (246 branches). In August 2015, the Portuguese Post launched a new postal bank, Banco CTT. In December 2017, Banco Santander Totta absorbed the Portuguese subsidiary of Spanish Banco Popular.

The Portuguese banking industry has shown one of the most rapid consolidation profiles in retail banking networks in the whole of Europe. Relative to the number of branches open in 2009, only Spain has reduced its retail banking branch networks at a faster rate than Portugal among major European markets. There are now just 3,362 bank branches (2022) in Portugal for the entire industry.

Since the financial crisis of 2007-2008, a key issue in Portuguese banking has been to reduce banks' portfolios of non-performing loans (NPL). In 2022 the NPL ratio decreased to 3.0% (2021: 3.7%), still higher than the European average of 2.28%.

Portuguese banks have long been internationally orientated, but historically their focus was both on Brazil and on former colonies in Africa. More recently, Millennium bcp has adopted the strategy followed by banks in other small EU countries of expanding into new national markets (see below).

Foreign banks, including Banco Santander Totta (E), BBVA (E), Bankinter (E), CaixaBank (E), BankInter (E), Barclays (UK) and BNP Paribas Group (F) are active in the Portuguese banking sector.

The most significant foreign investment in Portugal is from Spanish banks. However, the relatively small size of the Portuguese banking sector has meant that foreign investors have not targeted local banks in the same way as domestic banks in many other European countries.

[\(See Table 1 - Main Portuguese Banks end-2022\)](#)

Caixa Geral de Depósitos (CGD), is state-owned with a market share of 23.2% by total bank assets. In 2022, CGD reported 521 branches serving 3.6 million customers in Portugal, or 35% of the population. The bank also claims 2.20 million digital customers, 65% of eligible customers. The CGD Group is present, either through Branches, Representative Offices, or direct equity interests in local financial institutions, in 25 countries embracing four continents. At the international level, the CGD group had 370 branches at the end of 2022. In order to reposition its international presence in geographies with a strong relationship with Portugal in 2021, it opened representative offices in South Africa and Luxembourg.

In Portugal, CGD ended 2022 with 486 branches and Espaços Caixa, 6 self-service branches, 24 corporate offices, and an additional two office extensions, three mobile units, and one Caixa BI branch, for a total of 522 presences. On an international level, the Spain and Luxembourg branches were closed while work continued on the disposal of the equity stake in Banco Comercial do Atlântico (Cape Verde) and BCG Brazil.

Millennium bcp, previously Banco Comercial Português, is the second-largest financial group and largest privately-owned bank. Merger discussions between Millennium bcp and Banco BPI

concluded without agreement in late 2007 (see Appendices). In 2017, Millennium bcp sold a stake in the bank for €1.3 billion to Chinese conglomerate Fosun (27.06%). Fosun and Angola's Sonangol Group (19.49%) became the largest shareholders of Millennium bcp Group. In 2021, Millennium bcp's shareholder structure was composed of individuals: 24.16% and institutional investors: 75.84%. By region, it was composed of Portuguese interests: 30.4%, Chinese interests: 30.0%, African interests: 19.6%, US and UK 10.8% and other regions: 9.2%.

Millennium bcp operates through Millennium bim, a universal bank that has been operating since 1995 in Mozambique, where it has more than 1.1 million active customers. The bank also has nine representation offices (one in the UK, three in Switzerland, two in Brazil, one in China, in Guangzhou, and one in South Africa), three commercial protocols (USA, France and Luxembourg).

Millennium also holds a prominent position in Africa through its banking operations in Mozambique (in Angola, Banco Millennium Angola - BMA merged with Banco Privado Atlântico-BPA and now the bank holds an equity accounted shareholding) and in Europe through its banking operations in Poland and Switzerland. Since 2010, the bank has operated in Macau through a full branch.

On December 27, 2019, the merger deed of Banco de Investimento Imobiliário, a wholly-owned subsidiary of Banco Comercial Português, by incorporation into the latter, was signed, completing the incorporation process of Banco de Investimento Imobiliário into Banco Comercial Português.

In August 2019, the merger of Bank Millennium with Euro Bank was approved and was completed in November 2020, with the bank now operating under a single brand, a single operating system, and a single legal entity.

In 2021, Millennium bcp concluded the sale of Banque Privée BCP to Union Bancaire Privée, UBP and formalised the sale to Fidelidade of shares representing 70% of the share capital of Seguradora Internacional de Mozambique, maintaining a stake of approximately 22%.

Banco Santander Totta, the Portuguese unit of Spanish Banco Santander Group, became the third-largest bank through acquiring various components of Champalimaud Group during 2000, of BANIF by end-2015, and of Banco Popular Portugal (2017).

In December 2015, Banco Santander Totta absorbed the former state-owned Banco Internacional do Funchal (BANIF), excluding Oitante, the Toxic Bank part of BANIF.

On 7 June 2017, Banco Santander announced the acquisition of 100% of the share capital of Banco Popular Español and its Portuguese subsidiaries for a symbolic €1. Following the acquisition in June 2017, Banco Santander Totta became Portugal's second largest private sector bank.

Banco Santander Totta reported 383 branches at end-2022. In addition to leading retail bank Santander Totta, Banco Santander is present in Portugal through Santander Consumer Finance (SCF), which extended its presence in the market during late 2005 through the acquisition of a majority stake in the auto finance specialist Interbanco from BCP.

Novo Banco (formerly Banco Espírito Santo), the fourth largest bank by total bank assets, had 292 branches, serving more than 1.5 million individual customers at end-2022.

ESFG and Crédit Agricole had been shareholders in BES, with a joint interest of 46.1% at end-2013. Crédit Agricole (F) had entirely written off the value of its 15% stake in BES, following the Portuguese lender's government rescue. In August 2014, Banco Espírito Santo (BES) became state-owned, after reporting €3.6 billion in losses. Novo Banco was created on 3 August 2014, when Banco de Portugal applied a resolution measure to BES.

As a transition bank, Novo Banco had a limited duration of two years, extendable for periods of a year according to RGICSF. The signing on 31 March 2017 by the Resolution Fund of the contractual documents for the sale of Novo Banco enabled the fulfilment of the term for the sale established on the commitments assumed by the Portuguese Republic with the European Commission. The de-risking process of the past legacy issues including the disposal of non-core assets was first launched immediately following the acquisition of 75% of Novo Banco by Nani Holdings in October 2017 and has been executed throughout this period to year-end 2021 in accordance with the agreed Restructuring Plans and commitments by the Republic of Portugal to the EC, State Aid Directorate General for Competition.

In October 2017, the state-owned Resolution Fund sold a majority stake of 75% in Novo Banco to investor Lone Star Funds (US), through Nani Holdings, and retained a 25% stake. Lone Star Funds provided a \$1 billion capital injection to the company on completion of this deal. As of 2022, the bank's share capital was comprised of 75% held by Lone Star Funds (through Nani Holdings), 19.31% by Fundo de Resolução and 5.69% Direcção-Geral do Tesouro e Finanças.

Banco BPI (Banco Português de Investimento), member of the CaixaBank Group (E) and the fifth largest Portuguese bank in 2022, had 325 branches and 1.9 million customers in Portugal.

In February 2017, the Spanish CaixaBank completed the takeover of Banco BPI, paying €644.52 million to raise its stake to 84.5% from 45%, which gives it control over Banco BPI. Effective Q3 2019, CaixaBank owned 100% of the shares in Banco BPI.

The BPI Group owns Banco de Fomento Angola (BFA) and a 30% stake in Banco Comercial e de Investimentos (BCI) in Mozambique. The sale of 2% of BFA's share capital to Unitel was completed in January 2017, with Banco BPI now holding 48.1% of BFA's capital and Unitel 51.9%. In December 2017, Banco BPI informed the market that its shareholding in BCI increased from 30% to 35.67% of the bank's share capital. As of 2022, BPI held minority interests in African banks (48.1% in BFA in Angola, and 35.7% in BCI in Mozambique).

EuroBIC (previously BancoBIC) - In November 2008, Banco Portugues de Negocios (BPN) was seized and became state-owned as it was severely damaged by the financial crisis. In March 2012, the Portuguese government sold BPN to Banco BIC from Angola. The European Commission earlier approved BPN's restructuring plan, including the sale to Banco BIC. Banco BIC, based in Luanda, offered to buy BPN for €40 million a fraction of its €180 million asking price. In 2021, BancoBIC reported 182 branches and 250,000 customers in Portugal.

BBVA from Spain operates in Portugal both as a retail bank and through the specialist finance company BBVA Finanziamento. In 2022, BBVA had 13 bank branches in Portugal serving around

45,000 customers.

bancoCTT - Launched in August 2015 following the authorization of Banco de Portugal, banco CTT adopted the Anglo-Saxon governance model and opened for business. bancoCTT offers its banking services through digital channels and in the 51 CTT Post Offices. In 2022, bancoCTT reported 212 branches serving 800,000 clients.

Barclays - Following the acquisition of Citibank's Portuguese credit card business in September 2009, Barclays was active in Portuguese retail banking, with Barclaycard issuing credit cards in the market. Barclays operated 151 branches in the country at that time.

In April 2016, Barclays Bank sold its retail banking business in Portugal to Bankinter (E). The Portuguese businesses transferred to Bankinter comprised 84 branches. Barclays continued to operate Investment Banking and multinational Corporate Banking in Portugal.

In April 2016, Barclays Bank sold its Barclaycard consumer payments business in Portugal and Spain to bancopopular-e, a Spanish online bank owned by Värde Partners (51%) and by Spanish Banco Popular (49%). In May 2016, bancopopular-e was rebranded as WiZink Bank.

WiZink Bank - In March 2018, Värde Partners acquired the remaining 49% stake in WiZink from Banco Popular (Grupo Banco Santander) and became the sole shareholder of WiZink. With more than 2 million customers, WiZink leads the revolving credit market in Spain and Portugal.

Oitante, the Toxic Bank part of Banif, is a private entity whose establishment was decided by the Financial Supervisory Authority, Banco de Portugal, in December 2015, along with its bylaws, under the terms and for the purposes of nº 5 article 145º S of the Credit Institutions and Financial Companies Legal Framework. Oitante's share capital is of €50,000, €1 per share, owned by the state through Resolution Fund, a public entity created to manage the banking sector restructuring processes.

Digital Challenger Banks

A number of digital challenger banks have entered Portugal, e.g. N26, Revolut and Wise (formerly TransferWise). They already have a clear Open Banking strategy in place.

In parallel, many Portuguese banks co-operate and partner with trusted digital payment providers and FinTechs to prepare for the Open Banking ecosystem, enrich their digital banking services, and to offer additional mobile banking app features.

Banco BNI Europa - Banco BNI Europa is a digital bank and alternative lending investor that has partnered with alternative lending platforms across Europe since 2016. These include leading Market place lending platforms in Germany, Belgium, and Finland.

In March 2018, Banco BNI Europa introduced an account opening process that encompasses video conferencing with digital certification for document exchange. Offered in partnership with certification entity DigitalSign (P), the account opening process requires users first to

enter their personal data and upload relevant documentation. The client then moves to the videoconference step where the identity certification will be performed by a remote operator, after which the certified signature of the documents will be executed.

In June 2018, Banco BNI Europa integrated with the Raisin savings marketplace. Via Banco BNI Europa's website Portuguese savers gained access to European savings products provided by Raisin and its partner banks across Europe. The integration of the service into Banco BNI Europa follows a number of other partnerships across Europe such as the successful launch in early 2018 with BinckBank (NL) and with N26 (D) in 2017. By 2019, the bank claimed to be the fastest-growing digital bank in Portugal.

Digital Banking

All Portuguese retail banks offer internet banking, SMS banking, and mobile banking apps to their clients. Services available include balance and transaction reporting and payment initiation. According to the Portuguese National Statistics Service, 57% of all Portuguese bank clients were e-banking users in 2022.

There is no bank-independent electronic banking standard in Portugal (although there are standardised formats for collections and payment); each bank offers its own proprietary system for corporate banking purposes.

Mobile banking apps offering immediate mobile money transfer services in Portugal include the BPI app, CGD app, Millennium app, Totta app, WiZink app, and PayPal.

Caixa Geral de Depósitos (CDG) - 2020 was a key year in terms of CGD's digitisation efforts to service its customers. There were 1.8 million digital customers in Portugal as of 2020, with more than 281 million logins to the Caixadirecta service, up 21% over 2019. In Q4 2020, an average 71% of CGD customers' operations were carried out on digital channels - 75% of which using its app. The number of accesses to the Caixadirecta service in 2020 was up 21% over 2019 to more than 281 million.

During 2022, continuous investment in digital transformation enabled Caixa Group to achieve the 2.9 million active digital customers mark, of which 2.2 million were in Portugal, with a total of 1.5 million mobile customers. This represented year-on-year growth of 8% and 18%, respectively. There were also 526,000 remote banking customers, up 3% from 2020. As of 2021, more than 94% of customers' transactions took place remotely.

The Caixadirecta app improved its focus in terms of customer experience, making it possible to activate cards, apply for credit cards, and authenticate online card purchases. Digital channels represented 94% of Caixa's operations in 2021. The same period witnessed 26 million logins to the Caixadirecta service (up 17% over 2020) and 7 million operations (up 19% year-on-year). In December 2022, Caixadirecta was accessed on more than 275 million occasions, with the app representing 85% of logins. Also, the number of operations, which totalled 84 million, registered a significant growth of 12% in comparison with the same period of the previous year.

Caixa's digital assistant was upgraded with a new interface and English language and was used in more than 4 million conversations with customers. The digital assistant, as a benchmark solution in the national banking sector, not only on account of its transactional component but also as an inclusive solution, registered an accumulated annual total of 3.6 million accesses. In comparison to the same period, the number of consultations using the assistant was up by 34% and the number of transactions by 93%.

Caixa reinforced the incentive to use all digital solutions, such as Caixadirecta Empresas (internet banking service for corporate customers), the digital confirmation solution "Flexcash", and the Caixa Pay App was launched in 2020 for corporate customers, facilitating the day-to-day life of merchants, allowing them to accept payments with debit and credit cards, via MB Way on their tablet or smartphone.

Millennium bcp - During 2020, Millennium said that with the enormous challenges and constraints imposed by the pandemic in 2020, digital channels assumed decisive roles both as catalysts for the bank's overall results and in its relationship with customers. The major dimensions of accelerating the digital business were the growth in the number of active digital customers, with a particular focus on mobile, the migration of main day-to-day transactions to its app, and the growth of digital sales and Open Banking.

In 2021, Millennium's customer base exceeded 6.1 million at the group level and 2.5 million in Portugal, with 20% growth in mobile customers, both in Portugal and at a consolidated level, representing 56% of the group's customers and 46% of customers in Portugal. In 2022, the bank reported 2.88 million (+7.16%) active retail clients and the share of digital active clients rose to 87.3% from 84% in 2021. The number of active digital users and active mobile banking users increased by 11% and 17% respectively to 2.51 million and 2.24 million people in 2022. Over the past five years, the number of customers active in digital channels has doubled. Throughout 2022, customers logged into the mobile app as many as 732.3 million times.

At the group level, mobile customers grew by 571,000 customers (+20% from 2020), surpassing 3.4 million customers, representing a penetration rate of 56% of the active customer base. There was an increase of 12% in digital customers, representing 69% of the active customer base. In Portugal, mobile customers grew 20% by 192,000, surpassing 1.1 million customers, representing 46% of the Portuguese active customer base. There was a 12% increase in the number of digital customers in Portugal, comprising 59% of the active customer base in Portugal.

In 2021, digital sales represented 38% of the bank's total sales, an increase of 6% from 2020. During 2021, Millennium bcp focused on app-based services, with 81% of digital card sales in 2021 coming through the app. In 2022, 52% of new company accounts were opened in digital channels and the share of digital channels in term deposit sales was as high as 96% in Q4 2022.

Access and use of the Millennium app were enhanced, with the registration process being simplified by obtaining access codes from the app, and the use of biometrics to validate operations.

In payments, the MB WAY user experience was improved, and the Money Order and Account Split were made available. With these changes and an integrated experience, bank customers who use the Millennium app exclusively to make MB Way transfers already represent 35% of the total.

Banco Santander Totta - In 2022, Santander invested heavily in innovative products and services, such as the various digital payment solutions it has launched, which allow customers to pay for their purchases by using any mobile device around the world. In addition to Apple Pay and to the FitBit and Garmin devices, Santander customers can now use Google Pay to make their payments. Another outstanding solution was the launch of a 100% online account, to facilitate the day-to-day management of small businesses. This transformation has contributed to the growth of digital customers which now exceeds 1.115 million people - 62% of active customers. Those using the mobile App have also been growing - almost 20% more than in the same period last year - now reaching 800,000. Regarding the web channel, the number of users remained stable compared to 2020 having closed 2021 with 448,000 users.

As of 2022, the digital penetration rate of the total customer base was 62%. There were 7 million digital transactions in 2021, with 4.4 million card transactions taking place through electronic platforms. Sales through digital channels reached 56% of the total sales amount in 2020. In 2022, more than 1 million documents were digitally signed (compared to 200,000 two years ago), new completely paperless support processes were created and more capabilities for remote management with customers have been launched.

Another focus has been the development of digital payment solutions to enable customers to pay for their purchases with any mobile device, through partnerships with Apple, Garmin, and Fitbit, to enable contactless payments with smartwatches, bracelets, and other devices.

A chatbot was also launched, interacting with customers through natural language, and interpreting and answering the most common questions, directing the customer to information about products and services on the public website.

Banco BPI - During 2020, BPI, which is wholly owned by CaixaBank, focused on the commercial banking business in Portugal, using its specialised distribution network and digital channels in an integrated manner. BPI distributes other products and services centrally sourced from CaixaBank Group, including debit and credit cards from CaixaBank Payments & Consumer, and acquiring and POS from Comercia Global Payments.

During 2022, BPI focused on improving the customer experience through omnichannel relationships, with the bank reporting 856,000 regular users of digital banking, of which 630,000 in the BPI app, which corresponded to increases of 11% and 17%, respectively, compared to 2021. In 2022, 32% of total sales of core products took place through digital channels.

The number of clients who regularly used digital channels increased by 11% from 2021. The mobile banking channel reported rapid growth, with approximately 85% of individual customers who actively use the digital channels opting for the BPI app. The number of regular users increased by approximately 17%, which is 93,000 more users than in 2021. 90% of customers have subscribed to digital channels.

More than 97% of transactions are already carried out through digital channels (home and mobile banking and ATMs). Interactions through the digital channels expanded, with the number of logins reaching an average of 16 million per month (+13% YoY).

Crédito Agrícola - In 2022, Crédito Agrícola's Portuguese customer base reached 1.53 million,

corresponding to a net growth of 95,000 customers from 2021. As a whole, total customer numbers reached 1.38 million, while the corporate customers reached 158,000 at the end of 2022. There were 617 branches in its network as of 2022.

In digital banking, Crédito Agrícola reported that the trend of growth of digital channels was already evident before the COVID-19 pandemic. However, in 2020, the pandemic led to an additional fast-tracking of digital uptake. As of 2022, the bank reported 832,000 digital customers (+9% from 2021), and 431,000 mobile customers (+23% from 2021). With 487 million digital transactions in 2021, this figure rose 13% in 2022 to 552 million, with mobile comprising 56% of digital transactions.

This expansion of the digital channels continued to occur in 2022, with accelerated growth of CA Mobile in terms of the number of customers, interactions, and transactions (both in number and value), over the CA Online channel which, nevertheless, continued to record notable levels of growth.

The app moey!, a 100% digital banking solution of Crédito Agrícola, was launched in the summer of 2019, with 2020 being the first complete year of activity. Throughout 2021, the implemented strategy led to an increased volume of accounts opened, and evolution at the transaction level. The focus in 2021 became more centred on the launch of functionalities and products to enable the increased profitability of the customer base. Throughout 2022, the third full year of activity of moey!, the implemented strategy led to the continuation of the increased volume of accounts opened (+16%), the maintenance of the strong alignment with the defined target group, which had already been achieved in 2021, as well as the continuation of a strong evolution in the volume of transactions, with 2022 showing the double of the number of transactions occurred in 2021.

Novo Banco - As of 2020, Novo Banco had 600,000 active digital clients, or 50% of the bank's total customer base, while 71% of customers made contact through its mobile channel. By 2022, the active digital clients penetration rate was 61.9% with 75% of individual clients' contacts with Novo Banco were made through the digital channels (Mobile: 65%, Online: 10%). Reflecting a reinforced focus on a "mobile digital first" strategy, mobile continues to be the main means of contact for individual clients, with annual interactions (as measured by the number of logins) growing by 24%. Digital sales comprised 41% of all sales in 2020. The novobanco app (launched at the end of 2020 and since then featuring constant improvements and novelties) had 436,100 active clients, a 11.7% increase compared to 2020. The novobanco online homebanking service had 278,100 active clients in 2021, a year-on-year reduction of 0.5% that was driven by the migration to mobile and shows the preference of active digital clients for the new app. The online homebanking service had 278,100 active clients in 2021, a year-on-year reduction of 5.7% that was driven by the migration to mobile, with the app being preferentially used for financial transactions.

