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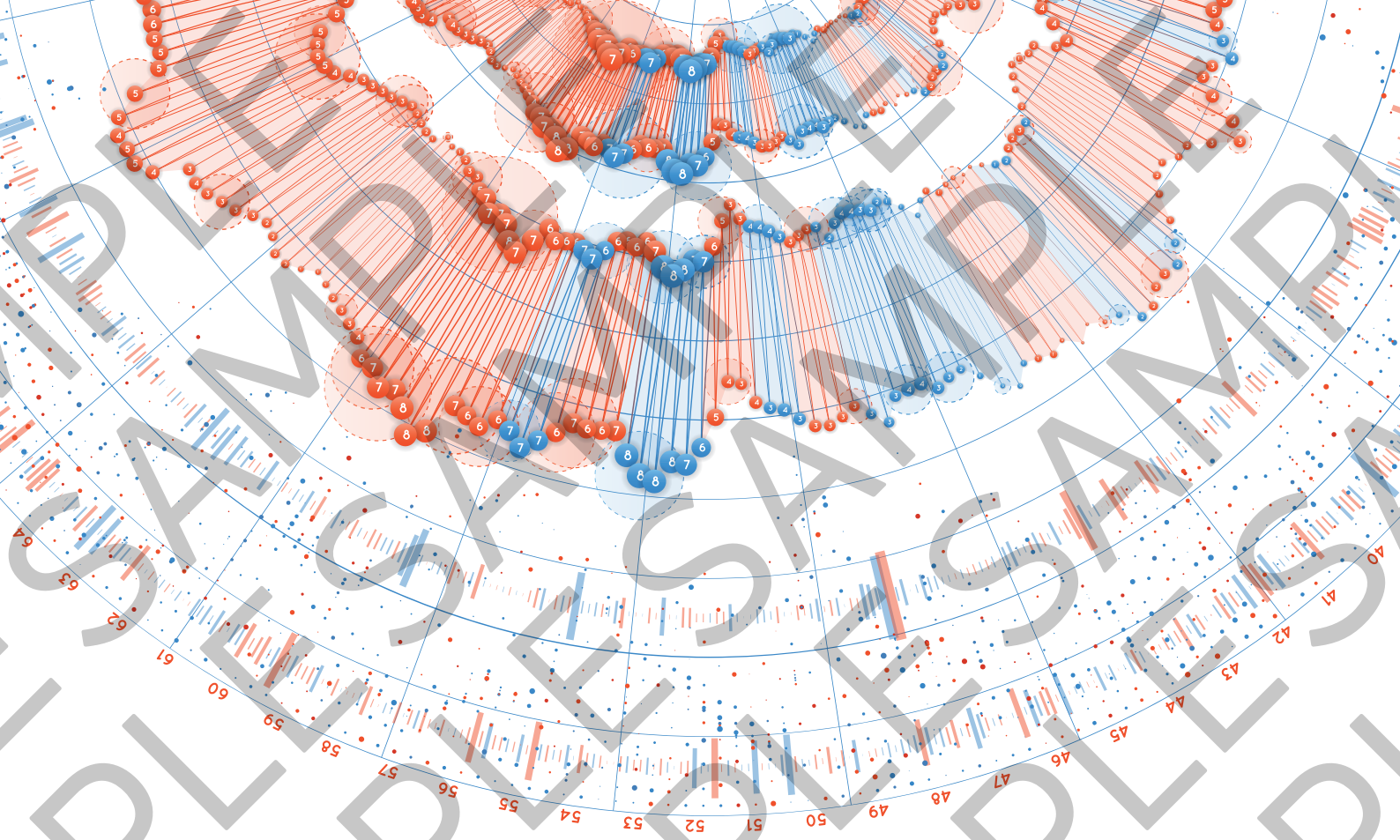
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*Statistical Report 2019-2020*

## **34 Portugal**





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Version 1.2

### Acknowledgments

The report