During 2022, the retail banking unit had over 1.5 million customers as well as 55% of SMEs in Portugal. There were 725,000 clients in the digital channels (+11% vs 2021), while 36.3% of total sales were digital. The bank also claimed a 16.1% market share in POS acquiring.

The bank's Hey!Pay consumer finance joint venture with Credibom, allowed Novo Banco to enter the segment of POS credit, targeting an extensive base of SME and B2C companies.

Reflecting the strategy implemented, customer acquisition in the retail segment showed strong growth in 2022 by 80% YoY. The Cross-Segment Programme, which gives the employees of companies with which the Bank has protocols access to more favourable conditions, accounted for 22% of all individual clients onboarded in the year.

This strategy drove an increase in the number of active digital clients, to 61.9% of the total in December 2022 (the number of digital clients increased by 11% from 2021) as well as a 16% annual rise in the number of active mobile clients (48% of clients were mobile). In turn, this underpinned an annual increase of more than 74% in the number of product units sold through the digital channels (excluding deposits and investments).

About Open API Standards

In June 2017, The Berlin Group, the European payments interoperability coalition of banks and payment processors with membership comprising bank backed ACHs and industry bodies, announced it would push a single standard for API access to bank accounts (XS2A) compliant with the PSD2 regulation.

The Berlin Group says its NextGenPSD2 Initiative provides a harmonised API standard for accessing bank accounts. Built as an 'Access to Account Framework', The Berlin Group says the standard offers operational rules and implementation guidelines with detailed data definitions, message modelling and information flows based on RESTful API methodology.

As of the beginning of 2021, the Berlin Group NextGenPSD2 was implemented in all EU countries, in several non-EU countries in Europe and in countries outside Europe who are focused on maintaining reachability and compatibility with the European market. Around 80% of European banks and hundreds of third-party providers (TPPs) have implemented the Berlin Group NextGenPSD2 Framework. In 2021, the group was migrated to the Open Finance task force to explore use cases of Open Banking schemes and Open Finance schemes.

Among others, European Open API sets include Open Banking UK, Swiss Corporate API, and STET Open API (F, B). In addition, SIBS said it would develop the SIBS Open API set for the Portuguese banks.

PSD2 and the Open Banking Mandate

The adoption of the revised Payment Services Directive, PSD2, has set the stage for Open Banking in Europe, a European Open Banking Mandate with significant impact on the financial services industry. PSD2 challenges for banks and FinTechs include Open Banking, Open APIs, and the rollout of digital payment services and mobile apps.

PSD2 lowers the barriers for market entry to third-party service providers, FinTechs, and it opens up doors for innovative players to offer services that currently do not exist, e. g. account information services, third-party personal finance management, digital identity and KYC.

PSD2 is going to change the European payment and banking landscape and ultimately the position

and role of banks in the ecosystem. FinTechs drive the change with the banking industry seeking the right strategy.

Post-PSD2, the key question for the financial service industry will be how to grant authorized access for their FinTech partners to bank account information, for instance secure access to account balance, payment data, credit risk and others.

For banks, the impact of the PSD2 is that they are no longer the only ones that have access to the bank customer information. Bank customers will now decide who they want to grant access to their payment information. Alongside this initiative, with new services based on access to bank accounts (XS2A), banks may lose the direct connection to their customers. To maintain their position in the new PSD2 reality, banks will need to adapt their business and operational models.

By mid-2023, notable challenges for the Portuguese banking industry include:

- Allow FinTechs access to bank accounts (XS2A) by sharing their own set of Open APIs
- Open Banking strategy: card-less bank payment services in-app directly from the account
- Combined apps: payment services, account information, value-added convenience services
- Compete/partner with PISPs: strategy for IBAN-based payment services initiated by PISPs
- Compete/partner with AISPs: strategy for granting access to account information to AISPs
- Sign partner agreements with selected FinTechs using them as part of the bank's own services
- Bridging technologies enabling Open Banking payments in-store and online: NFC/QR/BLE
- Strategy option: being a digital banking hub consolidating other banks and FinTech partners
- Compliance with the General Data Protection Regulation, GDPR, and the PSD2, including RTS SCA

As of 2022, CGD's DABOX app had a 34% market share in Open Banking, according to data published by the SIBS API Market, with 23 entities integrated. This solution had 86,000 active users, 36% of whom were customers of other banks.

Millennium bcp announced that in Open Banking, the aggregation of accounts of Revolut, Wise, and seven other French banks was extended in 2020 and it became possible to carry out national and international SEPA transfers from aggregated accounts.

Within the scope of PSD2 and the opportunities generated by Open Banking, Banco Santander Totta was focused on allowing customers to use Santander channels as aggregators of information from other banks. It is now possible to view the account statement or initiate payment of accounts from other banks directly from the Santander channels.

In 2021, Banco Santander Totta reported further developments in terms of Open Banking, namely the expansion of entities that customers can aggregate through the bank's channels, which, in addition to the main national banks, which now includes the accounts of Revolut, Cetelem, and Universo. The bank now allows its customers to initiate transfers from other banks through our channels, in order to settle debts, they have with Santander.

With regard to corporate customers' transactions, the marketing of products that simplify their day-to-day management was promoted, such as the commercial promotion of dedicated IBANs product (a solution that facilitates the process of reconciling their bank charges), and the launch of payment for services by batch in XML format (a solution that allows clients to make payments in an aggregated way).

As of 2022, there were two account information service providers registered in Portugal, while there were 30 Open Banking bank and account providers, 52 bank APIs, and 23 API aggregators registered in Portugal.

According to a recent report by Salt Edge, which evaluates the progress towards interoperability with banks, Portugal has one of the highest availabilities of API solutions. The 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% of API requests were successful in Portugal which placed it second among European countries (the Czech Republic was first) and third including the UK.

PAYMENT SERVICES

PAYMENT SERVICES

In Portugal, the law on payment services adopted the EU payment services directive (PSD) and the EU interchange fee regulation (IFR). Portugal is also going to adopt the new PSD2 - effective from January 2018.

In 2023, the more than 300 different payment services offered in Europe can be grouped into:

- Card brands and card types
- E-Money and prepaid products by issued brand
- Account-based payment services by issued brand, e.g. IBAN-based SCT/SDD services
- Advanced payment services. e.g. wallets by issued brand
- Digital payment services, e.g. digital scheme wallets by issued brand

Card Brands and Card Types

All Portuguese retail banks issue MB debit cards, prepaid cards and credit cards with one of the Mastercard or VISA brands.

Multibanco (MB) is the domestic card scheme in Portugal. MB cards are co-badged Mastercard or VISA for international use. MB debit cards have either debit and deferred debit functions or delayed debit and credit functions on one card. All MB cards in Portugal are processed as debit cards according to the rules of the MB scheme - independent from the co-badged international brand.

Unibanco is the domestic credit card brand. Unibanco cards are co-badged VISA or Mastercard.

Portuguese card products like consumer cards, commercial cards and purchasing cards range from classic cards to gold cards and platinum cards. Additional card features (e.g. picture cards, bonus points, PIN selection at ATMs, cashback, card control by SMS notification and geo blocking) are used to attract cardholders. In addition, individual picture cards and collector cards are issued on demand.

The EMV migration of cards reached 88% at the end of 2012 and is de-facto complete. The cards total includes private label cards and prepaid cards that are not issued as chip cards, according to SIBS.

From July 2023, banks and other card issuers will no longer issue Maestro cards. Instead, they will need to issue Debit Mastercard. Maestro was launched in 1991, and it was the world's

first debit card that could be used via an online network. About 400 million Maestro cards are in circulation worldwide, mainly across Europe. However, Maestro is not enabled for the demands of e-commerce and cannot be used for online or in-app payments, hence the decision to phase it out in favour of Mastercard Debit products. VISA announced that Electron cards will be phased out globally in 2024. The features of the VISA Debit card have been modified to match the features of the VISA Electron card.

Debit cards issued are MB, Debit Mastercard, and VISA Debit cards. There are no V PAY cards in issue.

Credit Cards issued are cards branded VISA or Mastercard. There are no JCB cards, bank-issued American Express cards, and no Diners cards in issue.

Prepaid Cards - The Portuguese banks issue cards with a prepaid function branded VISA Debit or Debit Mastercard. Additionally, single-purpose prepaid cards are issued by businesses, universities, and phone companies.

Multi-Currency Prepaid Cards - In July 2014, e-money institution Prepaid Financial Services (PFS) and Unicambio, a Portuguese money exchange, launched the Unicambio multi-currency prepaid Mastercard card. It enables corporate clients and cardholders to hold multiple currencies in one card.

The prepaid card is available from Unicambio bureaus at airports and in major shopping malls in Portugal, Madeira Island, as well as online. An online platform allows the cardholder to buy and sell currency, locking in exchange rates just as the customer travels. Additionally, should the cardholders travel to multiple countries, they can transfer any of their currencies into the new chosen wallet by use of the smartphone app or online. A card can hold multiple balances of different currencies. Funds can be transferred to another Unicambio prepaid card.

In addition, Millennium bcp issues free meal cards in cooperation with its partner Sodexo Pass Portugal while Novo Banco issues luncheon cards with its partner Edenred.

Co-branded cards - In Portugal, there are some co-branded card products are in circulation. Co-branded cards are based on the international card brands Mastercard, VISA, American Express, Diners or Unibanco.

Contactless Cards and form-factors

All Portuguese retail banks issue now of contactless cards with PayPass or payWave function.

In 2010, Unicre, in conjunction with Mastercard, VISA, SIBS and other banking entities, took part in a pre-launch contactless pilot project and launched a contactless Unibanco Go On card.

In 2011, CGD was one of the first banks in Portugal to issue VISA Electron cards with payWave function and Maestro and Mastercard cards with PayPass function.

Predefined contactless limits - Contactless payments of purchase amounts below a predefined limit are without PIN or signature and without transaction receipt. In Portugal, the contactless limit without PIN/signature was €20 for cards with PayPass or payWave function.

In March 2020, in response to the COVID-19 pandemic, the contactless limit was raised to €50 to encourage more non-cash transactions.

According to the BdP, in 2022, contactless card transactions grew by 58.6% in volume from 2021, while contactless value rose by 65.7%. The average value per contactless transaction was €24.5 (€14.5 before the pandemic), and the share of contactless purchases in the total volume of card purchases amounted to 48.8% (8.2% before the pandemic and 24.5% in 2021). Contactless purchases played a more relevant role in retail trade (accounting for 60.6% of the total volume of card purchases) and in restaurants (22.1%).

SIBS MB is in partnership with European counterparts in the European Card Payment Cooperation (ECPC) consortium, which SIBS has been a part of since its foundation, with the objective of producing and disseminating the technical specifications for a new contactless and contactless chip card standard EMV Card Payment Application Contactless Extension (CPACE), of which SIBS MB holds the intellectual and industrial property. The MB payment system reported in 2021 that it had integrated the CPACE standard into its contactless technology, which is expected to be the future European contactless standard. The new contactless standard is now available to all MB issuers in Portugal.

As of 2021, the BdP reported that around 95% of the EFTPOS terminals in Portugal could take contactless payments from a domestic scheme, such as MB, and about 59% from an international scheme such as a VISA card or Apple Pay. 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 to do so. 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.

Despite the high penetration of contactless cards and terminals in Portugal, only 24% (23% based on value) were made with contactless with the remainder done by inserting the card in the terminal according to the CPACE survey for 2019. According to the BdP, that share has increased to more than 40% of transactions as of 2021. Portugal has achieved wide adoption of contactless terminals although it has lagged in issuing contactless cards. By 2021, more than 85% of debit cards in Portugal were contactless compared to just 22% in 2013.

In September 2022, Mastercard partnered with Portuguese rail operator Fertagus and payment service provider Finaro to bring Tap & Ride, the ability to pay for a rail ticket with contactless payment to Lisbon for the first time. The new initiative will enable passengers to use their contactless bank card to travel on trains, without needing to purchase a ticket. This service aims to create a more convenient experience for more than 90,000 passengers who use the suburban trains between Lisbon and the south bank every day.

Interchange Fee Arrangements

International and Intra European Non-EEA Interchange Fees are set by the members of the international card schemes to be applied in case of cross-border transactions or foreign cards

used in Portugal, respectively. The effective rates of Mastercard and VISA can be found on the respective Mastercard and VISA websites.

In Portugal, domestic Merchant Interchange Fee (DMIF) rates for Portuguese cards is defined by Mastercard and VISA, respectively. The interchange fee regulation 2015/751/EU applies for Portuguese card business.

The interchange fees for domestic card-based payment transactions on consumer cards are capped as follows:

- Credit card payments capped at 0.30%
- Debit card payments capped at 0.20%

From 9 June 2016, the cardholders' right for payment application selection at the point of sale became effective. Portuguese cardholders can now choose between the MB card brand and the co-badged card brand, respectively.

American Express - As a result of the EU regulation of interchange fees (IFR), American Express elected to exit all of its bank licensing arrangements in the European Union. This means that they have terminated all licenses with its existing EU partners, stopped issuing new cards and are in the final stages of the process of closing down all operations directly related to bank licensing. Over the course of 2019, American Express credit cards issued under independent operator agreements were rendered invalid in all countries of the European Union. Various banks that have up to now had exclusive licensing contracts with American Express have already responded accordingly and provided their clients with the opportunity to switch to other card brands.

From 2020, American Express Payments Europe is now the sole issuer and acquirer of American Express cards in Europe, including Portugal. However, American Express Payments Europe continues its local sales partner arrangements with local acquirers enabling the use of American Express cards at ATMs and POS terminals.

E-Money

In Portugal, the law on e-money services has adopted the e-money directive of the EU (EMD).

The Portuguese e-purse PMB was phased out by the end of 2005. There are local e-money schemes giving access to e-money accounts in the form of cards. From 2013, cards with e-money functions include prepaid luncheon/free meal cards that can only be used in food-related merchant outlets.

As at end-2022, there were four e-money institutions (EMIs) with a license granted by BdP in Portugal and 174 foreign EMIs with EU passporting offering their services in the country on a cross-border basis.

Prepaid Products - paysafecard (A) entered Portugal and launched its prepaid product,

paysafecard. In June 2018, Paysafe launched Paysafecash, a new online cash payment option for the sizeable number of online shoppers who still prefer to pay by cash. Paysafecash is live in 14 countries including Austria, Spain, Italy, Portugal, Hungary, the Netherlands, the UK and Canada.

Digital Account-to-Account Payment Services

In the Yearbooks, account-based payment services are classified as IBAN-based payment services in SCT/SDD format offered by banks or by independent payment initiation service providers (PISP).

Credit transfers are used for both high value corporate and low value retail payment transactions. They can be paper-based or automated. Companies commonly use standing order and variable standing orders to pay suppliers and employees.

On 1 February 2014, SEPA credit transfers replaced all previous credit transfer schemes in Portugal. All banks in Portugal participate in the SEPA Credit Transfer (SCT) scheme.

Direct debits are used for low value recurring payments such as utility bills. They usually carry no charge, provided that they are processed via an automated system. SEPA direct debits can be settled on a same-day or next-day basis via the SEPA component of Portugal's SDD subsystem.

On 1 February 2014, SDD replaced all previous direct debit schemes in Portugal. Legacy direct debit schemes had been processed via the SDD subsystem on a same day or next day basis until the 1 August 2014 deadline, or bilaterally between companies providing direct debit services and banks.

Instant Payments (SCT^{INST}) is the IBAN-based immediate payment scheme in Europe, officially launched in November 2017. It makes funds immediately available to the beneficiary - compliant with existing SCT infrastructure. The regulators will require all banks to offer Instant Payments from 2018.

Among others, the characteristics of SCT^{INST} include an initial maximum of €15,000 with the funds made available on the beneficiary's account in less than ten seconds, 24/7/365 real-time processing, and immediate refunds in the case that the SCT^{INST} payment was not successful. From July 2020, the maximum amount for instant payments will be €100,000.

Chaired by the ECB, in 2014 the Euro Retail Payments Board (ERPB) identified the need for a pan-European instant euro payment solution. In April 2016, EBA Clearing started the SCT^{INST} project with more than 40 large European banks involved. In November 2016, the European Payments Council (EPC) published the SCT^{INST} scheme and SCT^{INST} rule books version 1.0 while the ERPB provided the governance model. In November 2017, EBA Clearing completed the pan-European instant payments infrastructure, RT1.

Future participants in EBA Clearing instant payment infrastructure service will be able to use, in addition to SIANet, the Electronic Banking Internet Communication Standard (EBICS).

EBA Clearing will introduce EBICS for the exchange of transaction messages as an additional connectivity option from the start of the service in November 2017 and make it available in the test environment from June 2017.

In 2022, about 50% of all IBAN-based payments in France were processed intra-day, or even immediately, inside of the same bank group. Potential first use cases for SCT^{INST} in Portugal may include P2P, mobile banking apps, online payments, and B2B.

As of April 2023, 2,325 banks from 28 European countries had registered for the SCTINST scheme. This represents 61.5% of all SCT scheme participants.

From June 2018, SIBS launched its SIBS Instant Payments solution platform that allows immediate bank transfers in Portugal. From September 2018, SICOI (interbank clearing system), the payments system managed and regulated by Banco de Portugal which processes most day-to-day payment operations initiated by individuals and businesses in Portugal, now allows for instant payments processing.

In 2022, the second full year of activity by Portuguese participants in the TARGET Instant Payment Settlement (TIPS), the volume and value of instant transfers increased gradually. Portugal was the eleventh most active country in TIPS, with 7.5 million transactions sent and received by payment service providers, totalling €6.5 billion, i.e. ten times the volume and six times the value recorded in 2021. Such very marked growth reflects the impact of the measures outlined by the ECB Governing Council, which have been in place since December 2021, to ensure the pan-European reach of instant credit transfers.

In 2022 the Banco de Portugal launched the PAY project, aiming to redesign payment information reporting. The new reporting mechanism will go live in stages, by payment instrument, between May 2023 and July 2024. The ongoing regulatory developments will help shape payment services in the coming years. Of particular note is the proposal for a Regulation of the European Parliament and of the Council on instant credit transfers in the euro, which aims at making accessible, secure, and unhindered instant credit transfers available throughout the European Union (EU). Currently, only around 13% of all credit transfers in the euro in the EU are instant credit transfers (4.4% in Portugal), and there is a wide disparity in access and fees applied by payment service providers across different Member States. This proposal aims to remove obstacles to the widespread use of instant credit transfers and will bring multiple benefits to economic operators.

As in many European countries, bank transfers have been adopted for online payments, enabling consumers to pay direct from their bank account as an alternative service to payment cards.

Other payment initiation service providers (PISPs) offering online credit transfers in the country include Klarna's German-based SOFORT (D), Trustly (S), and IDEAL (NL).

In 2021, BdP reported 307 payment service providers licensed in Portugal. Authorised in another EEA member state, 287 cross-border payment institutions have provided notification of operating in Portugal under the EU passport system in 2022.

Advanced Payment Services

In the Yearbooks, advanced payment services are classified as online wallets, e-wallets, and/or mobile wallets with any type of payment service chosen by the wallet user to complete the payment.

In selected Portuguese online shops, the wallets PayPal, Skrill, Alipay and Amazon Pay are offered as payment means.

PayPal - PayPal is present in Portugal. As of end-2022, PayPal reported more than 435 million active customer accounts globally, up 2% from 426 million in 2021. During 2022, PayPal added approximately 8.6 million net new active accounts, ending the year with 435 million active consumer and merchant accounts. PayPal's total payment volume increased to \$1.36 trillion (up 9% from 2021) and customer engagement grew to an average of 51 transactions per active account, driving 12% growth in transactions per active account at the end of 2022.

During 2020, with consumers worldwide embracing digital wallet capabilities, the company launched several related services including QR Code Checkout, Buy Now Pay Later, Crypto purchasing and Xoom direct transfers to bank accounts and debit cards.

In June 2018, PayPal continued its shopping spree with a \$400 million cash deal to acquire e-commerce platform Hyperwallet. The acquisition followed deals to buy Venmo, Xoom, Sweden's iZettle (renamed Zettle) for \$2.2 billion and AI-based merchant marketing outfit Jetlore, as PayPal bids to extend its reach to all corners of the payments market.

In May 2022, PayPal Ventures invested in Modulr, an embedded payments platform for digital businesses, as part of a \$108 million Series C funding round led by General Atlantic, Blenheim Chalcot, Frog Capital, and Highland Europe. Modulr delivers payments infrastructure for over 200 top-tier customers, including Revolut, Wagestream, Sage and BrightPay, and processes an annualised transaction value of more than £100 billion.

In 2023, PayPal is exploring the sale of Xoom, its international money transfer subsidiary, in a bid to cut costs and focus on high-growth business areas. Also, Stax Payments - an all-in-one payment provider for businesses - announced its partnership with PayPal in July 2023. This partnership will allow PayPal's users to easily make payments with more than 20,000 merchants of Stax through a fast checkout process as well as new payment options such as Buy-now-pay-later solutions.

In 2023, PayPal launched its own US dollar-denominated stablecoin, PayPal USD (PYUSD), which is fully backed by US dollar deposits, short-term US treasuries, and similar cash equivalents and designed for digital payments and Web3. Eligible US PayPal customers who purchase PayPal USD will be able to transfer the token to external wallets, send person-to-person payments, fund purchases at checkouts supported by PayPal, and convert cryptocurrency holdings to and from PayPal USD.

Alipay - In December 2016, Ant-Financial owned Alipay said that 930,000 European merchants would soon accept Alipay mobile payments in online shops and at POS outlets. In December

2016, Alipay partnered with BBVA (E). In May 2017, the bank integrated the QR-code based payment service Alipay into the BBVA mobile payment service app, Smartpay. Stores in Spain and Portugal already using the service simply need to update the Smartpay app to be able to accept payments with Alipay.

In June 2019, Portugal's Pagaqui was one of six European mobile wallets including Austria's Bluecode, Finland's ePassi and Pivo, Oslo-based Vipps, and Spain's Momo to announce that they would modify their systems to enable acceptance of AliPay transactions. The wallets are working with the Chinese payments provider towards rolling out a QR code format provided by Alipay, so that users of any wallet will be able to make mobile payments at merchants across Europe that already accept payments for the other wallets. For Alipay users, they will also be able to pay at merchants who have already adopted the same QR code format. The collaboration will bring together over 5 million users in Europe and over 190,000 merchants, according to a joint statement by the companies. ePassi and Bluecode will offer technical services to the participating wallets to simplify the integration process among them.

Amazon Pay - In 2016, Amazon (US) launched its checkout payment service, Amazon Pay, enabling customers to pay for goods and services in participating third-party merchant websites. All active Amazon account holders can use Amazon login and password at the checkout. More than 50 million customers have used Amazon Pay to make purchases globally, with more than half of these coming from Amazon Prime Members. As of mid-2022, Amazon Pay is not supported by any Portuguese bank.

Digital Payment Services

In the Yearbooks, digital payment services are classified as card-based payment services using EMV tokenisation security on the internet combined with HCE NFC technology in the case of contactless payments at POS terminals.

MB WAY, the mobile payment app developed by SIBS, enables payment service functions for the mobile banking apps of 29 participating banks in Portugal: A Banca, Activo Bank, Atlantico, BBVA, CTT, Best Bank, Bankinter, BIG, BPI, Caixa Agrícola Bombarral, Crédito Agrícola de Mafra, Caixa Agrícola de Torres Vedras, Caixa de Crédito de Leiria, Caixa Geral de Depósitos, Cofidis, CEMAH, Credibom, Crédito Agrícola, Deutsche Bank, Eurobic, Millenium, Montepio, Novo Banco, Novo Banco dos Açores, Oney, Santander, Unicre, Box and Wizink. With MB WAY, Portuguese cardholders can connect their cards with their mobile number in order to make card-less immediate bank transfers. In addition, cardholders can use the MB WAY app to generate virtual MB NET cards allowing for online purchases on any website that accepts payments by American Express, Mastercard, or VISA.

With the MB NET security solution integrated into MB WAY app, smartphones and tablets can be used to make purchases based on a telephone number or email account or make immediate bank online bank transfers. MB WAY provides for e-commerce, m-commerce, and TV-commerce operations.

In 2019, SIBS reported 400,00 MB NET cards registered with the MB WAY app, 121,000 purchases with a value of €2.4 million, and 90,000 bank transfers with a value of €8 million. By the end of 2020, MB WAY reported more than 3 million users, (2019: 2.1 million). MB WAY stated that both in-store and online purchases had tripled in growth from 2019, with mobile phones making an increasing number of transactions. The number of purchases with MB WAY - with NFC, QR Code,

online with mobile number, or MB NET - has also grown exponentially (mainly purchases with QR Code and NFC that have had an average growth of 25% per month). In 2019, SIBS enabled the interoperability of MB WAY with other mobile payment systems for international usage.

By 2021, MB WAY allowed more than 3.8 million users (+22% from 2020) to make physical and online purchases, transfers, and withdrawals, among other operations using mobile phones, with more than 227 million total transactions (+95% from 2020). The growth in online purchases contributed to this increase, which increased by x2 compared to 2020, and purchases at physical terminals, which grew by x3 the level of 2020. In 2022, MB Way had more than 4 million users, including 3.5 million active users who make 9 million purchases each month. It was also reported that 94% of MB WAY users always pay with MB WAY.

As of mid-2022, the Click to Pay online payment checkout service was available, replacing the previous MasterPass and VISA Checkout services respectively. Click to Pay is a joint service between Mastercard, VISA, Discover, and American Express, enabling consumers to make secure one-click payments without having to enter card details or passwords online.

Contactless payments on cards using Apple Pay, Samsung Pay, or Google Pay made by foreign users at contactless POS terminals in Portugal are processed as contactless card payments.

Global contactless transaction values will reach \$10 trillion by 2027, up from \$4.6 trillion in 2022, with contactless mobile and wearable payments expected to grow by 221% and contactless card payments by 119% over the same period.

Contactless ticketing spend will increase by more than 440% globally between 2022 and 2027, with growing prominence and support for OEM pay solutions, such as Apple Pay, Google Pay and Samsung Pay being a key enabler for mobile NFC ticketing across many markets.

Overall growth in contactless transaction values will be catalysed by growing mobile payments adoption, with 99% of all smartphones capable of making contactless payments by 2027, up from 94% today, and average transaction values for Apple Pay reaching \$28.20 and \$33.40 for Google Pay.

Apple Pay has become one of the world's most used digital payment methods. Its user base increased from 521.4 million to 535.8 million in 2022.

According to Apple's Q2 last 2021, they saw a record of transactions with more than 1.8 billion processed during the quarter, up 40% year-over-year. This payment method is also available in over 90% of the US and 60% of stores globally.

Around 51% of global iPhone users have enabled Apple Pay in 2022. There are 10 million Apple Pay-friendly contactless payment terminals worldwide.

The transactions made using Apple Pay are mostly in-store purchases, online transactions, and peer-to-peer payments. It is trendy for contactless payments, especially during the COVID-19 pandemic.

There were about 38 million Apple Pay users in the United States as Apple Pay has gained popularity since its launch in 2014, accounting for 43.2% of mobile payment users. These numbers expect to increase and grow to 101.2 million this 2023.

Putting it all together, Apple Pay is increasingly becoming an effective customer acquisition and retention feature for Apple. In June 2022, Apple Pay added Apple Pay Later, its own buy-now-pay-later service, allowing users to split purchases into four equal instalments with no interest or fees. Initially launched in the US, the service is expected to roll out to other countries during 2023. In 2023, Apple launched its Card savings account from Goldman Sachs with a 4.15% annual percentage yield. Apple Wallet users can set up and manage a savings account directly from Apple Card in Wallet, with no fees, no minimum deposits, and no minimum balance requirements.

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In November 2023, Apple launches tap to Pay on iPhone in France. This new feature will enable millions of merchants, from small businesses to large retailers, to accept payments seamlessly and securely from contactless bank cards, Apple Pay and others digital wallets using just their iPhone and a partner's iOS app - no additional hardware or payment terminal required. The BPCE Group (Banques Populaires, Caisses d'Épargne and Payplug) and the companies Adyen, myPOS, Revolut, SumUp, Viva Wallet and Worldline now offer Tap to Pay on iPhone to their French professional customers, and they will soon be joined by BNP Paribas, Crédit Coopératif, Market Pay, Stancer and Stripe.

Apple Pay is available in Portugal through 45 banks and payment providers as of mid-2023.

Google Pay has 150 million users across 42 global markets.

In January 2022, it was reported that the company was planning to transform Google Pay into a "comprehensive digital wallet", following the app's reported slow growth and the shutdown of Plex. In April, it was reported that Google was planning to revive the "Google Wallet" branding in a new app or interface and integrated it with Google Pay. Google officially announced Google Wallet on May 11, 2022, at the 2022 Google I/O keynote. The app began rolling out on Android smartphones on July 18, replacing the 2018 app and co-existing with the 2020 Google Pay app in the US. While the app name itself was changed from Google Pay to Google Wallet, the service name of actually paying for things online or in-store remains as "Google Pay."

In the US, Google Pay has over 25.2 million users. Also, Google Pay is used on nearly 800,000 websites as a secure payment gateway. Roughly 20% of all mobile purchases are made using this digital payment processor.

Google Pay is available through 46 banks and payment providers in Portugal as of mid-2023.

Samsung Pay is available in 29 countries worldwide and has an estimated 140 million users. Samsung Pay works with Galaxy phones, including the latest Galaxy S22. Samsung claims that

its system will work with almost all point-of-sale systems: NFC, magnetic stripe, and EMV (Europay, Mastercard, and VISA) terminals for chip-based cards. In June 2022, Samsung Pay announced the launch of Samsung Wallet, enabling users to organise payment, loyalty, and gift cards into one app. Samsung Pay is not yet available in Portugal.

Overview of Cashless Payments

The Portuguese financial system set up the Payment Digitisation Programme (PRODIGI) in 2006 in order to foster automatic payments. Its main purpose was to place Portugal within three years among the European countries that make least use of less efficient means of payment. For decades, Portugal has one of the most efficient payment systems in Europe.

(See Chart - Overview of Cashless Payments 2022)

According to ECB and SIBS, Portugal is the euro zone country with the highest use of cards in relation to other cashless means of payment. In 2022, cards accounted for 69.50% of cashless payments, compared with 55.85% in the EU, while direct debits accounted for 7.51%.

Credit transfers (10.26%) are the dominating cashless payment instrument in terms of value (85.93%) reflecting higher values per transaction. As at end-2021, SEPA credit transfers (SCT) accounted for 97.07% of all credit transfers in Portugal, including cross-border credit transfers.

Cheque use remains significant (0.43%), though particularly since the launch of the direct debit system in 2001, the use of cheques has declined - in the past year, they have declined by 44.65% alone. However, cheques remain an important cashless payment instrument used for both retail and commercial payments.

In 2022, there was a high level of 334.2 cash-less payments per capita, up 28.57% from 2021. They were composed of 232.2 card payments per capita, 34.3 credit transfers per capita, 25.1 direct debits per capita and 1.4 cheque payments per capita.

[\(See Table 2 - Cashless Payment Transactions in Portugal\)](#)

Exchange Rates

Portugal joined the euro system and adopted the euro as its currency on 1 January 1999. The exchange rate of the Portuguese escudo (PTE) against the euro was irrevocably fixed at 200.482 PTE per €1.00.

MARKET INFRASTRUCTURE

MARKET INFRASTRUCTURE

Two interbank organisations are at the centre of the Portuguese card payment system - Sociedade Interbancária de Serviços SA (SIBS) in the debit card/ATM/POS sector and Cartão de Crédito Internacional SA (Unicre) in the credit card sector.

In October 2020 the Portuguese banking community was successfully connected to TIPS, the service provided by the Eurosystem for pan-European instant transfers. As of this date, pan-European instant transfers could be made with the same ease as domestic instant transfers.

In November 2020, the BdP published the National Strategy for Retail Payments, 2022 Horizon, prepared under the aegis of the Payment Systems Forum. The Strategy is based on four development pillars:

Pillar I - to promote a better-informed society

Pillar II - to enhance the benefits of digital transformation

Pillar III - to contribute to a regulatory framework that fosters innovation and efficiency

Pillar IV - to promote the adoption of more secure payment solutions.

The actions included in each of the four pillars of the Strategy were expected to be carried out by the end of 2022. The following stand out for their potential to transform the Portuguese payments market: (i) to promote greater coverage of the network of contactless POS terminals and payment cards; (ii) to foster the widespread use of instant transfers, not only in remote payments, but also at POS; (iii) to promote electronic solutions that speed up payments to the general government; (iv) to identify and propose the revision of legislative acts and other regulation that impose/favour the use of paper-based payment instruments, in particular cheques; finally, (v) to assess the feasibility of making a legislative amendment requiring firms to accept, together with cash, at least one electronic payment instrument.

At the end of 2021, a little over a year since its publication, 18 of the Strategy's 42 initiatives (43%) had already been completed, another 18 were under way, and only six were scheduled to begin in 2022. By the end of 2022, all 42 initiatives of this strategy were completed under its four pillars.

According to the BdP, In 2022 the Portuguese made 3.7 billion retail payments, amounting to €655.5 billion. In line with economic growth, payments in the Portuguese retail payment system - the interbank clearing system (SICOI) - increased by 16.2% in value and 20.8% in volume compared to 2021. In 2022, 10.2 million retail payments were processed per day, on average, to the amount of €1.8 billion. Developments in the use of the payment instruments processed in this system were mixed, consolidating the trends already observed in previous years.

The preference for digital payment instruments increased, to the detriment of paper-based

payment instruments. Domestic consumers continued to prefer electronic payment instruments (payment cards, direct debits, credit transfers, and instant credit transfers). These instruments were used in 99.7% of non-cash retail payments, i.e. 0.2 percentage points more than in 2021. The use of all electronic payment instruments went up both in volume and amount in 2022. Instant credit transfers grew by 34.3% and 54.4% respectively, despite continuing to represent a minor share in SICOI's total (0.3% in volume and 2.1% in value). In 2022, payments with cheques decreased by 15.1% in volume but grew in value for the first time since 2014 (6.2%).

The recovery in economic activity also had an impact on TARGET2. In 2022 the Portuguese component of this system, TARGET2-PT, processed around 2.0 million transactions (+13.0% more than in 2021), totalling €10.6 trillion - a record-high that is six times higher than in 2021. This reflected the rise in the ECB's official interest rates, which led to large growth in deposit facility operations.

During the year, two countries (Belgium and Slovakia) joined TIPS, which now operates in 13 markets. In terms of volume, Portugal was the 11th most active country in TIPS. - payment service providers from the Portuguese community sent and received 7.5 million transactions worth €6.5 billion, i.e. ten times the volume and six times the value recorded in 2021. Such very marked growth reflects the impact of the measures outlined by the ECB Governing Council, which have been in place since December 2021, to ensure the pan-European reach of instant credit transfers.

The Banco de Portugal continued to prepare the Portuguese community for the implementation of the TARGET2 with T2S consolidation and the TARGET Services evolution project. The project was scheduled to go live in November 2022, but this was postponed to March 2023. The consolidation of TARGET2 with T2S represents the largest transformation in infrastructures for settling real-time gross payments in euro since the launch of TARGET in 1999, which coincided with the implementation of the single currency.

SIBS

Set up in 1983, Sociedade Interbancária de Serviços SA (SIBS) represents nearly all retail banks and credit institutions in Portugal. It oversees the national Multibanco ATM and EFTPOS networks (Multibanco). It is also the Portuguese automated clearing house for cheques, direct credits, drafts and real time gross settlement. The national ATM network was implemented in 1985 and the POS network followed in 1987.

Since April 2011, SIBS SGPS is the Groups holding company, responsible for the subsidiaries' management:

- SIBS FORWARD PAYMENT SOLUTIONS (FPS) develop processing activities and payment solutions
- SIBS CARTÕES provides card personalisation services
- SIBS PAGAMENTOS manages the MULTIBANCO acquiring and MB SPOT services

- SIBS PROCESSOS manages card business process outsourcing solutions
- SIBS INTERNATIONAL (WPS) that promotes and implements the group services in international markets.
- SIBS GEST - main goal is to manage the Group's shared services and real estate
- PAYWATCH - focuses its activity on fraud detection and prevention services regarding banking cards.

At the end of 2022, the SIBS group had 21 bank shareholders and had a multi-geographical presence, with three major operations in Europe: Portugal, Poland, with a presence in transaction processing since 2008 and a direct acquiring operation since 2018, and Romania since the end of 2020, as a provider of card processing and personalisation services to banks and merchants.

SIBS can offer the following processing services: Issuing, Acquiring, Gateway and Switching. In 2021, SIBS reported 7.5 billion transactions (up 16.6% from 2020) processed. For more details on cards, ATMs and POS terminals see Table 7 and Table 9.

In 2012, SIBS and the Portuguese banks set up a task force for defining the technical and operational model for the implementation of the mobile NFC payments solution.

In July 2013, SIBS selected Monex as its partner for dynamic currency conversion (DCC) services in Europe and beyond. The new SIBS partnership with Monex allows international cardholders to withdraw funds at Portuguese ATMs while conveniently being charged in the home currency of the card.

From 2013, SIBS FPS supported the issuance and processing of contactless cards. In addition, SIBS FPS offered tokenisation security services. Through MB NET, SIBS pioneered the replacement of card credentials disclosure by a token or virtual card. With its MB WAY app, SIBS increased the relevance of this platform, extending the type of managed tokens to mobile numbers, email addresses, and card-less cash withdrawals at MB AMs.

In September 2019, SIBS announced that it had created Europe's most comprehensive open API network, consistent with the requirements of the PSD2 directive. Uniquely among European countries, SIBS has access to up to 95% of Portuguese retail bank accounts, making it an attractive target partner for FinTechs and non-financial firms seeking to create new services for Portuguese consumers.

In October 2020, SIBS announced the launch of cross-border instant payments. The SIBS platform, launched in 2018 to ensure instant payments processing at national level, is now also providing these operations between European financial institutions.

In 2020, with the acquisition of Romcard/Supercard in Romania, SIBS consolidated its position in Central and Eastern Europe. In Africa, SIBS solutions process more than 770,000 terminals

with 1.2 billion transactions per year, and more than 540 million app users, corresponding to more than 170 million transactions.

The number of cards managed by SIBS rose to around 33 million, resulting from the integration of operations in Romania, representing growth of 9 million cards and growth of over 1 million cards in Portugal.

In 2021, SIBS was chosen by the Central Bank of São Tomé e Príncipe and SPAUT, to ensure the development and creation of the new platform of the São Tomé e Príncipe payment system, thus guaranteeing new payment services and the international interoperability of payments in the country. In Romania, SIBS launched SoftPOS, which at the end of 2021 had more than four member institutions and more than 4,000 merchants.

PAYWATCH - In 2008, SIBS (60%) set up PAYWATCH in partnership with Unicre (40%) to provide integrated fraud prevention, detection and investigation services to issuer banks and acquirers. The company began its Fraud Watch operations in January 2009. In 2013, SIBS acquired the shares of Unicre and became 100% owner of PAYWATCH. The PAYWATCH services use an extensive set of rules and parameters to generate alerts whenever there is a potential fraud. SIDEF (Fraud Detection Interbanking System) supports the PAYWATCH services.

SIBS and Via Verde - SIBS, the Portuguese interbank processors, owns 20% of Sociedade Via Verde, with 60% owned by Brisa, Portugal's largest motorway operator, and 20% by Ascendi, the other large motorway operator in Portugal. The Via Verde Portugal (VVP) road toll scheme allows motorists to pay motorway tolls without stopping at the tollbooth with the appropriate payment debited from the user's bank account using RFID technology.

Via Verde is an automatic fee collection system for services provided using contactless Via Verde Tags, ensuring greater speed and convenience of payment at more than 3,000 km of highways, 109 gas stations (GALP) and 140 car parks. For its corporate segment, Via Verde serves 300,000 member companies.

In 2020, there were 379.0 million Via Verde transactions managed by SIBS (2019: 471.0, 2018: 439.0, 2017: 406.0, 2016: 349.6, 2015: 316, 2014: 292, 2013: 279, 2012: 252, 2011: 236 million; 2010: 193; 2009: 189 million) reflecting that Via Verde doubled the number of customers from 1.25 million to 3.4 million between 2001 and 2013.

Via Verde accounted for 95% of what SIBS calls its low-value payments (Via Verde, tolls with card, car parks and public phones).

Enhancements to the Via Verde service were introduced in 2008. A mechanism was implemented that allows payment refunds by issuers. At the end of the year, Via Verde added new acceptance channels, with the service becoming available at car wash stations and drive-in restaurants. In partnership with McDonald's and Via Verde, Millennium bcp launched in 2009 a pilot project involving payment through the Via Verde identifiers at two 'Drive-Thru' restaurants.

In 2018, Via Verde launched a series of mobile apps for both corporate and individual customers, available for Android and Apple phones. Via Verde's services were also extended to

the streets of Lisbon in 2019.

In 2021, SIBS sold its stake in Via Verde Portugal, becoming its technological partner with a focus on generating new innovative mobility services for the benefit of almost three million Via Verde customers.

In December 2023, MB WAY established a partnership with BANCOPAY and BIZUM for interoperability. This agreement aims to enable their users to make simple, convenient, and safe instant payments using their mobile phones across the three countries.

SIBS International - Like other payment processors in Europe, SIBS has expanded internationally. SIBS has been selected by the European Payments Council to develop the e-mandates standard for SEPA direct debits and co-operates closely with EMIS in Angola. SIBS's Multibanco scheme was a founder and had been shareholder in the Euro Alliance of Payment Schemes (EAPS) until 2012.

SIBS claimed to be a global company with on-going processing operations in the following countries:

- Portugal: with a transversal role throughout the Portuguese payment system
- Poland: ATM outsourcing
- Romania: POS outsourcing
- Malta: cards & ATM processing
- as well as in Angola, Mozambique and Nigeria (a broad partnership with the local interbank processors)
- and SWIFT wire transfers originating from clients based in such diverse overseas locations as New York, Panama, and Southeast China.

Millennium bcp has selected SIBS to manage its POS network in Romania and carry out SEPA transfers from Greece. Additionally, CGD has selected SIBS to personalise cards for its operation in Spain. In 2008, SIBS undertook the management of an ATM network in Poland. At the beginning of July 2012, SIBS, in partnership with Bank Millennium bcp and Makro Cash & Carry, launched a POS service in Poland. The service is available for all Makro Cash & Carry stores across the country.

In June 2018, SIBS acquired a 55% stake in a Polish company specialised in card acquiring for merchants, PayTel, for around €8 million (PLN 34 million). SIBS has been present in Poland since 2008, providing ATM network management services, terminal approval, transaction processing, switching, prevention and fraud detection, now expanding to acquiring services. Founded in 2003, PayTel, based in Warsaw, is an acquiring company that provides integrated payment acceptance, including processing services, POS terminal support, network management,

and customer service centres. In mid-2020, PayTel managed over 50,000 EFTPOS terminals and more than 10 million payment transactions per month.

In October 2020, SIBS strengthened its international footprint with the acquisition of the Romcard/ Supercard company, which was previously owned by the now-defunct Wirecard. With a wide range of services and products, including digital and e-commerce solutions for merchants, personalisation of bank cards and loyalty programs, the company serves all major Banks and Retailers with operations in Romania, and in other markets, such as Moldova, Serbia, Hungary, Kosovo, Montenegro, Macedonia and Lithuania.

Redunicre (formerly Unicre)

Historically the monopoly issuer and acquirer of international-branded cards in Portugal (see Appendix for history), Cartão de Crédito Internacional (Unicre) remains a major acquirer in the Portuguese market and continues to issue credit cards under the Unibanco brand (see 'Card Issuers' below). Unchanged on 2011, Unicre is owned by 12 bank shareholders, with the biggest four holding a combined 91.53% - Millennium BCP 31.16%, Banco Santander Totta 21.86%, Banco BPI 21.01% and Novo Banco 17.50%. Foreign bank shareholders include BBVA, Banco do Brasil and WiZink Bank.

Unicre acquires under the Redunicre brand. In 2022, the value of Unicre-acquired transactions was €27.0 billion, with the number of transactions remaining stable at to 600 million (same as in 2021). These figures compare with 539 million transactions in 2019 and a total transaction value of €20 billion in 2019. The ATV per transaction has continuously fallen to €40 in 2021 from €43.97 in 2007 due to higher use of cards for lower purchase amounts. By end-2020, the number of merchant establishments subscribing to the Redunicre network was 90,000, and the number of POS terminals was 100,000, of which 99,000 were recorded as contactless-enabled in 2021.

The decline of acquired transactions in 2016 compared with 2015 is a result of payment selection choices of cardholders at POS terminals, i.e. Mastercard/VISA brands instead of Unicre brand. On the other hand, the increase in tourism resulted in a higher number of payments on international cards.

In 2020, Unicre changed its brand name to Redunicre.

[\(See Table 3 - Redunicre Acceptance Network\)](#)

Unicre MSC Rates - The national competition authority has investigated Unicre following complaints by retailers over charges. In April 2006 reference merchant service charge (MSC) rates were readjusted (with the exception of petrol stations), with a reduction in the highest MSC rates from 1.95% to 1.80% for debit cards and 3.95% to 2.5% for credit cards. In October 2006, MSC rates applied in the fuel distribution sector were adjusted. In April 2007, there were further adjustments to the top MSC rates (with the exception of service stations), from 1.80% to 1.60% for debit cards, and 2.50% to 2.25% for credit cards.

Overall, the average MSC rate of Unicre has fallen from 2.15% in 2002 to 1.56% in 2005 and

1.11% in 2008. Since 2009, Unicre has reported no subsequent updates on its MSC data. The EC Interchange Fee Regulation (IFR) has led to reduced MSC rates for payments with Unicre consumer cards, since 9th December 2015.

Card Issuers - Overview

Portuguese banks issue contactless cards, credit cards, charge cards, debit cards and prepaid cards in combination with bank accounts. Addressing the specific needs of personal banking and business banking, the card portfolio is composed of consumer cards, business cards and corporate cards.

Dedicated card products are offered for the individual client segments: families, millennials, students, affluent clients, small business clients, corporate clients and even basic account clients. The credit cards offered range from classic cards to gold cards and platinum cards.

Most Portuguese retail banks issue Multibanco cards co-badged Maestro, Electron, VISA or Mastercard for international use.

From 2020, American Express Payments Europe will be the sole issuer and acquirer of American Express cards in Europe, including Belgium where American Express cards are issued through AlphaCard, (owner: American Express). However, American Express Payments Europe will continue its local sales partner arrangements with local acquirers enabling the use of American Express cards at ATMs and POS terminals.

As a result of this decision, American Express announced that its issuing relationships with Novo Banco and Millennium bpc would be terminated effective January 2019.

Leading card issuers are Caixa Geral de Depósitos (CGD), Millennium bcp, Novo Banco, Banco BPI and Banco Santander Totta. Other issuers include CA Crédito Agrícola (CCCAM), CEMG Montepio, Unicre (Unibanco credit cards) and many others.

In December 2018, Millennium bcp became the first bank in Europe to issue UnionPay credit and debit cards to customers, commencing January 2019. The plan is for Millennium to also roll out UnionPay's QuickPass scheme for online payments. Table 4 illustrates the card brands accepted by the leading Portuguese card issuers as of mid-2023.

[\(See Table 4 - Leading Card Issuers in Portugal\)](#)

Outlook - By mid-2023, Portuguese card issuers face the following notable challenges:

- Launch of Debit Mastercard cards and VISA Debit cards replacing Maestro cards and V PAY cards
- New card features such as variable recurring payments (VRP) and buy-now pay-later (BNPL)

- Rollout of online/mobile bank payment services combined with mobile apps and FinTech partners
- Continued consolidation of card portfolios and card products following the IFR regulation
- Implementation of 3D-Secure 2.3, the launch of digital wallets, in-app payments, in-store payments
- Strong Customer Authentication (RTS SCA), risk-based authentication (RBA), biometric authentication
- Competition from card-less payment service providers: PISPs, AISPs, FinTechs
- Tokenisation security combined with HCE NFC and card credentials stored-on-file
- Impact of PSD2 and its Open Banking mandate on secure access to card accounts
- Compliance with the General Data Protection Regulation, GDPR and the PSD2, including RTS SCA

Card Processors and PSPs

In Europe, the payment processing industry is composed of card processors, ATM/POS network hub processors, e-/m-payment service processors (PSPs), and specialized processors (e.g. CSM processors, TSM services).

In Portugal, card issuer processing services range from technical issuer processing, including card printing, to full cardholder processing services. They include all types of cards and card technologies allowing for card use in multiple channels (i.e. at ATMs, POS terminals, on the internet and in-store mobile payments in the future).

Acquirer processing services in the country range from technical acquirer processing, including POS terminal services, to full merchant processing services. Usually, ATM/POS network processing is part of acquirer processing while payments on the internet are routed by specialized e-/m-payment service processors (PSPs) to the card acquirers and independent payment service providers (e.g. PayPal), respectively.

Leading card processor in Portugal is SIBS FPS. It is the network processor of Unicre, but Unicre operates its international gateways in-house.

Some of the major Portuguese banks use their own bank IT solutions for issuer processing, or they use the processing services of Fiserv (formerly First Data Europe) or Spanish processor Redsys.

Online Payment Service Processors (PSPs)

Online payment service processors (PSPs) are specialised technical processors for all kind of secure online payments and mobile payments. Some of them also offer virtual PSP platform services (VPSP) for bank acquirers who want to take advantage of a kind of 'internet network processor'.

Online shops of merchants are directly connected by an API interface or a hosted payment page either to the internet payment gateway of a bank acquirer, or they are connected to multi-acquirers through a PSP.

PSPs usually partner with more than one card acquirer and payment initiation service providers. Core services offered by PSPs may include payment gateways to card acquirers and other online payment service providers, online payment processing, risk management services, and collection services for merchants.

Security technologies applied to ensure secure online card payments include EMV tokenisation and strong 3D-Secure (MCSC, VbV, SafeKey) combined with one-time tokens. For card-less payment services, the security technologies applied include userID/password combined with one-time tokens and online banking access with one-time TAN.

Leading PSPs resident in the country include the market leader SIBS, easypay and few other small PSPs. Like in other European countries, the Portuguese acquirers, the cross-border acquirers, and foreign PSPs are as well active on the internet in Portugal. Portuguese online merchants can use the services of around 30 PSPs, such as:

- Adyen (NL), Worldline (F), Clearpay (AUS)
- DataCash (UK), Worldpay (UK), Paysafe (Sroll (UK), Paysafecard (A)), UOL BoaCompra (BR)

Acquiring and Acceptance

In Europe, most acquirers offer multi-channel card acceptance and value-added merchant services at POS terminals, mobile MPOS terminals and online shops. The leading acquirers usually act on a European level and offer their services cross-border.

Additionally, innovative acquirers also offer the acceptance of card-less payment services based on partner agreements with the issuer of those payment services (e.g. account-based payments, wallets, prepaid products).

Most acquirers either operate their own acquirer systems and ATM/POS/MPOS network service hubs, or they use the processing services of external processors. In order to service online merchants in Europe, they may operate their own PSP processing platforms or they co-operate with one or more specialized online payment service processors (PSPs).

From 2009, European acquirers compete in their home markets, cross-border on a European level, and cross-channel at POS terminals and also servicing online merchants. From 2016, innovative acquirers started to offer omni-channel and multi-payment acceptance.

By mid-2023, omni-channel acceptance includes the ability to service all channels (i.e. POS/MPOS terminals, mobile in-store, online shops, in-app), and to accept multiple payment means in all of these channels. Multi-payment services demanded by merchants include cards, IBAN-based payments (SCT, SDD), online wallets, digital wallets, prepaid products, and immediate payments.

Outlook - By end-2023, Portuguese acquirers face the following notable challenges:

- Rollout of contactless POS/MPOS terminals and innovative SmartPOS devices, Interchange++
- Complete acquirer service portfolio beyond cards i.e. acceptance of card-less A2A payment services
- New payment services such as variable recurring payments (VRP) and buy-now pay-later (BNPL)
- Omnichannel payment acceptance: POS/MPOS, online, mobile in-app, mobile in-store
- Cross-border competition, omnichannel competition, finding PSP partners and PISP partners
- New security standards e.g. 3D-Secure 2.3, tokenisation security, biometric authentication
- Implementing Strong Customer Authentication (SCA) and risk-based authentication (RBA)
- Compliance with the General Data Protection Regulation, GDPR and the PSD2, including RTS SCA

Though Unicre was historically the sole acquirer of international credit and debit cards in Portugal, the market has become more competitive, from 2008. All Portuguese banks are Multibanco card acquirers. Obviously, Multibanco cards are processed in Portugal according to the domestic MB brand and independent from the co-badged brand for international use. Unicre acquires Mastercard, VISA, Diners, Discover, JCB, UnionPay (2015), Maestro, Electron and Spanish Euro 6000 debit cards.

The leading acquirers of international credit and debit cards are Unicre (brand: Redunicre), CGD netcaixa, Millennium bcp, and EuroBIC (formerly BPN Net Pay). Other major Portuguese acquirers include Novo Banco and Banco BPI.

Millennium bcp was previously the American Express acquirer with a network of 47,000 American Express accepting merchants - however, please see above for the status of American Express acquiring relationships across the EU. In 2014, Millennium bcp reported once that its acquiring turnover grew by 8.3% on 2013. From 2019, Millennium bcp is the UnionPay acquirer, together

with Unicre. As at end-2022, Unicre stated that there were more than 66,000 acceptance locations for UnionPay in Portugal.

Foreign cross-border acquirers in Portugal include the UK acquirers Barclaycard GPA and Worldpay, Elavon Merchant Services (IRL) and acquirers from Spain. Barclaycard GPA and WorldPay have conducted acquirer business in Portugal for several years on behalf of car rental companies, hotels and airlines.

Portuguese merchants usually have more than one acquirer: one for MB debit card acceptance and one for international credit card and debit card acceptance brands.

All acquirers have a bank license, or they applied for a payment institution license with European passport. Table 5 illustrates the card brands accepted by the acquirers in Portugal as of mid-2022.

[\(See Table 5 - Leading Acquirers in Portugal\)](#)

EuroBIC (previously BancoBIC) acquired BPN Net Pay - During 2005, a domestic competitor emerged in the form of Banco Portugues de Negocios (BPN), which launched an acquiring subsidiary, Net Pay, with the strategic objective of attacking Unicre's de facto monopoly and opening up the domestic acquiring market (see Appendix for background). BPN had acquired all types of transactions, including domestic debit. However, though it continues to offer acquirer services, BPN was severely damaged by the financial crisis. In March 2012, acquirer Net Pay became part of BancoBIC that bought BPN from the state.

CGD netcaixa - CGD entered the market at end-March 2008 with its netcaixa service "introducing new dynamics to the market which had hitherto been solely centralized on two players." CGD emphasised the attractions of offering customers an integrated solution that combined acceptance of internationally branded debit and credit cards and the domestic Multibanco brand through its automatic payment terminals. In 2011, netcaixa reported 31,318 POS terminals and 101 million card transactions acquired (+19.3%) with the value €3.7 billion (+11.7% from 2010). In 2012, netcaixa's acquiring activities were negatively affected by the slowdown of domestic demand. However, netcaixa claimed to have outperformed the market. Netcaixa claimed to service 24,000 Portuguese merchants.

MSC Fees - Though detailed numbers are not reported, downward pressure on MSC fees and interchange is reducing Portuguese banks' domestic commission income from card transactions. For example, Millennium bcp referred in its 2009 annual report to the "unfavourable evolution in interchange fees." Obviously, the EC Interchange Fee Regulation (IFR) has led to reduced MSC rates for payments with consumer credit cards, since 9 December 2015.

In August 2020, UnionPay International, and BP in Europe announced a new acceptance partnership for the acceptance of UnionPay cards across the network of over 500 fuel stations in Portugal. This is the latest agreement signed by UnionPay with a leading European operator of fuel stations. In Europe, UnionPay is now accepted by more than 5 million merchants, covering around 70% of all the bank card-accepting merchants in Europe.

SIBS MB and Discover have entered into a strategic agreement to boost payment acceptance for the two companies' brands. This partnership agreement could develop greater acceptance for MB cardholders and more payment options for Discover cardholders. Additionally, the partnership also provides for the sharing between the two technology entities for the development of new products and services.

Payment Institutions

As of 31 December 2022, there were 34 payment institutions resident in Portugal and operating in the Portuguese financial market.

In addition, a total of 304 payment institutions authorised in another EEA member state have provided notification of plans to operate in Portugal under the EU passport system, of which five payment institutions have a physical presence in Portugal through a branch and 14 through an agent. Most of the institutions report payment services taking the form of remittance businesses.

ATM Terminal Infrastructure

SIBS FPS operates the Portuguese Multibanco network. In 2022, the number of active MB ATMs operated by SIBS increased by 4.35% to 12,000. In addition, few banks operate their own ATM network hubs. The ATM acquiring processing with Maestro and Cirrus cards was migrated to SIBS in 2009. The EMV migration of ATMs was completed in March 2007.

Portuguese ATM terminals are open for debit cards (MB, Debit Mastercard, Maestro, Cirrus, VISA Debit, Electron, Plus and V PAY) and credit cards (Unicre, Mastercard, VISA, American Express, Diners, Discover, JCB and UnionPay). All ATMs in Portugal can accept UnionPay debit cards and credit cards.

As is customary in Portugal, the bank provides its customers with a wide range of functions on the ATM systems. They can deposit or withdraw cash, pay their bills, deposit checks or refill mobile prepaid recharging phone cards at ATMs, to name just a few of the total of 90 ATM functions offered.

In July 2013, SIBS selected Monex as its partner for dynamic currency conversion services that allowed international cardholders to withdraw funds at Portuguese ATMs while conveniently being charged in the home currency of their card.

From 2017, SIBS FPS enabled card-less cash withdrawals through its MB WAY app. Bank clients can generate a code with their MB WAY app, key it into any MB ATM, and then withdraw the amount demanded without any need to introduce a card.

The impact of the COVID-19 pandemic can be seen in cash withdrawals metrics. According to Banco de Portugal, in 2022, there were 13,088 ATMs (-0.86%) with 390.36 million cash withdrawals (+8.59%) with a total value of €30.67 billion (+7.48% from 2021). About 60% of all cash withdrawals in Portugal are made using ATMs connected to the SIBS' Multibanco ATM network (12,000 ATMs in 2022) which represented 91.69% of the whole ATM terminal estate. In

2022, there were on average 2,485.5 transactions per ATM per month, and the ATV per cash withdrawal amounted to €78.58.

[\(See Table 6 - ATMs and Cash Withdrawals in Portugal\)](#)

A number of banks operate ATMs for the exclusive use of their own customers such as CGD's Caixaautomática ATMs.

CGD - In 2022, CGD's network comprised 3,182 self-service terminals, plus 2,505 Multibanco network ATMs. Most CGD ATMs are 'intelligent' ATMs with a cash deposit function, which permits the automatic identification of banknotes, thus enabling the amount of the deposit immediately credited to a customer's account.

In 2021, Millennium bcp reported 1,964 ATMs. As with CDG, Millennium bcp has increased the number of 'intelligent' ATMs with deposit validation technology.

Cash-advance Services in Portugal - Competition for ATMs

In an Open Banking ecosystem, the dominant role of ATMs for cash withdrawal services may decline as more cash-advance and cash handling services are offered at retail outlets in Europe.

Cash in-Store - In parallel to ATM cash withdrawals on cards, the Portuguese banks support cash-advance services on cards at POS terminals in retail outlets (see below).

SIBS ATM Network Details - Portuguese ATMs are located at bank branches (49%) and offsite in outdoor locations (51%). The offsite ATMs are located at supermarkets (27%), public institutions (5%), restaurants and retail locations (12%), gas stations (10%) and other outdoor locations (47%).

The real achievement of the SIBS ATM network has been the extension of the services available. Since many years, it is one of the most advanced ATM networks in Europe with more than 90 different service functions.

The services include ordering rail tickets, payment of utility and tax bills and topping-up pre-paid mobile phones. SIBS continued to extend the functionality of the ATM network. New services launched in 2009 included 'Ser Solidário' which enables solidarity campaigns, collection of donations (transfers) by ATM users, and the 'Hunting License and Payments to the State' service.

ATM statistics supplied by SIBS made an estimated 396.0 million service transactions in 2021. ATM withdrawals in the Multibanco network amounted for 192.0 million with an estimated total value of €40 billion, equivalent to 60.27% of all domestic ATM withdrawals by number. The number of other ATM service transactions increased by 3.99% between 2020 and 2021 to 204.0 million. Withdrawals accounted for 48.48% of total service transactions. The value of all ATM service transactions was €40 billion, up by 26.33% on 2020.

[\(See Table 7 - Summary of SIBS ATM Services\)](#)

POS Terminal Infrastructure

In the 90s, the Portuguese POS network has started accepting credit cards and it has extended to public telephones. The launch of PMB, the Portuguese electronic purse, extended the network into low value payments. Since the phase-out of the PMB purse end-2005, payments of low purchase values are made using Multibanco debit cards and prepaid functions on cards.

Since 2010, all Portuguese POS terminals are interoperable in SIBS' Multibanco network. Also, bank acquirers operate their own POS terminal hubs connected to SIBS because of MB debit card processing. The EMV migration of POS terminals is complete since end-2013.

Accepted card brands at Portuguese POS terminals are debit cards (MB, Debit Mastercard, Maestro, VISA Debit, Electron and V PAY), and credit cards (Mastercard, VISA, American Express, Diners, Discover, JCB and UnionPay (2015)).

UnionPay cardholders can pay with their card at 66,000 POS terminals of retail stores frequented by tourists. From 2007, Dynamic Currency Conversion and Tax Refund services are available at selected retail locations. In July 2013, SIBS selected Monex as its partner for dynamic currency conversion services.

A number of merchants may use two POS terminals in their outlets as they have different acquirers for MB card acceptance and for credit card acceptance, respectively. Therefore, the country had an average POS terminal density per one million capita that is 88.38% of the EU average.

In 2022, the number of POS terminals increased by 4.72% to 407,927, however there were an estimated 384,000 Multibanco Net terminals. There were 1.56 billion POS payments (+13.76%) with a total value of €60.10 billion (-15.38% from 2021). There were on average 320.4 payments per POS terminal per month, and the ATV per POS payment amounted to €38.31.

[\(See Table 8 - POS Terminals in Portugal\)](#)

Petrol stations are the terminals that have the highest utilisation, surpassing 19,000 operations per terminal, whilst "other" terminals, which have the highest average value of purchases (€74), are terminals for example, in financial institutions and insurance companies, tourism and recreational locations and public administration.

Cash-advances ('cashback') at POS terminals in Portugal have shown very low use at selected retail stores only. In 2022, there were less than 0.01 million cash advances with a value below €0.01 billion.

Contactless POS Terminals - Developments in the POS network in 2009 included a contactless pre-launch pilot in some areas of Lisbon, including one of the most active commercial zones in the capital with a large shopping mall. In January 2013, Crédit Agricole (F) said that it

had installed 1,500 contactless POS terminals and its objective was to reach 5,500 contactless terminals by the end of 2013. In 2015, CGD reported that it has installed 7,000 contactless POS terminals. In 2022, contactless POS terminals were the new normal, and over 85% of the POS terminal estate were contactless POS terminals.

MPOS Terminals - Small and mobile merchants have started to use their smartphone and tablet PCs as a kind of mini-POS+ECR device with added chip reader dongle. In late 2012, Square clones like Zettle, SumUp, Miura, and others launched their MPOS services in Europe. It is known that Portuguese merchants also demand MPOS terminals. Further, merchants can initiate MOTO like card payments on their smartphones and tablets by downloading a payment app.

In December 2012, SumUp launched its MPOS terminal and services in Portugal. In February 2013, Portugal Telekom started to offer MPOS terminals to Portuguese small and mobile merchants.

SmartPOS Terminals - In 2018, POS terminal vendors launched innovative new types of POS terminals. Named SmartPOS terminals, they combine the electronic cash register functionality (ECR) used by merchants in outlets with a contactless POS payment terminal and merchant services in the cloud. For the very first time, the so far separated ECR devices and POS terminals are integrated in just one checkout solution device. From late 2018, SmartPOS terminal vendors like Castles, Clover, Ingenico, Justtide, Handpoint, PAX, Poynt, Verifone, Worldline, and others have launched their SmartPOS devices and services in Europe. It is believed that Portuguese SME merchants will embrace SmartPOS terminals.

SIBS MB NET Details - All the major international brands - VISA, VISA Debit, Electron, V PAY, Plus, Mastercard, Debit Mastercard, Maestro, Cirrus and American Express - are accepted on the SIBS POS network, MB NET. SIBS FPS has also developed a POS acquiring processing service. Since 2010, all Portuguese POS terminals are interoperable linked through the SIBS' POS network.

In 2021, the number of payment transactions at POS terminals rose by an estimated 40.80% to 725.0 million, and the value of purchases was an estimated €52 billion, up 10% from 2020.

[\(See Table 9 - SIBS MB NET Operations\)](#)

Mobile Phone Transactions - MB PHONE

Together with mobile network operators, SIBS launched the TeleMultibanco Service (TeleMB) in 1996. TeleMB was rebranded as MB PHONE in 2008, matching the branding of MB NET.

The service allowed users to perform some of the operations that are available at ATMs (such as mobile phone top-ups, balance and account movements enquiries, payment of services) using the same interface but from a mobile phone.

According to SIBS, the key development was in March 2007 when a new interface looking similar to an ATM screen was developed for a mobile operator. In November, SIBS signed an agreement in principle with all mobile operators aimed at developing, maintaining, and promoting this service. In April 2008, SIBS announced the availability of the enhanced service for the three

mobile operators in Portugal, Optimus, TMN, and Vodafone.

A new, simplified subscription system was introduced, both to increase the number of subscribers and service users, and to provide an interface allowing subscription to the service via online banking. Though take-up and use of the service declined in 2005 and 2006, it recovered significantly in 2007 (29%), and by a further 34% in 2008, slowing to 3.5% in 2009. 2010 saw a fall of 16% to 2.5 million transactions and no change in 2011. In 2015, SIBS reported 2.66 million MB PHONE transactions with the value €20.92 million. SIBS MB PHONE provided no subsequent update from 2016.

Remote Payments on the Internet - Cards & More

Portugal is a small e-commerce market in Europe. From 2015, due to EU VAT regulation, Portuguese merchants will have to collect the applicable VAT rate for cross-border sales based on the consumers' residence.

Internet use - In 2022, 85% of the Portuguese used the internet and 54% of internet users purchased in online shops in the last 12 months. Smartphone penetration is 87%.

According to a survey carried out jointly by CIP-Confederação Empresarial de Portugal (Portuguese Entrepreneurs Association) and ISCTE-Business School, as of 2020, sales through digital channels are worth close to a quarter of the revenues of Portuguese companies that have diversified in their sales methods and opted for digital sales. The estimated proportion of digital sales in the companies selling through this channel was 23%.

According to ANACOM - the Portuguese regulatory authority for postal communications and electronic communications, Information and Communication Technologies Usage in Households and by Individuals, whose fieldwork was carried out between June and August 2022, 43% of residents in Portugal carried out purchases or orders via the Internet within three months before the survey, 2 percentage points more than in the previous year.

According to domestic retailer associations, the Portuguese online B2C e-commerce value of goods and services accounted for €8.21 billion in 2022, up 7.46% from 2021. The average B2C e-commerce expenditure per capita amounted to €797.2, while it was €1,266.5 per online buyer. In 2022, e-commerce (eGDP) had a 3.39% market share in Portuguese GDP.

The most popular segments in e-commerce are clothing, shoes and lifestyle, home, and garden, I.T, Media and entertainment, telecom, health and beauty, household electronics, toys, food, consumer electronics, and sports and recreation.

[\(See Table 10 - Internet Use in Portugal\)](#)

Cards on the Internet (CNP) - Most Portuguese online shops accept MB cards and all cards with international brands in the case that the merchant has signed an acceptance contract accordingly. The Portuguese banks and e-money institutions issue prepaid cards and virtual cards for internet use, e.g. the Webuy prepaid card of CGD.

The domestic secure MBNet technology is applied for payments on MB cards on the internet, and the 3D-Secure technology is used as well by the issuer banks. Further, web-based mail order services for merchant-initiated payments and Dynamic Currency Conversion (DCC) are offered on demand.

The Portuguese e-payment mix as preferred by the online buyers has been dominated by cards and by micropayment services like prepaid products (e.g. paysafeCard) and e-/m-wallets (e.g. PayPal). Also used are cash-on-delivery and online bank transfers.

According to SIBS, in online payments, the most popular methods in 2021 were cards (38% volume, 61% value), cash (4% volume, 2% value), credit transfer (7% volume, 8% value), e-payment solutions (46% volume, 25% value) and other methods (4% volume, 4% value).

As of 2021, online purchases with domestic cards continued to be mostly conducted with foreign merchants (transactions with these merchants accounted for 65% of the volume and 66% of the total value of online purchases with cards issued in Portugal).

According to BdP, online purchases with domestic cards also rose further in 2022 (28.4% in volume and 32.2% in value). These transactions accounted for 14.0% of the volume and 15.4% of the total value of purchases made with domestic cards, 6 and 6.6 percentage points more than in 2019 (the year before the pandemic) respectively. The majority of online purchases with domestic cards were made from retailers located outside Portugal (66.3% in volume and 65.9% in value).

Among others, the online payment services relevant for the Portuguese merchants include:

- Credit cards: Mastercard, VISA, American Express, Diners, Discover, JCB, UnionPay, Unibanco
- Debit cards: MB, Maestro, V PAY, Electron, Debit Mastercard, VISA Debit
- Account-based payments: credit transfers
- Online wallets: PayPal, Skrill, Amazon Pay
- Digital wallets: MB Way, MasterPass, VISA Checkout
- Prepaid products: paysafecard
- Traditional payments: payments-in-advance, payments-on-invoice, cash-on delivery, pay-at-outlet
- Factoring: Klarna

Remote Payments on the mobile Internet -Since 2010, online buyers with a high affinity for

smartphones have started to use their mobile phones for shopping on the mobile internet. Mobile online shops can be accessed by mobile internet, by mobile app, or by scanning a 2D QR-code displayed in a newspaper or at a bus station. Thus, remote mobile phone payments are executed either by using the e-payment page of the mobile online shop or by using payment apps of a PSP or an acquirer.

Portuguese merchants can also download a payment app from their acquirer in order to initiate MOTO payments with cards and/or online direct debits. Leading Portuguese merchants are testing their own mobile apps including loyalty functions (e.g. e-vouchers, discounts, outlet finder, QR-code scanning) and an IBAN-based direct debit payment function.

Mobile Payments – Overview

In 2022, 124.5% of Portuguese subscribed to a mobile phone. Many Portuguese people own more than one mobile phone and 87% own a smartphone (up from 32% in 2013). Tablet penetration has jumped significantly to 51% in recent years.

Since 2009, the next generation of mobile services and payments has started, pushed by the online buyers' high affinity to smartphones and tablets and by new disruptive technologies (1D-barcodes, QR-code, Bluetooth BLE, and Near Field Communication NFC).

Mobile initiatives in Portugal continue field testing and using new technologies either as initiating form factors to bridge to online shops (1D-barcodes, QR-code, NFC) or to enable contactless access to the retail POS outlet (1D-barcodes, QR-code, BLE, Bluetooth Low Energy, NFC Stickers, Mobile NFC Phones), e.g.:

- To enable access to online shops for any type of mobile devices (e.g. tablets, iPhones, Androids)
- To enable mobile services & payments initiated by consumers' tablets or smartphones at ATMs, at vending machines, at smart posters, and at POS terminals in retail outlets
- To enable small merchant's tablets and smartphones by adding MPOS terminal devices for payment services.

The m-Payment Mix in Portugal - There are no official m-payment statistics, but PSP information indicates that the domestic m-payment mix is similar to the e-payment mix (see Remote Payments on the Internet section).

Mobile Payment Initiative Details

In 2023, the various European mobile payment initiatives can be grouped into

- New non-bank players like FinTechs, payment initiation service providers (PISPs), and account information service providers (AISPs) launch digital payment services beyond cards

- Innovative banks that launch mobile banking apps allowing for card-less in-app payments and in-store payments on the internet
- Leading banks that pilot mobile HCE NFC payments with the card credentials stored-on-file in the cloud
- Banks partnering with mobile network operators in order to offer mobile SIM SE NFC payments on cards with the card credentials stored in a secure element on the SIM card of the respective mobile device
- Innovative retailers which offer their own apps with loyalty and payment functions to their consumers.

EPI – In July 2020, a group of 16 major Eurozone banks announced the start of the implementation phase of a new unified payment scheme, the European Payment Initiative (EPI).

In 2021, the 31 founding bank groups from seven European countries and two third-party acquirers had included:

- Belgium/Netherlands: KBC Bank, ING Bank
- Finland: OP Financial Group
- France: BNP Paribas, Groupe BPCE, Crédit Agricole, Crédit Mutuel, La Banque Postale, Société Générale
- Germany: Commerzbank, Deutsche Bank, DZ Bank, Savings Banks Group
- Italy: UniCredit
- Poland: Bank Polski
- Spain: BBVA, CaixaBank, Banco Santander, Abanca, cacabank, bankinter, Liberbank, Unicaja Banco, Kutxabank, Caja de Ingenieros, Caja Rural, Ibercaja, Sabadell, Grupo Coop Cajamar
- Acquirers and processors: Worldline, NETS (NEXI)

In March 2022, EPI gave up on its effort to build a rival to Mastercard and VISA in Europe after more than half its members left. However, 13 shareholders confirmed on February 25th that they remain convinced of the strategic value of a unified payment solution, leveraging instant payments, and want to go ahead. Therefore, the EPI interim company is now adapting its scope and objectives to this new dimension excluding cards.

The remaining shareholders of EPI include Banco Santander, Banque Fédérative du Crédit Mutuel, BNP Paribas, Crédit Agricole, Deutsche Bank, Deutscher Sparkassen- und Giroverband, Groupe BPCE, ING Bank, KBC Bank, La Banque Postale, NETS (NEXI), Société Générale and Worldline.

In April 2023, the European Payments Initiative acquired the Dutch payment scheme iDeal and, the mobile payments app, Payconiq, both supported by a host of Belgian and Dutch banks.

The ambition of EPI is to create a unified pan-European payment solution leveraging Instant Payments, SCT^{INST}, offering a card for consumers and merchants across Europe, a digital wallet, and P2P payments.

The solution aims to become a new standard payment service for European consumers and merchants in all types of transactions including in-store, online, cash withdrawal and “peer-to-peer” in addition to existing international payment scheme solutions.

EPI’s objective is to offer a digital payment solution that can be used anywhere in Europe and to supersede the fragmented landscape of domestic payment services that currently still exists. In doing so, EPI founders are responding to merchant and consumer communities that have been calling for payment initiatives to take a more pan-European approach.

EPI will first and foremost benefit European citizens, and it will also bring tangible benefits to European merchants, by offering them a seamless, competitive, and unified pan-European payment service solution that is also available to all European consumers.

The beginning of the implementation phase is expected to materialise through the creation of an interim company in Brussels, Belgium, which will set out clear deliverables including the completion of the technical and operational roadmap and initiating the implementation work. The accomplishments of this interim company will be evaluated by each bank before moving on to the EPI’s final corporate structure.

Wero - In September 2023, EPI selected ‘Wero’ as the commercial name for its forthcoming digital wallet solution. The Wero digital wallet will be rolled out in phases, initially to support account-to-account based instant P2P and consumer-to-business payments, followed by online and mobile shopping payments and then point-of-sale payments. EPI aims to launch Wero by mid-2024 in Belgium, France, and Germany, followed by the Netherlands and aims to extend to other countries in the years to come.

In December 2023, EPI completed its first instant A2A payment transaction in a proof-of-concept between customers from German Sparkasse Elbe-Elster and French Banque Populaire and Caisse d’Epargne (Groupe BPCE). The inaugural transaction, worth 10 euros, was sent from a German account to a French account using SCT^{INST} and the EPI’s digital wallet.

Central Bank Digital Currencies, Cryptocurrency Products

In 2022, the Portuguese payment ecosystem was composed of traditional cash payments, digital cryptocurrency products of independent payment service providers, and research and development of central bank digital currencies, CBDC.

Regulators and national central banks are challenged by unregulated independent cryptocurrency products. The regulators consider regulated digital currencies instead.

Central Bank Digital Currencies (CBDC) – The Digital Cash Challenge

Central bank digital currency (CBDC), also called digital fiat currency or digital base money, is a digital currency issued by a national central bank (NCB), rather than by a commercial bank. It is also a liability of the NCB and denominated in the sovereign currency, as is the case with physical banknotes and coins.

All CBDCs are under the authority of the respective national central bank, and they are part of the domestic cash payment ecosystem. Rather than a new currency, CBDC is a form of central bank electronic money that could be used by households and businesses to make payments. In addition, most CBDC implementations will likely not use or need any sort of distributed ledger such as a blockchain.

Unlike “retail CBDC,” which is generally designed as a central bank liability universally accessible to individuals and businesses within a jurisdiction’s financial system, “wholesale CBDC” refers to a digitized central bank liability designed for sizable (generally interbank) transactions, and for which access is limited to certain financial institutions.

National Central Banks (NCBs) have been providing trusted money to the public for hundreds of years as part of their public policy objectives. Trusted money is a public good. It offers a common unit of account, store of value and medium of exchange for the sale of goods and services and settlement of financial transactions. Providing cash for public use is an important tool for central banks. Yet the world is changing.

Even before COVID-19, cash use for payments was declining fast and convenient digital payments have grown enormously in volume and diversity. To evolve and pursue their public policy objectives in a digital world, central banks are actively researching the pros and cons of offering a digital currency to the public, a “general purpose” CBDC.

Central banks’ interest in CBDC has increased as a potential means of delivering their public policy objectives. Profound, ongoing changes across finance, technology and society, as well as the recent COVID-19 crisis, provided additional impetus for the research of, and experimentation related to, CBDCs.

CBDC is a national digital currency issued by the central bank that is expected to replace or coexist with fiat money and hold the same value. Mobile money, on the other hand, utilises existing commercial banking-based accounting to manage customer wallet balances based on an exchange with cash or lines of credit and loans.

CBDC is a direct liability on the central bank as it is the main issuer of the currency, whereas digital money is the liability of commercial banks and other authorised financial institutions using funds on account. Although some implementation approaches propose that CBDC can be implemented in either an indirect or hybrid form, its liability remains on the respective national central bank.

Background on CBDC Evolution

In October 2020, the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, Sveriges Riksbank, the Swiss National Bank and the Bank for International Settlements (BIS) published a report, *Central bank digital currencies: foundational principles and core features*, identifying the foundational principles necessary for any publicly available CBDC to help central banks meet their public policy objectives.

The report focused on a publicly available “general purpose” CBDC (a digital payment instrument,

denominated in the national unit of account, that is a direct liability of the central bank).

A “wholesale” CBDC, restricted to financial institutions, is also an active area of exploration, notes the report, for central banks but one that carries different opportunities, challenges, and risks. The report explored the use cases for, and challenges and opportunities arising from, the possible issuance of a general purpose CBDC.

In September 2021, the same seven central banks and the BIS followed up with the publication of a new set of reports exploring the potential of retail CBDCs, including policy options and practical implementation issues. While none of the central banks has yet decided to proceed with a retail CBDC, they recognise such an instrument would have wide-ranging implications. Delivering on the future needs of consumers would require systems that encourage innovation, choice, and competition among a diverse mix of intermediaries.

- The first report explores how private-public collaboration and interoperability can be designed into CBDC systems to achieve this objective. In particular, policies about privacy and access to payment data would be key design elements in order to maintain public trust.
- The second report focuses on how a CBDC could best serve people and businesses in a fast-changing technological landscape. Lessons from previous payment innovations compiled in the report, show that success often requires harnessing network effects and not requiring users to obtain new devices. Nonetheless, there would not be a “one-size-fits-all” solution and CBDC adoption strategies would need to consider multiple perspectives through public consultations.
- The third report outlines the possible impact of CBDC issuance on banking systems, in terms of intermediation capacity and overall resilience. Preliminary analysis highlights the importance of allowing the financial system time to adjust and the flexibility to use safeguards to influence CBDC adoption.

BIS reported that a 2021 survey of central banks found that “86% are actively researching the potential for CBDCs, 60% were experimenting with the technology and 14% were deploying pilot projects.

The People’s Bank of China (PBoC) is piloting a ‘digital yuan’, known as e-CNY, in various cities, often in association with major sporting events, such as the Winter Olympics.

The ECB published a paper on the potential of a “digital euro” in October 2020, exploring the “benefits and risks” of such an initiative. It completed a public consultation in January 2021 and a series of focus groups in December 2021. Its investigation stage is expected to continue until October 2023, after which the ECB “will decide whether to start developing a digital euro.”

The US Federal Reserve reported in February 2022 that while it has made no decisions about “whether to pursue or implement” a CBDC, it was “exploring the potential benefits and risks of CBDCs from a variety of angles and was inviting public feedback on discussion papers.

The Bank of Japan said in October 2020 that it had no plans for a CBDC and was committed to maintain the cash system as long as there was public demand for it. It nevertheless intended to explore technical feasibility through a proof of concept, consider institutional arrangements and coordinate approaches with domestic and international stakeholders. In 2023, the Bank of Japan (BOJ) has announced that it will begin a pilot for its digital yen with commercial financial institutions. In February 2023, Bank of Japan has embarked on a CBDC trial.

In June 2023, the BIS and BoE said they completed a CBDC pilot project involving CBDCs jointly run by the Bank of England (BoE) and the Bank of International Settlements (BIS). Project Rosalind was designed to explore how a “universal and extensible API layer” could connect central bank and private sector infrastructures and enable retail CBDC payments. The project also sought to develop a number of retail-CBDC use cases.

According to the BIS and BoE, the project has successfully demonstrated that “a well-designed API layer could work with different private sector applications and central bank ledger designs and that a set of simple and standardised API functionalities could support a diverse range of use cases”.

In all, the project led to the development of 33 API functionalities and examined 30 retail CBDC cases including peer-to-peer transfers, retail payments for goods and services and small-value business transactions.

Global Status of CBDCs

Most National Central Banks (NCBs) are involved in different stages of a CBDC project. Especially, the NCBs have different views on which kind of CBDC they would intend to launch as a digital currency:

- A “retail-CBDC” designed as an NCB liability universally accessible to individuals and businesses within a jurisdiction’s financial system.
- A “wholesale-CBDC” that refers to a digitized central bank liability designed for sizable (generally interbank) transactions, and for which access is limited to participating financial institutions.
- Both a “retail-CBDC” and a “wholesale-CBDC”.

As of 2023, the global CBDC status reveals that four central banks - Nigeria (e-Naira), Eastern Caribbean (D-Cash), Jamaica (JAM-DEX), and the Bahamas (Sand Dollar) - have introduced a domestic CBDC scheme.

Six countries have launched a CBDC pilot: France, Canada, China, India, Saudi Arabia, and Ghana.

The NCBs of most other countries are involved in either a CBDC proof-of-concept phase - including Norway, Hungary, and Sweden - or they are still in a CBDC research stage.

So far, Ecuador is the only country that has cancelled its CBDC ambitions, Dinero electrónico.

CBDC, the European Union and the Digital Euro

In July 2021, the Estonian Central Bank released a report about its experiment with the ECB and the central banks of Spain, Germany, Italy, Greece, Ireland, Latvia, and the Netherlands to assess the functionality of the digital euro. The project was able to conduct 300,000 transactions per second, with an average rate of less than two seconds per transaction.

In June 2023, the European Commission (EC) has published its legislative proposal establishing the legal framework for a possible digital euro, stressing that the CBDC would be a complement to, not replacement for, cash.

A digital euro would be available alongside existing national and international private means of payment, such as cards or applications. It would work like a digital wallet, with people and businesses able to pay with it anytime and anywhere in the euro area.

The digital euro would be available for payments both online and offline. While online transactions would offer the same level of data privacy as existing digital means of payments, offline payments would essentially be like paying with cash – with nobody able to see what people are paying for.

The digital euro would be distributed by banks and other payment service providers, with basic services provided to people free of charge. Merchants would be required to accept the digital currency unless they are cash-only firms.

The EC's proposal still needs to be adopted by the European Parliament and the European Council before the European Central Bank decides whether to roll out a digital euro.

Pros and Cons of CBDCs

According to research by the Bank of England, BIS, and by several other central banks, the benefits of CBDCs include supporting increased innovation in the payment system with:

- 'Programmable money' that enables transactions to occur according to certain conditions, rules or events
- Automatic payment of taxes at the POS
- Allowing the government to make direct transfers to individuals
 - Automatic payment of dividends directly to shareholders
- Electricity meters paying suppliers directly based on power usage

- Making 'micropayments' at much lower costs
- A more reliable and attractive alternative to stablecoins (see Stablecoins section below)
- A well-designed CBDC could help to retain some of the beneficial characteristics of cash that current electronic bank deposits don't. A CBDC might focus more on promoting privacy or support financial inclusion
- CBDCs could facilitate better cross-border payments systems by linking CBDCs to speed up cross-border payments
- More effective transmission of monetary policy
- Changes in base rates could be passed onto consumers more quickly and efficiently.

Possible challenges related to use of CBDCs could include:

- Disintermediation and reducing the banking sector's balance sheet - When someone converts bank deposits to CBDC, they reduce the size of the commercial bank's overall holdings. This process of disintermediation is an inevitable consequence of introducing a CBDC. If banks' balance sheets were to reduce too much and too quickly, they might need to seek funding from elsewhere. This could push up the cost of their lending to businesses and consumers.
- Risk of bank runs - introducing a CBDC could potentially make it easier for runs on the banking system to occur. At the moment, such factors as the difficulty of storing large amounts of cash limit such risks. A CBDC would remove many of those limits.
- Offline usage - the CBDC payment system would probably require a connection to the central ledger, which may not always be available. While it might still be possible to initiate a payment, the recipient would have to trust the sender to have sufficient funds. There is also a risk of someone attempting to spend the same money twice.
- Cyber-attack - BIS warns that a successful attack on a CBDC system could quickly threaten many users, as well as their faith in the system. This is because there would be so many 'endpoints' in a linked, centralised system. This would make a CBDC system a critical piece of national infrastructure.
- Data privacy - Fully anonymous CBDC are unlikely to be permitted due to the need to comply with know-your-customer and anti-money laundering checks. A CBDC would inevitably allow more tracking and less anonymity than cash does. BIS suggests that "a key national policy question will be deciding who can access which parts of [this data] and under what circumstances".

In 2020 the Eurosystem published a report where it addressed the possibility of issuing a CBDC in the euro area. The digital euro will be a CBDC provided to the general public (including households and firms) to be used in retail payments. By issuing the digital euro, the Eurosystem will provide citizens and other economic agents with a trusted, risk-free digital means of payment that is free of charge for basic use.

The report concluded that, although the issuance of the digital euro has not been necessary to date, it may be a viable option for the Eurosystem to fulfil its mandate if certain scenarios materialise. Against this background, the Eurosystem is currently examining the implications for its core functions of issuing the digital euro, including for the proper functioning of payment systems.

The investigation phase of the digital euro, which started in October 2021 and will last 24 months, aims to establish models to issue and distribute a digital euro that maximise the advantages for users while minimising potential negative effects on financial stability. The BdP continues to actively participate in the work of the Eurosystem on a digital euro and the use of new technologies in market infrastructures. This active participation is a priority under the Strategic Plan of the Banco de Portugal for 2021-25.

In July 2021, the ECB announced the launch of the investigation phase of a digital euro project. The investigation phase will last 24 months and will aim to address key issues regarding design and distribution. According to the ECB, a digital euro must be able to meet the needs of Europeans while at the same time helping to prevent illicit activities and avoiding any undesirable impact on financial stability and monetary policy. This will not prejudice any future decision on the possible issuance of a digital euro, which will come only later. In any event, a digital euro would complement cash, not replace it.

The project will also shed light on the changes to the EU legislative framework which might be needed and that will be discussed with, and decided by, European co-legislators. The ECB will continue to engage with the European Parliament and other European policymakers throughout the project's investigation phase. The technical work on the digital euro with the European Commission will also be intensified.

In February 2022, the European Commission announced that it would propose a bill that would serve as the legal foundation for the issuance of a digital euro by the ECB. In May 2022, Kristine Lagarde stated that she would be willing to back the digital Euro. The ECB is set to begin a pilot of the digital euro in 2023.

The working paper states that the use of CBDC for retail payments is the primary use-case for the development of a digital Euro. The paper also rejects the motivation of using CBDC as a store of value, which would involve consumers switching deposits from commercial banks into CBDC. The working paper also recommends that a CBDC should be interest-bearing, with attractive interest rates offered for smaller sums suitable for payments and lower rates available for larger amounts.

Cryptocurrencies EU

The regulation of crypto assets and related services across Europe is not standardised and

is highly fragmented. While no nation has outright banned usage of cryptocurrencies like Bitcoin, Ethereum and others, regulators have not formed a consensus over how to legislate such a quickly fluctuating market, where new cryptocurrencies emerge faster than regulators can catch up to.

The current approach across Europe is to adapt existing legislations to encompass cryptocurrencies, however, this is unlikely to be efficient as consumer and business usage changes.

In the European Union, the fifth Anti-Money Laundering Directive (AMLD5) covers certain crypto assets under the term "virtual currencies", but it does not provide a harmonised approach. As a result, each Member State has created its own regulatory regime for transactions related to "virtual currencies" or crypto assets.

In response, the European Commission proposed the Markets in Crypto-assets (MiCA) regulation in 2020 as part of the Digital Finance Strategy, with MiCA expected to come into force in 2022 and will be directly applicable in all Member States after an 18-month transition period. MiCA will result in a harmonised set of rules for products and services and legal certainty related to crypto assets throughout the European Union in 2024. This would enable a larger number of investors to be active in this area and to use distributed ledger technology (DLT).

MiCA is to apply to all persons who want to issue crypto assets or provide services related to crypto assets in the EU.

The MiCA proposal is intended to lay down uniform rules on transparency and disclosure requirements for the issuance, offer to the public and the admission to trading of crypto assets. In addition, there are rules on the authorisation and supervision of crypto asset service providers and their issuers.

The main focus lies with the issuers of asset-referenced tokens and e-money tokens. The Regulation intends to regulate the operation, organisation, and governance of issuers of asset referenced tokens and e-money tokens and crypto asset service providers. There will also be investor protection rules for the issuance, trading, exchange, and custody of crypto assets. In addition, measures to prevent market abuse are to be included in the Regulation to ensure the integrity of the crypto assets markets.

In June 2022, the EU Council President and European Parliament reached agreement on MiCA regulation, ruling that crypto asset service providers will require authorisation to operate in the EU, not including NFTs or media-related digital assets.

Under the agreement, the regulatory framework will protect investors and consumers, while ensuring financial stability and enabling innovation and growth. The regulations will help protect consumers from fraud and scams, as crypto asset service providers will be liable if they lose assets and fail to protect investors' wallets. The European Banking Authority (EBA) will form a public register of non-compliant crypto asset providers.

The regulation will also implement restrictions on stablecoins, with stablecoin issuers to

be supervised by the EBA and their “holders will be offered a claim at any time and free of charge.”

Unregulated Cryptocurrency Products – Background

Regulators and national central banks are challenged by unregulated independent cryptocurrency products. Whereas CBDCs are under the authority of the central bank, almost all cryptocurrencies are decentralised, and not controlled or managed by any central authority.

Obviously, financial market authorities and the national central banks are not in favour of unregulated cryptocurrency products, and they see them as a systematic risk for the financial system. Their intention to regulate the respective cryptocurrency exchange platforms has gained momentum.

Cryptocurrencies, originally designed as a store of value, are digital assets, developed and maintained on decentralised blockchains, and they can be used as a medium of exchange or payment method. Bitcoin and Ethereum are the most popular forms of cryptocurrencies worldwide used by consumers and businesses for transactions.

As of 2022, over 400 million people worldwide used cryptocurrencies, with merchants and businesses in more sectors accepting it as a form of payment. The major payment schemes VISA and Mastercard, PayPal and along with a growing number of financial institutions, have launched services allowing consumers to purchase or use cryptocurrencies for a range of applications.

According to a 2022 Deloitte survey, around two-thirds (64%) of surveyed merchants indicated that their customers have significant interest in using digital currencies for payments, and 83% expect consumer interest in digital currencies for payments to increase or significantly increase over the next 12 months.

In addition, merchants are motivated by the prospect of enabling immediate access to funds (40% of respondents), taking advantage of blockchain-based innovations in decentralised digital finance (39%), and allowing in-house management of the revenue cycle/treasury/finance department (39%).

Over half (54%) of large retailers (with revenues of \$500 million and up) have invested more than \$1 million on enabling digital currency payments, while only 6% of small retailers (with revenues of under \$10 million) did so.

A 2022 survey from Checkout.com found a sharp rise in people wanting to use cryptocurrencies as a means of payment, with 40% of 18-35-year-old consumers citing their desire to experiment with using crypto as a payment method, up from less than 30% in 2021. Meanwhile, over 80% of businesses say offering crypto has attracted new customers, led to a decrease in chargebacks, while just over 60% have seen higher authorisation rates accepting crypto payments.

Current estimates put cryptocurrency ownership in Europe at around 18 million people.

Stablecoins

Stablecoins are a type of asset-backed cryptocurrency, whose value is typically pegged to the value of an underlying asset such as USD, GBP, or commodities like gold. Stablecoins are partially backed by real assets, and they are designed to have a value pegged to real-world assets, therefore avoiding the extreme volatility that affects cryptocurrencies.

Stablecoins offer the potential benefits of cryptocurrencies, like transparency, security, immutability, and decentralised control, while maintaining the guarantees and stability that come with using fiat currency. Stablecoins have potential to be used in cross-border payments, providing a secure, online environment for peer-to-peer (P2P) transactions to take place without needing decentralised cryptocurrencies or to pay fees to convert money into local currencies.

As of 2022, there were more than 200 stablecoins globally, comprising a market that's worth approximately \$130 billion.

A survey of central banks in January 2021 found that two-thirds of respondents are actively researching the potential impact of stablecoins on financial stability. However, some regulators in the US and China, consider stablecoins as a potential serious risk to financial systems. The risk is especially high with centralised coins, such as those backed by fiat and issued by private organisations, as economic power would be disproportionately concentrated on a single entity.

The widespread use of stablecoins in payment platforms could also pose a systemic risk, in relation to the validation and confirmation of stablecoin transactions which could interfere with payment systems. If stablecoin users couldn't access money in their e-wallets and businesses couldn't receive payments, economic activity would be greatly disrupted. However, these risks have not deterred major institutions like JP Morgan and VISA to explore stablecoin use cases via partnerships and internal R&D.

Tether is the largest stablecoin worldwide with a market share of 50%. Diem or Libra, a digital currency proposed by a consortium led by Facebook (Meta), is probably the best-known stablecoin initiative, although the original project has since been abandoned.

MARKET SIZE & DYNAMICS

MARKET SIZE AND DYNAMICS

Cards in Issue

Banco Portugal changed its statistical reporting in 2013. It shifted deferred debit cards from credit card reporting to debit card reporting. Thus, figures after 2013 are not comparable with previous years.

In 2022, the total number of Portuguese cards in circulation amounted to 24.02 million (+2.92%), equivalent to 2.33 cards per capita. Statistically, table 11 shows that Portuguese people have around two cards, each co-badged for international use: one card with a debit or deferred debit function and one card with a credit or delayed debit function.

Of the cards total, in 2022 an estimated 23.6 million cards carried the MB brand. MB cards co-badged Maestro, Electron, Mastercard or VISA accounted for 70% of cards processed in the MB network. Other cards include Unibanco credit cards issued by Unicre and cards branded with one of the international card brands.

At end-2013, there were 3.0 million contactless cards in circulation and, at end-2022, there were 19.01 million active contactless cards in circulation, around 87.11% of the payment cards total.

[\(See Table 11 - Cards Issued in Portugal\)](#)

Historic Background – Figures by card scheme are no longer available. Portugal was historically one of the largest VISA Electron markets in Europe, with Electron cards accounting for estimated three-quarters of expenditure charged to VISA cards in Portugal and an even high percentage of total transactions on VISA-branded cards. However, in a significant move for the market, in 2007 Millennium bcp started to issue Maestro in Portugal.

Card Fraud

Card fraud is one of the most fascinating aspects of the payments industry, not least because it is relentless and mutating. EMV implementation and 3D-Secure, combined with Strong Customer Authentication (SCA), have done much to reduce domestic losses from lost and stolen cards in Europe. However, the war against fraud losses and the changing face of fraud continues to be a threat for the payments industry, including Portugal.

The global card fraud challenges are Card-Not-Present fraud (CNP), cross-border fraud and counterfeiting on non-EMV cards. CNP fraud accounted for 80% of the total value of card fraud losses in 2020. From 2017, a new payment fraud category are fraud losses on contactless card payments. International card fraud continues to be smaller in scale than domestic card abuse but is proportionately far more common. And of course, fraudulent cross-border transactions on cards continue to grow on all purchase channels.

Losses from card fraud on the internet and cross-border fraud on domestic cards have grown significantly. Following EMV implementation, card fraud has moved increasing to countries where POS terminals or online shops have not yet been migrated to EMV and SCA, respectively, and to cross-border fraud with compromised cards.

The breakdown of card fraud losses by method of compromise already indicates the importance of distinguishing between domestic and cross-border fraud losses. The method of compromise covers the means by which fraudsters obtain payment cards or card details. Notable methods of compromise in a complex payment world are CNP fraud based on theft of card credentials and card lost and stolen fraud followed by growing ID fraud and by cross-counterfeit fraud.

The main method of compromise responsible for losses in many European countries is now the theft of card credentials. A high proportion of these card fraud losses are caused by the growth in e-commerce, and still the lack of use of strong customer authentication methods such as 3D-Secure.

In a post data-breach world, identity information, payment credentials, account credentials and responses to security questions are widely available for purchase in bulk. Complete fraud exploits and zero-day attacks are also easily available on the black market for outright purchase or as a hosted / fully managed service.

In the digital payments world and having the changing face of fraud in mind, there are significant challenges for card issuing banks, payment service providers and their supporting processors.

According to SIBS as of 2019, the Portuguese payment system had relatively low fraud rates, making cards more reliable for consumers and merchants. In 2019, the number of fraudulent transactions per thousand transactions was nine per 100,000 transactions in Portugal, compared with 36 for the EU-5 and 32 for the EU-19.

According to market insight, Portugal has seen fraud reduce rapidly since its peak in 2007; losses are down across the board, with counterfeit fraud and card-not-present having the biggest reductions.

Portugal's card fraud loss mix is aligned with European trends. Counterfeit has been reduced by nearly 90% since 2007. In 2021, counterfeit fraud comprised 3.0% of total card fraud, while CNP fraud comprised 94.9%, an increase of 2.07% from 2020. Around 80% of CNP fraud was cross-border.

The levels of fraud in the use of electronic payment instruments in Portugal remained quite low. The most common frauds in 2022 were the result of social engineering mechanisms, such as phishing, where perpetrators can appropriate the user's security credentials or strong customer authentication elements, acting on the user's or customer's behalf to initiate and validate payment transactions. In the first half of the year, fraud rates were higher for card transactions (242 fraudulent transactions for every million card transactions), although the average value per fraudulent transaction was the lowest (€45). Credit transfers recorded an average value per fraudulent transaction of €4,059, but only five in every million were fraudulent. For direct debits, the average fraud value was €499, and there was only one

fraudulent transaction per every million transactions.

In 2022 payment service providers reported 55 major incidents to the Banco de Portugal (one less than in the previous year), of which 50 were operational and five were security incidents. These incidents affected around 1.9 million users and led to the failure of 3.7 million transactions worth €975 million. As in the previous year, homebanking and mobile banking were the channels most affected by the reported incidents.

[\(See Table 12 - Card Fraud Losses on Portuguese Cards\)](#)

According to ECB figures published in October 2021, the value of fraud as a share of transaction value in Portugal in 2019 was 0.009% by value and 0.006% by volume.

In 2019, acquirer card fraud losses by value and by channel were composed of ATM fraud: 8%, high POS fraud: 30% and CNP fraud: 62%.

In 2019, issuer card fraud losses in Portugal by channel were composed of ATM fraud: 5%, POS fraud 4% and CNP fraud 91%.

As most POS card transactions are authorized online-to-issuer, acquirer fraud rates in Portugal are under control except for offline vending machines, e-commerce, and other hotspots.

Portuguese banks are pushing 3D-Secure, offer PIN-change services at ATMs and SMS notification to inform cardholders about the use of their credit card. The increasing numbers of chip technology cards, contactless cards and display cards have led to improved safety of payment transactions. Credit card fraud prevention measures taken have been pushing 3D-Secure, updating banks' fraud prevention systems and real-time-scoring and implementing more rule-based fraud control.

Card Use

SIBS reported that more than 96% of all ATM/POS transactions processed by SIBS were EMV transactions, since 2014.

Card payments in Portugal showed a compound annual growth rate of 7.48% in the last five years. Card payments are now 6.65 times higher by number and 4.27 times higher by value than cash withdrawals, respectively. Since end-2008, Portugal - with just 10.29 million people - is member of the so-called 'card transaction billionaire club' in Europe (see European Overview section).

Banco de Portugal said that the one-time decline reported in 2012 resulted from the fall in Portuguese consumer confidence and the strong reduction in consumption.

According to Banco de Portugal, in 2022, there were 2.30 billion card payments (+19.49%) with the total value of €114.83 billion (+21.45% over 2021). As with other Western European

markets, COVID-19 had a dampening impact on card usage which was expected to rise from 2021 onwards.

The ATV per card payment amounted to €49.79, and there were on average 105.6 payments per card per year (+15.89%). In 2022, payments on cards with a debit/deferred debit function amounted to 83.03% by number and 85.93% by value.

Included in the card payments total in 2022 were 999.06 million remote payments on the internet (+48.64%) with a total value of €64.29 billion (+120.44% from 2021).

The use of Portuguese cards abroad accounted for 144.84 million payments (+10.10%) with the total value €6.03 billion (+11.46% from 2021), accounting for 6.28% and 5.25% respectively of total card payments.

[\(See Table 13 - Payments with Portuguese Cards\)](#)

Contactless Payments - In 2015, contactless card payments grew by more than 900%, both by number and by value (5.7 million payments, totalling €73.6 million). In 2016, Banco de Portugal noted 18.0 million contactless payments, 1.2% of the total card payments, with a value estimated to €221.4 million. In 2016, the contactless card payments value in the MB Net was 0.5% of the total card payments value (2015:0.2%).

According to the BdP, in 2022, contactless card transactions grew by 58.6% in volume from 2021, while contactless value rose by 65.7%, and represents 48.8% (2021: 24.5%) of total card purchases.

Despite the high penetration of contactless cards and terminals in Portugal, only 24% (23% based on value) were made with contactless with the remainder done by inserting the card in the terminal according to the CPACE survey for 2019. According to the BdP, that share has increased to more than 40% of transactions as of 2021. Portugal has achieved wide adoption of contactless terminals although it has lagged in issuing contactless cards. By 2021, more than 85% of debit cards in Portugal were contactless compared to just 22% in 2013.

Cash withdrawals with Portuguese cards - In 2022, there were 21.85 million cards with a cash function in circulation. There were 346.95 million withdrawals on cards (+8.18%) compared with 2.30 billion payments on all cards. The withdrawals value on cards amounted to €26.91 billion (+6.61% from 2021). The ATV per cash withdrawal on cards was €77.57, and there were 15.9 cash withdrawals per card per year.

[\(See Table 14 - Cash Withdrawals with Portuguese Cards\)](#)

Card Use per Capita

In 2022, card payments per capita amounted to 219.3 (+17.81% vs 2021), up from 171.8 in 2018 (CAGR of 7.04%). Of these payments, there were 185.9 payments on cards with a debit/deferred debit function per capita and 33.4 payments on cards with a credit/delayed debit function. In

addition, there were 33.7 cash withdrawals on cards per capita.

[\(See Table 15 - Card Payments Per Capita in Portugal\)](#)

Debit and/or Deferred Debit Card Use

Banco Portugal aligned its statistical reporting in 2013 to the new ECB standard. It shifted deferred debit cards from credit card reporting to debit card reporting. Thus, figures from 2013 are not comparable with the previous years.

In 2022, there were 20.35 million debit and/or deferred debit functions on debit cards, mostly MB cards with a co-badged deferred debit brand. There were 1.91 billion payments on cards with a debit/deferred debit function (+3.94%) with a total value of €98.68 billion (+8.25% from 2021). The ATV per debit card payment amounted to €51.54, and the Portuguese made on average 94.1 payments per debit card per year.

[\(See Table 16 - Payments with Portuguese Debit Cards\)](#)

Credit and/or Delayed Debit Card Use

Banco Portugal aligned its statistical reporting in 2013 to the new ECB standard. It shifted deferred debit cards from credit card reporting to debit card reporting. Thus, figures from 2013 are not comparable with the previous years.

In 2022, there were 8.65 million credit and/or delayed debit functions on cards, including Unibanco cards with a co-badged international brand. There were 344.28 million payments on cards with a credit/delayed debit function (+292.15%) with a total value of €13.66 billion (+302.77% vs 2021). The ATV per credit card payment accounted for €39.68, and there were on average 39.8 payments per credit card per year.

[\(See Table 17 - Payments with Portuguese Credit/Delayed Debit Cards\)](#)

E-Money Use

In 2022, there were 85.46 million e-money purchases (+22.97%) on 3.70 million cards giving access to e-money accounts (+0.85%) with a total value of €2.19 billion (+25.44% on 2021). The ATV per e-money purchase accounted for €25.60. From 2013, cards with e-money functions include luncheon cards that can only be used in food-related merchant outlets.

[\(See Table 18 - E-Money Use in Portugal\)](#)

Leading Card Issuers in Detail - including digital channels

CGD - issues contactless MB debit cards branded Debit Mastercard or VISA Debit, credit cards

branded Mastercard or VISA, and prepaid cards. In 2022, CGD strengthened our lead in the means of payment area with 4.6 million bank cards. As of 2022, CGD had a 25.8% market share in debit cards in Portugal, surpassing the historic milestone of more than 3 million personal customers with a Caixa debit card. The average daily number of credit card agreements across the year was up 70% and debit cards increased 160,000 over 2019.

Partnerships to facilitate contactless payments and provide customers with enhanced security in the context of the pandemic have also been developed and include Apple Pay and Swatchpay, the latter exclusive to CGD. The acceptance of contactless technology was widespread and more than 1.2 million contactless debit cards were issued in 2020.

CGD has launched several card products, including the Caixa Gold ASJP card, for customers belonging to the Portuguese Judges' Union Association, the Order of Pharmacists card, the Caixa Classic ANET card, for members of the National Association of Engineering Operatives. CGD also has launched the HPP Saúde Card, a co-branded card targeted at customers interested in healthcare area benefits, the Caixa Leisure card through a partnership with the Go4Travel company, the Caixadrive card co-branded with Repsol, and the MTV credit card for the young people's segment.

In the deferred debit segment, CGD launched in 2009 Caixa Activa card for senior citizens. CGD also launched prepaid cards during 2008, including the PRO card for mass-market customers, the LOL card for young customers and LOL Júnior card. CGD continued to promote the LOL and LOL Junior cards, focusing on the launch of a savings function associated with the cards, which transfers amounts not spent by customers during the month into a savings account.

In 2015, CGD's rationalisation/optimisation policy on the portfolio of debit and credit cards for Caixa's individual customers were continued, with an 18 to 7 reduction in the different card models.

In 2017, CGD implemented strong 3D-Secure authentication mechanisms on Mastercard/Maestro and VISA/Electron network cards.

Millennium bcp reported that the number of cards issued in its Portuguese retail segment grew during 2016 to 3.22 million active cards out of 3.46 million cards, up from 2.91 million in 2012. Millennium issues contactless MB cards co-badged Debit Mastercard, VISA Debit, UnionPay Debit, or VISA; contactless credit cards co-badged Mastercard or VISA; and prepaid cards. Its card offering includes American Express, issued under a franchise agreement dating from 1995, renewed in 2005. In 2022, Millennium bcp reported that its card portfolio amounted to 3.2 million cards and increased by nearly 200,000 cards (+6.5%) during the year. The credit card portfolio was said to have remained at 485,000 cards which, with the declining number of credit cards on the market, allowed the bank to increase its market share to 8.38%. The market share for credit card sales amounted to nearly 12%.

In October 2017, Millennium bcp launched its new digital payment solution, the Millennium Move app, which enables the acceptance of payments with cards and MB Way using a smartphone or tablet, with full user mobility.

In November 2018, Millennium bcp signed an agreement with China UnionPay. Under the agreement,

Millennium bcp began issuing UnionPay cards to its customers and rolling out UnionPay QuickPass and online payment services in January 2019. The signing follows a memorandum of understanding agreed by the two organisations in 2017 and enables Millennium bcp to become the first European bank to issue UnionPay cards. With this agreement, Millennium bcp also becomes an acquirer for all UnionPay Cards, irrespective of the country of issuance.

In 2015, the total value of card payments amounted to €13.6 billion, up from €12.4 billion in 2012. Cash withdrawals on cards declined from 5.43 billion to €5.38 billion in 2013. In 2016, the number of payments with debit cards and credit cards went up by 10.6% and 10.5%, respectively while the payments value on credit cards (+4.4%) had a smaller increase against debit cards (10.5%).

In 2017, the number of payments with debit cards and credit cards went up by 8.6% and 8.5%, respectively while the payments value on credit cards (+5.7%) had a smaller increase against debit cards (8.3%).

Millennium bcp's card products include a co-branding arrangement with Portuguese airline TAP whereby customers can have two cards (VISA/Mastercard and American Express) with a single annual fee, credit limit and statement.

Although the bank did not provide an update on card numbers in 2018, it continued to increase its Active Digital Customers base, with a 39% growth in the number of App users, of which 23% already exclusively use the digital channel, 54% of the bank's new Customers in 2018 are digital. In 2018, the bank launched new digital tools, including 100% digital account opening on the Millennium app and login to the bank's website with Mobile Digital key, a secure authentication solution.

As of 2020, Millennium reported that the number of mobile customers had grown by 489,000, of which 216,000 were in Portugal, for a total of 3.21 million, while the number of internet banking customers stood at 2.45 million in 2020.

Banco Santander Totta, issues contactless Debit Mastercard cards, and Mastercard and VISA cards including co-branded cards together with retailers. In February 2011, it launched the exclusive Ferraris Mastercard card, intended for the affluent segment. Other card products are the Maestro student cards. In 2016, Banco Santander Totta reported 2.11 million active cards in circulation, but provided no subsequent update due to the merger with Banco Popular Portugal.

The bank did not provide any subsequent updates on its card numbers but did note that it had substantially upgraded its app functionality, including touch ID or Face ID for login, instant transfers, pension and tax payments, loan and mortgage balances and credit and debit card transaction reviews.

In 2021, with regard to POS terminals, Banco Santander Totta focused on developing and differentiating payment solutions, such as SmartPOS. The promotion and dissemination of the Payment Gateway, which allows the acceptance of cards, payments for services, and MB Way on a single platform, resulted in an increased number of merchants compared to 2020. In the POS Acquiring business, Santander focused, throughout 2022, on making the POS stock profitable,

namely by activating inactive payment terminals and by cancelling others that were not at the merchants' service.

In 2021, with regard to regulatory compliance with PSD2, more than 2 million cards were enabled to carry out strong authentication of online purchases through the Santander app. Banco Santander Totta also provides the Digital Card, which allows customers to carry out operations immediately after being onboarded by the bank. As of 2021, it was possible to open an online bank account in five minutes from home, without any human intervention.

Novo Banco (previously BES Banco Espírito Santo) issues contactless debit cards co-badged VISA Debit; credit cards co-badged VISA; virtual MB cards, and prepaid cards. In 2021, Novo Banco reported 2 million active cards and a 12% market share of Portuguese cards in circulation.

Banco BPI is particularly forthcoming among Portuguese banks on its card portfolios. It issues contactless MB cards co-badged VISA Electron, VISA or Mastercard, and it had 445,100 active credit cards in circulation at end-2018, a 1.4% increase over 2017. Credit card turnover grew by 12.88% to €1,092.5 billion. BPI reported credit card loans of €161.8 million at end-2017, compared with €187.5 million at end-2010.

The number of BPI-issued active debit cards passed one million during 2009 to 1.11 million in 2017. Billings on debit cards were €7.89 billion, up by 9.6% on 2016.

At the end of 2022, BPI had 1.83 million cards in circulation, corresponding to an increase of 3.8% from 2021. This increase was mainly driven by the offer of 'Valor' Accounts, which includes debit and credit cards, and by the increased provision of credit cards with pre-approved limits.

In merchant acquiring, in 2021 BPI launched its own acquiring VISA/Mastercard offer for SMEs, in partnership with Comercia Global Payments, a CaixaBank group company specialised in payments. This new offer allows, through a single contract, BPI POS terminals to accept transactions with most cards circulating in Portugal (including contactless by card or mobile phone) and introduced flexible pricing that automatically adjusts to the monthly turnover level of the business.

In 2022, in partnership with Comercia Global Payments, a specialised company of CaixaBank group, BPI launched the multicurrency acceptance service - Dynamic Currency Conversion (DCC), enriching its own offer of Acquiring Visa / Mastercard. This new functionality, which became available in all BPI Point of Sale (POS) terminals, enabled the acceptance of transactions with foreign cards in the currency of origin.

As of 2022, BPI reported 1,339 ATMs, 30,000 POS terminals in its network.

Unicre issues contactless Unibanco branded credit cards co-badged VISA or Mastercard and contactless credit cards branded Mastercard or VISA. In 2016, Unicre reported 570,000 cards managed of which 270,000 cards were Unibanco credit cards. In 2020, Unicre reported that its card numbers had reached almost 600,000 cards issued.

In 2010, Unicre launched its first pre-paid card and the first gift card for use throughout the entire VISA network in Portugal. The card was a solidarity card created in partnership with UNICEF. Unicre extended the Unibanco Experience loyalty programme developed in 2009 for Unibanco Gold cardholders to the Unibanco Metropolis cardholders. Cardholders could accumulate points providing access to a diverse range of prizes. Encouraging savings habits, Unicre launched the Bonus Money Box concept for all its cardholders, allowing them to “transform the Unibanco card into a 5% bonus money box”. In 2010, Unicre took part in the pre-launch contactless pilot project and launched a contactless Unibanco Go On Mastercard card.

As of 2009, Unicre had 230,000 Unibanco credit cards issued. Until 2007, the number of cards had been declining. However, numbers increased during 2008 to 224,000 cards, passing 230,000 in 2009. The value of transactions on Unibanco cards was approximately €500 million in 2008, though it fell during 2009.

bancoCTT issues contactless VISA Debit cards and contactless Mastercard credit cards (2017: 49,454, 2016: 8,285), the latter in cooperation with Cetelem (F). g.

In December 2018, around 40% of Customers were active users of the bank’s Digital Channel. The mobile channel grew considerably and now represents 76% of total digital channel access for Banco CTT. Close to 45% of Banco CTT’s transfers, payments and term deposits are carried out through digital channels and, in the case of term deposits, this figure reaches 70%.

In 2020, around half of the bank’s customers were frequent users of the digital solutions, including the MB WAY service. Use through mobile devices is increasingly significant, representing 85% of customer interactions. Half of the transfers and payments of the bank’s customers were carried out by digital channels.

BarclayCard, the biggest European issuer of revolving credit cards, had issued VISA Classic, VISA Gold, VISA Platinum credit cards and VISA Electron MB cards in Portugal. Barclaycard began issuing in Portugal in 2004; parent Barclays has a network of branches in the country. In September 2009, Barclays announced the acquisition of Citibank’s Portuguese credit card business. The transaction gave Barclays 400,000 credit card accounts and gross assets (mostly credit card receivables) of €644 million as at June 2009. Barclays Portugal’s ambition had been to become one of the top five players in the Portuguese cards sector. However, in April 2016, Barclays Bank (UK) sold its BarclayCard consumer payments business in Portugal to bancopopular-e, a Spanish online bank rebranded as WiZink Bank.

Consumer Finance Credit Card Issuers

Banco Credibom – Portugal has become an important market for Crédit Agricole Consumer Finance, whose 100% subsidiary Credibom is the leader in POS financing for the automotive and house equipment markets. Outstanding loans were more than €1.3 billion at end-2009.

In 2009, new Credibom services included a range of financing solutions designed for Apple and a partnership agreement with Ixina, one of the largest European manufacturers of kitchens, present since September 2009 in Portugal.

In 2007, Credibom received the necessary authorisations for bank status, creating the opportunity to launch new commercial offers, including bank cards. Credibom launched its first general credit card, Cartão Credibom, in July 2008. The card was a VISA card with cardholders offered various promotions and discounts by partners.

In July 2005, Sofinco (now: Crédit Agricole Consumer Finance) expanded the size of its Portuguese operations with the purchase of Credilar, the non-auto POS consumer credit business previously carried out by Millennium bcp subsidiary CrédiBanco. Millennium bcp has reduced or sold its stakes in CrédiBanco and auto finance specialist Interbanco (to Santander Consumer Finance) as part of a divestment of consumer credit business carried out through non-banking channels.

Cetelem Portugal – In May 2008, LaSer Cofinoga and Cetelem (BNP Paribas Personal Finance) announced a reorganization of their business activities in Portugal by merging their subsidiaries. Cetelem Portugal acquired Credifin to create what Cetelem claimed was the No 1 player in the market. The merged company operated through all the main distribution channels – POS (retail and automobile), direct-to-customer and on-line credit. The sale by LaSer Cofinoga of its Portuguese businesses to BNP Paribas Personal Finance was completed in May 2009. As of late 2010, Cetelem was offering three Mastercard MB credit cards in Portugal under the brandings of 'White', 'Green', and 'Black'.

Oney Portugal, 100%-owned by Banque Accord, Auchan's banking subsidiary, was part owned by Cofinoga until 2005. Previously called Crediplus, Oney Portugal was a major player in the private card sector in Portugal. In July 2006, Crediplus was granted a bank license. During 2007, the Banque Accord branch business was incorporated in Portugal while the number of Crediplus customers passed 500,000. By 2009, the number of customers of Oney Portugal had reached 591,000.

Société Générale, which lost out to Banco Santander in the competition for BCP's 50.001% holding in auto finance company Interbanco, announced in July 2006 the launch of CrediAgora, a new Portuguese subsidiary specializing in consumer finance. SocGen said CrediAgora would offer products in the car financing and retailing sectors. In November 2007, SocGen selected First Data to provide issuing card processing services to support credit card programmes launched by CrediAgora in Portugal. First Data provided services to SocGen's consumer finance businesses in Greece, Poland, Romania, and Russia.

As of 2009, Portugal accounted for 2% of Santander Consumer Finance's loan book. Portugal is one of the markets in which SCF issues credit cards, though its main business is auto finance.

APPENDIX

APPENDIX

Significant Events in Portuguese Banking - source: Yearbooks research

December 2018	Lone Star (US) provides €1 billion capital to Novo Banco
December 2018	Caixabank acquired a 15.5% stake of Banco BPI and now owns 100%.
June 2017	BancoBIC became rebranded as EuroBIC.
June 2017	Banco Santander Totta acquired 100% of the Portuguese subsidiary of Banco Popular Español and absorbed it by end-2018.
February 2017	CaixaBank (E) paid €644.5 million to raise its stake in Banco BPI (P) to 84.5% from 45%.
April 2016	Barclays Bank (UK) sold its unit BarclayCard in Portugal and Spain to bancopopular-e, a Spanish online bank rebranded WiZink Bank in May 2016.
April 2016	Barclays Bank sold its retail banking business in Portugal to Bankinter (E).
December 2015	The Portuguese state sold Banco Internacional do Funchal (BANIF) to Banco Santander Totta, excluding the Toxic Bank part, Oitante.
August 2014	Banco Espirito Santo (BES) became state-owned, after reporting €3.6 billion in losses. BES was rebranded as Novo Banco.
March 2012	BancoBIC from Angola acquires Banco Portugues de Negocios (BPN) from the Portuguese state for €40 million, including acquirer BPN net Pay.
March-May 2009	European Commission approves Portuguese bank recapitalization scheme and state guarantee for €450 million loan to Banco Privado Português.
November 2008	Banco Portugues de Negocios (BPN) becomes state-owned.
November 2007	Negotiations between Banco BPI and Millennium bcp concluded without agreement.
October 2007	Banco BPI presents merger proposal to Millennium bcp.
May 2007	Millennium bcp's hostile €4.3 billion bid for BPI fails.
July 2006	Société Générale announces launch of CrediAgora, its new Portuguese consumer finance subsidiary.

March 2006	Millennium bcp launches hostile €4.3 billion bid for BPI.
December 2005	Cofinoga sells partner Banque Accord its 49% holding in Crediplus, their Portuguese consumer finance joint venture.
January 2005	BCP sells to Crédit Agricole's consumer finance subsidiary Sofinco the non-auto POS consumer credit business previously carried out by BCP's CrédiBanco.
June 2004	BES sells remaining stake in Credibom to Banque Sofinco, giving the French company full ownership.
July 2003	Banco Espírito Santo (BES) announces sale of 45% of Credibom to Sofinco, increasing the stake of the Crédit Agricole subsidiary to 85%.
April 2000	BCP acquires BPSM. BCP also acquires Banco Mello and Companhia de Seguros Império during 2000.
March 2000	BES and BPI merger plans collapse.
2000	BCP acquires BPSM from Mundial Confiança. BCP also acquires Banco Mello and Companhia de Seguros Império.
January 2000	Banco Espírito Santo (BES) and Banco Português de Investimento (BPI) agree to merge, forming BES.BPI.
November 1999	Break-up of Champalimaud group agreed. Santander acquires BTA and CPP. Caixa Geral de Depósitos (CGD) acquires Mundial Confiança. BCP acquires BPSM.

1 - MAIN PORTUGUESE BANKS END-2022

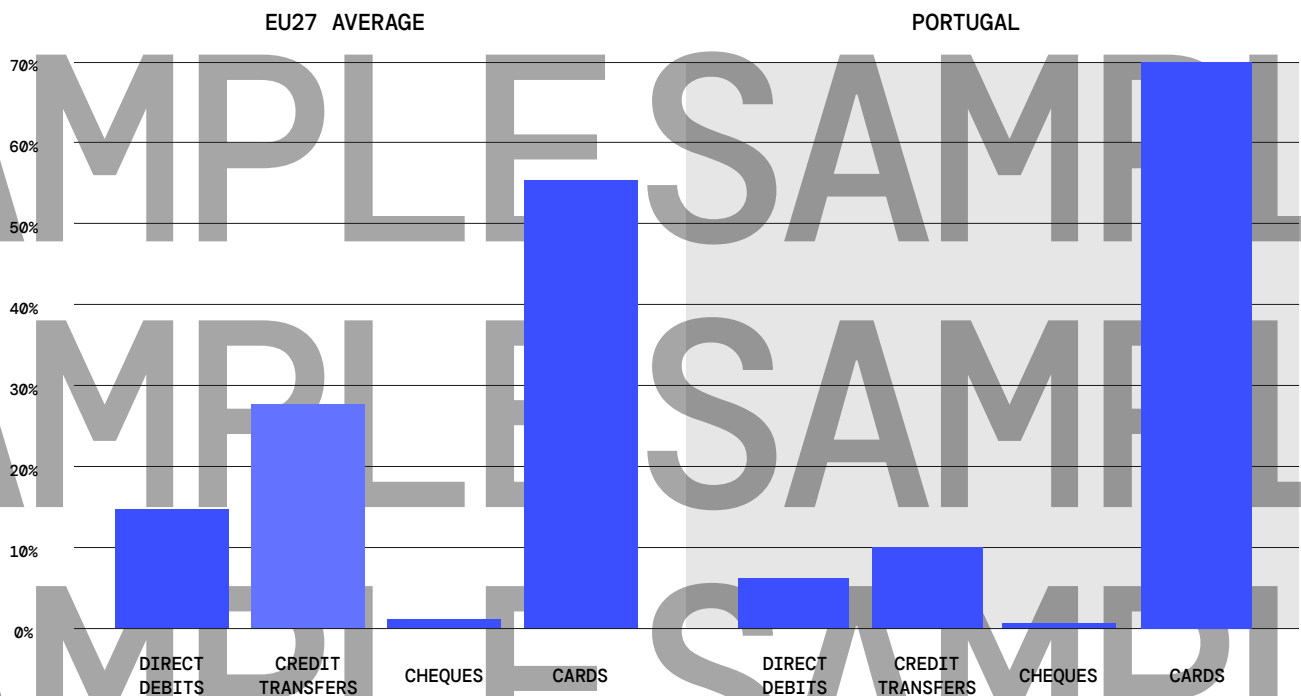
BANK	OWNERSHIP	NET ASSETS (€BN)	MARKET SHARE	BRANCHES
Caixa Geral de Depositos (CGD)	State-owned	102.5	23.2%	521
Millennium bcp	Individuals: 26.08%, investors: 73.92%	89.9	20.3%	408
Banco Santander Totta	Banco Santander Group (E)	55.8	12.6%	351
Novo Banco	Nani Holdings: 75%, Resolution fund: 19.31%, State: 5.69%	46.0	10.4%	292
Banco BPI	2017: CaixaBank (E): 100%	38.9	8.8%	278
Caixa Central de Crédito Agrícola Mútuo (CCCAM)	Mutual savings bank	24.1	5.5%	617
Caixa Económica Montepio Geral (CEMG)	Mutual savings bank	17.7	4.0%	246
BBVA	BBVA (Portugal) Group	3.7	0.8%	12
other banks		64.0	14.5%	637
Totals		442.5	100.0%	3,362

Note: other banks include Portuguese branches of foreign bank groups including Bankinter (E), Deutsche Bank (D), Banco CTT, and Angolan-owned Banco BIC.

Note: branch figures are branches in Portugal only.

Source: individual bank reports, PCM research.

OVERVIEW OF CASHLESS PAYMENTS 2022



2 - CASHLESS PAYMENT TRANSACTIONS IN PORTUGAL

(millions)	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Card payments	1,839.4	1,823.4	1,707.1	1,999.5	2,391.7	2,569.3	19.61%	7.43%
Cheques issued	48.0	42.0	31.8	26.6	14.7	13.0	-44.65%	-22.83%
Credit transfers	304.5	322.3	331.2	357.4	353.0	367.6	-1.23%	4.12%
- thereof SEPA credit transfers	291.5	310.2	319.3	347.0	342.7	358.2	-1.26%	4.54%
Direct debits	244.2	244.7	228.7	235.9	258.5	283.3	9.59%	-0.25%
Total	2,510.9	2,499.4	2,353.0	2,674.9	3,441.5	3,233.2	28.66%	7.91%
Total card payments per capita	178.9	177.3	165.8	194.3	232.2	249.5	19.53%	7.43%
Total cheques issued per capita	4.7	4.1	3.1	2.6	1.4	1.3	-44.68%	-22.83%
Total credit transfers per capita	29.6	31.3	32.2	34.7	34.3	35.7	-1.29%	4.13%
Total direct debits per capita	23.7	23.8	22.2	22.9	25.1	27.5	9.51%	-0.25%
Total cashless payments per capita	244.2	243.0	228.5	259.9	334.2	313.9	28.57%	7.91%

Note: book-entry transactions are not included in credit transfer and direct debit figures; totals include "other payments instruments" and so are more than the sum of the categories listed.

Source: ECB, Banco de Portugal.

3 - REDUNICRE ACCEPTANCE NETWORK

	2018	2019	2020	2021	2022	GR 21/22	CAGR 5Y
Acquired POS (000s)	96.0	100.0	100.0	100.0	100.0	0.00%	0.00%
Acquired merchants (000s)	74.0	79.5	87.5	90.0	90.0	0.00%	5.77%
Value of acquired transactions (€bn)	18.0	20.0	18.0	24.0	27.0	12.50%	9.82%
Number of acquired transactions (m)	490.0	539.0	479.8	600.0	600.0	0.00%	6.55%
ATV per transaction	€36.73	€37.11	€37.43	€40.00	€45.00	12.50%	3.08%

Note: in 2020 Unicre changed its brand name to Redunicre.

Source: Unicre.

4 - LEADING CARD ISSUERS IN PORTUGAL

DOMESTIC ISSUERS	ISSUED CARD BRANDS	OWNED BY
Caixa Geral de Depósitos (CGD)		State-owned
Millennium bpc		Individuals: 26.08%, investors: 73.92%
Novo Banco		Nani Holdings: 75%, Resolution fund: 19.31%, State: 5.69%
Banco BPI		2018: CaixaBank (E): 100%
Banco Santander Totta		Banco Santander Group (E)
Crédito Agrícola Mútuo		Mutual bank sector
CEMG Montepio		Mutual bank sector
Wizink Bank		Wizink Bank (E)
BBVA		BBVA Group (E)
BancoBIC		BancoBIC Group (Angola)
bancoCTT		CTT Group
Unicre		12 Portuguese banks
American Express		American Express (US)
other issuer banks		various
CONSUMER FINANCE ISSUERS	ISSUED CARD BRANDS	OWNED BY
Banco Credibom		Credit Agricole CF (F)
Cetelem Portugal		BNP Paribas PF (F)

Note: In 2016, Banco Santander Totta absorbed the former state-owned bank BANIF.

Source: Portuguese Banks

5 - LEADING ACQUIRERS IN PORTUGAL

DOMESTIC ACQUIRERS	ACCEPTANCE BRANDS OFFERED	OWNED BY
Portuguese banks		various
Unicre		12 Portuguese banks
CGD netcaixa		Caixa Geral de Depósitos (CGD)
Millennium bpc		Individuals: 26.08%, investors: 73.92%
Novo Banco		Nani Holdings: 75%, Resolution fund: 19.31%, State: 5.69%
Banco BPI		2018: CaixaBank (E): 100%
EuroBIC (Net Pay)		BancoBIC Group (Angola)
non-banks	private label cards, fleet cards	various

6 - ATMS AND CASH WITHDRAWALS IN PORTUGAL

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
ATM Terminals with cash function	13,249	13,510	13,692	13,202	13,088	12,998	-0.86%	-0.69%
- thereof active MB ATMs (SIBS)	11,570	11,646	11,712	11,500	12,000	12,036	4.35%	0.30%
Ø Number of TXs per ATM per month	2,917.8	2,863.7	2,202.5	2,269.2	2,485.5	2,718.4	9.53%	-2.65%
Number of ATM cash withdrawals (m)	463.90	464.26	361.88	359.50	390.36	423.98	8.59%	-3.32%
- on domestic cards (m)	448.35	404.84	318.59	316.13	341.21	368.28	7.93%	-5.24%
- on foreign cards (m)	15.55	59.42	43.29	43.37	49.15	55.71	13.34%	25.80%
Value of ATM cash withdrawals (€bn)	32.74	33.15	27.99	28.54	30.67	31.83	7.48%	-0.97%
- on domestic cards (€bn)	30.89	28.28	24.29	24.70	26.26	26.75	6.30%	-2.83%
- on foreign cards (€bn)	1.85	4.87	3.70	3.84	4.42	5.08	15.06%	18.43%
ATV per ATM withdrawal	€70.57	€71.41	€77.35	€79.39	€78.58	€75.08	-1.02%	2.43%
# ATM Terminals per 1m capita - Portugal	1,288.3	1,313.4	1,329.7	1,282.7	1,270.8	1,262.0	-0.93%	-0.69%
# ATM Terminals per 1m capita - EU27 total	875.8	861.2	685.3	678.8	642.2	601.5	-5.38%	-6.34%

Note: most ATMs are part of the Multibanco ATM network; other ATMs operated by banks in-house.

Source: ECB, Banco de Portugal, SIBS.

7 - SUMMARY OF SIBS ATM SERVICES

	2018	2019	2020	2021	2022	GR 21/22	CAGR 5Y
Active ATMs	11,570	11,646	11,712	11,500	12,000	4.35%	0.30%
Cash withdrawals on cards (m)	437.0	441.2	162.9	192.0	192.0	0.00%	-15.02%
Other ATM service transactions (m)	464.8	447.7	196.2	204.0	204.0	0.00%	-15.62%
Total ATM service transactions (m)	901.8	888.8	359.1	396.0	396.0	0.00%	-15.33%
Total value of all ATM services (€bn)	69.0	73.2	31.7	40.0	40.0	0.00%	-9.26%
Withdrawals in % of all SIBS ATM TXs	48.45%	49.63%	45.37%	48.48%	48.48%	0.00%	0.37%

Note: in addition to withdrawals and information enquiries, various other services can be carried out at Multibanco ATMs, including payment for goods and services purchased from companies that provide their clients with the necessary information to carry out the respective payments at a Multibanco ATM, some payments to the state/public sector, purchase of some rail tickets and other transport transactions, mobile phone top-ups, payment of some commercial and trade bills.

Source: SIBS.

8 - POS TERMINALS IN PORTUGAL

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
POS terminals	349,484	329,478	355,062	389,477	407,927	427,773	4.74%	4.87%
- thereof MB terminals located in Portugal and abroad	344,207	362,321	373,094	379,000	384,685	390,455	1.50%	3.94%
Ø Number of TXs per POS per month	297.6	339.3	283.5	295.0	320.4	331.6	8.62%	1.55%
Number of POS payments (m)	1,248.10	1,341.42	1,207.93	1,378.83	1,568.60	1,702.12	13.76%	6.49%
- on domestic cards (m)	1,168.90	1,132.52	1,056.01	1,187.71	1,259.39	1,297.40	6.04%	3.10%
- on foreign cards (m)	79.19	208.90	151.92	191.13	309.20	404.72	61.78%	36.78%
Value of POS payments (€bn)	66.41	68.33	62.51	71.01	60.10	57.52	-15.38%	-0.27%
- on domestic cards (€bn)	61.73	58.92	56.08	62.93	47.84	42.11	-23.98%	-3.35%
- on foreign cards (€bn)	4.68	9.41	6.43	8.09	12.25	15.41	51.57%	23.95%
ATV per POS payment	€53.21	€50.94	€51.75	€51.50	€38.31	€33.79	-25.61%	-6.35%
# POS Terminals per 1m capita - Portugal	33,983.9	32,030.8	34,481.7	37,842.7	39,608.8	41,535.8	4.67%	4.87%
# POS Terminals per 1m capita - EU27 total	27,734.0	30,100.3	31,503.7	34,817.0	44,815.5	50,565.1	28.72%	12.83%

Note: In its MB network, SIBS operates POS terminals located abroad.

Source: ECB, Banco de Portugal, SIBS.

9 - SIBS MB NET OPERATIONS

(MILLIONS)	2017	2018	2019	2020	2021	GR 20/21	CAGR 5Y
All transactions at MB ATMs	901.8	888.8	359.1	396.0	396.0	0.00%	-15.33%
All transactions at MB POS terminals	1,058.6	1,170.0	1,290.7	514.9	725.0	40.80%	-5.44%
Baixo Valor: low value operations	433.6	463.2	495.8	300.9	245.6	-18.38%	-9.32%
Homebanking and other operations	253.5	273.8	308.7	367.9	380.0	3.29%	13.28%
Total MB NET operations	2,647.5	2,795.8	2,454.3	1,579.7	1,746.6	10.56%	-6.72%

Note: low value operations are tolls on cards at Via Verde, car parks and public phones; other operations include MB Net, MB PHONE, AmExp, host-to-host, homebanking, and others.

Source: SIBS.

10 - INTERNET USE IN PORTUGAL

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Households with internet access	79%	81%	84%	87%	88%	89%	1.32%	2.74%
Last internet use (individuals, 12 months)	75%	76%	79%	83%	85%	85%	2.41%	2.53%
Internet users who bought online	49%	51%	56%	62%	63%	62%	1.44%	6.78%
Last online purchase (individuals, 12 month)	37%	39%	44%	52%	54%	53%	3.88%	9.49%
Last online purchase (individuals, 3 month)	27%	28%	35%	40%	43%	43%	7.50%	11.46%
Mobile phone subscriptions per 100 population	115.3%	115.7%	115.1%	120.9%	124.5%	126.7%	2.98%	1.76%
B2C e-commerce revenue (€bn)	5.10	6.00	6.99	7.64	8.21	8.82	7.46%	11.06%
Annual B2C eCommerce growth rate/year	4.9%	17.6%	16.5%	9.3%	7.5%	7.4%	-	-
Ø B2C e-Commerce amount per capita	€495.9	€583.3	€678.8	€742.3	€797.2	€856.4	7.39%	11.06%
Ø B2C e-Commerce amount per online buyer	€1,005.3	€1,136.7	€1,218.8	€1,196.4	€1,266.5	€1,373.5	5.87%	4.00%

Sources: Eurostat, ITU.

11 - CARDS ISSUED IN PORTUGAL

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Cards with a cash function	21,430,550	21,474,421	20,796,394	20,792,399	21,859,450	20,737,639	5.13%	1.03%
Cards with a payment function	21,653,123	20,378,147	21,903,019	21,177,814	21,834,734	21,968,925	3.10%	0.61%
- thereof with debit and/or deferred debit function	19,806,398	18,973,862	20,785,239	19,897,450	20,352,155	20,589,272	2.29%	1.17%
- thereof with credit and/or delayed debit function	8,462,881	7,735,014	7,952,855	7,447,990	8,653,013	8,731,560	16.18%	0.91%
Cards with an e-money function	3,357,244	3,633,046	3,510,641	3,670,422	3,670,422	3,670,422	0.00%	5.30%
Total cards	23,619,433	22,539,919	23,932,207	23,346,878	24,029,182	24,264,791	2.92%	0.98%
- thereof MB cards	19,600,000	20,000,000	23,700,000	23,100,000	23,100,000	23,376,177	0.00%	3.99%
Payment cards per capita - Portugal	2.30	2.19	2.32	2.27	2.33	2.36	2.85%	0.98%
Payment cards per capita - EU27 total	1.49	1.56	1.66	1.72	1.78	1.85	3.44%	4.18%

Note: most Portuguese cards are MB debit cards co-badged with an international debit or credit functions.

Note: from 2013, debit card numbers include deferred debit cards. Portuguese cards can have two payment functions on one card.

Note: In 2019 the number of cards decreased mainly due to the fact that a relevant card issuer ceased to be Portuguese, however, cards of that issuer continue to be processed in the MB network as operated by SIBS.

Source: ECB, Banco de Portugal, SIBS.

12 - CARD FRAUD LOSSES ON PORTUGUESE CARDS

(€M)	2018	2019	2020	2021	2022	GR 21/22	CAGR 5Y
Counterfeit cards	0.5	0.4	0.4	0.3	0.2	-20.00%	-27.52%
Card lost or stolen fraud	0.3	0.2	0.2	0.2	0.3	42.50%	-6.55%
ID fraud	0.0	0.0	0.0	0.0	0.0	-	-
Card not present fraud	5.8	6.3	8.0	9.4	9.9	5.00%	12.00%
other losses	0.0	0.0	0.0	0.0	0.0	-	-
Value of card fraud losses	6.6	6.9	8.6	9.9	10.4	5.00%	7.62%
Counterfeit fraud in %	7.6%	5.8%	4.7%	3.0%	2.3%	-23.81%	-32.65%
Card lost or stolen fraud in %	4.5%	2.9%	2.3%	2.0%	2.7%	35.71%	-13.17%
CNP fraud in %	87.9%	91.3%	93.0%	94.9%	94.9%	0.00%	4.07%

Source: FICO, Euromonitor International.

13 - PAYMENTS WITH PORTUGUESE CARDS

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Cards with a payment function	21,653,123	20,378,147	21,903,019	21,177,814	21,834,734	21,968,925	3.10%	0.61%
Ø payments per card per year	81.6	85.3	74.8	91.1	105.6	110.1	15.89%	6.82%
Ø payment value per card per year	€3,967.0	€4,011.6	€3,696.0	€4,464.5	€5,259.0	€6,240.0	17.80%	7.61%
Payments (m)	1,767.13	1,737.86	1,639.03	1,930.03	2,306.19	2,418.99	19.49%	7.48%
- thereof remote payments (m)	560.11	565.14	536.35	672.11	999.06	1,148.85	48.64%	14.99%
- thereof POS payments (m)	1,207.02	1,172.73	1,102.68	1,257.92	1,307.13	1,270.15	3.91%	3.30%
- thereof cross-border payments (m)	83.82	94.94	114.69	131.56	144.84	152.16	10.10%	18.40%
- on debit and/or deferred debit cards (m)	1,679.67	1,653.63	1,568.14	1,842.24	1,914.76	1,952.45	3.94%	4.55%
- on credit and/or delayed debit cards (m)	87.46	84.24	70.89	87.79	344.28	466.54	292.15%	35.51%
Value of payments (€bn)	85.90	81.75	80.95	94.55	114.83	137.09	21.45%	8.27%
- thereof remote payments (€bn)	22.45	21.02	23.01	29.16	64.29	82.07	120.44%	27.65%
- thereof POS payments (€bn)	63.45	60.72	57.94	65.38	50.54	55.02	-22.70%	-2.79%
- thereof cross-border payments (€bn)	4.00	4.37	4.61	5.41	6.03	6.37	11.46%	13.01%
- on debit and/or deferred debit cards (€bn)	82.11	78.37	78.04	91.16	98.68	102.75	8.25%	6.03%
- on credit and/or delayed debit cards (€bn)	3.78	3.38	2.91	3.39	13.66	34.34	302.77%	30.94%
ATV per card payment	€48.61	€47.04	€49.39	€48.99	€49.79	€56.67	1.64%	0.74%

Source: ECB, Banco de Portugal.

14 - CASH WITHDRAWALS WITH PORTUGUESE CARDS

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Cards with a cash function	21,430,550	21,474,421	20,796,394	20,792,399	21,859,450	20,737,639	5.13%	1.03%
Ø withdrawals per card per year	21.4	19.2	15.5	15.4	15.9	18.1	2.90%	-6.26%
Ø Total cash withdrawals value per card per year	€1,484.7	€1,354.4	€1,191.7	€1,214.0	€1,231.1	€1,325.0	1.41%	-3.91%
Number of cash withdrawals (m)	457.56	412.46	322.75	320.72	346.95	374.74	8.18%	-5.30%
- thereof withdrawals domestic (m)	448.35	404.84	318.59	316.13	341.21	368.28	7.93%	-5.24%
- thereof withdrawals abroad (m)	9.20	7.61	4.16	4.60	5.74	6.46	24.93%	-8.52%
Value of ATM cash withdrawals (€bn)	31.82	29.08	24.78	25.24	26.91	27.48	6.61%	-2.92%
- thereof values domestic (€bn)	30.89	28.28	24.29	24.70	26.26	26.75	6.30%	-2.83%
- thereof values abroad (€bn)	0.93	0.80	0.49	0.54	0.65	0.72	20.92%	-6.18%
ATV per cash withdrawal on cards	€69.54	€70.51	€76.79	€78.71	€77.57	€73.32	-1.45%	2.51%
Total cash withdrawals per capita	44.5	40.1	31.3	31.2	33.7	36.4	8.10%	-5.30%
Total cash withdrawals value per capita	€3,094.1	€2,827.5	€2,406.7	€2,452.7	€2,613.1	€2,667.9	6.54%	-2.92%

Source: ECB, Banco de Portugal.

15 - CARD PAYMENTS PER CAPITA IN PORTUGAL

	2018	2019	2020	2021	2022	GR 21/22	CAGR 5Y
Debit and/or deferred debit card payments per capita	163.3	160.8	152.3	179.0	185.9	3.87%	4.55%
Debit and/or deferred debit card value per capita	€7,984.7	€7,619.1	€7,579.3	€8,857.0	€9,581.3	8.18%	6.03%
Credit and/or delayed debit card payments per capita	8.5	8.2	6.9	8.5	33.4	291.89%	35.52%
Credit and/or delayed debit card value per capita	€368.0	€328.2	€282.5	€329.5	€1,326.3	302.50%	30.94%
Total card payments per capita	171.8	168.9	159.2	187.5	219.3	16.97%	7.04%
Total card value per capita	€8,352.7	€7,947.3	€7,861.7	€9,186.6	€10,907.7	18.74%	7.80%

Source: ECB, Banco de Portugal.

16 - PAYMENTS WITH PORTUGUESE DEBIT CARDS

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Cards with debit and/or deferred debit function	19,806,398	18,973,862	20,785,239	19,897,450	20,352,155	20,589,272	2.29%	1.17%
Ø payments per debit card per year	84.8	87.2	75.4	92.6	94.1	94.8	1.61%	3.35%
Ø payments value per debit card per year	€4,145.8	€4,130.5	€3,754.8	€4,581.3	€4,848.5	€4,990.4	5.83%	4.81%
Payments (m)	1,679.67	1,653.63	1,568.14	1,842.24	1,914.76	1,952.45	3.94%	4.55%
Value of payments (€bn)	82.11	78.37	78.04	91.16	98.68	102.75	8.25%	6.03%
ATV per debit card payment	€48.89	€47.39	€49.77	€49.48	€51.54	€52.63	4.15%	1.42%

Source: ECB, Banco de Portugal.

17 - PAYMENTS WITH PORTUGUESE CREDIT/DELAYED DEBIT CARDS

	2018	2019	2020	2021	2022	2023F	GR 21/22	CAGR 5Y
Cards with credit and/or delayed debit function	8,462,881	7,735,014	7,952,855	7,447,990	8,653,013	8,731,560	16.18%	0.91%
Ø payments per credit/delayed debit card per year	10.3	10.9	8.9	11.8	39.8	53.4	237.54%	34.29%
Ø payments value per cc/dd card per year	€447.2	€436.5	€365.7	€455.4	€1,578.6	€3,932.7	246.68%	29.76%
Payments (m)	87.46	84.24	70.89	87.79	344.28	466.54	292.15%	35.51%
Value of payments (€bn)	3.78	3.38	2.91	3.39	13.66	34.34	302.77%	30.94%
ATV per credit/delayed debit card payment	€43.28	€40.08	€41.03	€38.63	€39.68	€73.60	2.71%	-3.38%

Source: ECB, Banco de Portugal.

18 - E-MONEY USE IN PORTUGAL

	2018	2019	2020	2021	2022	GR 21/22	CAGR 5Y
E-money institutions	1	1	2	2	4	100.00%	na
Outstanding values on e-money accounts (m)	115.0	135.0	156.0	173.0	181.7	5.00%	12.46%
Cards giving access to e-money accounts	3,357,244	3,633,046	3,510,641	3,670,422	3,701,642	0.85%	5.48%
- thereof cards loaded at least once	1,912,053	2,106,377	1,985,034	2,134,430	2,198,463	3.00%	5.83%
E-money accepting terminals	363,632	343,828	369,363	403,203	421,444	4.52%	4.63%
Payments on cards accessing e-money accounts (m)	72.27	85.54	68.07	69.50	85.46	22.97%	6.13%
Payments value on cards accessing e-money accounts (€ bn)	1.24	1.67	1.61	1.74	2.19	25.44%	15.13%
ATV per e-money payment	€17.13	€19.57	€23.69	€25.09	€25.60	2.01%	8.47%

Note: from 2013, cards with e-money function include prepaid cards that can only be used in food-related merchant outlets.

Source: ECB, Banco de Portugal.



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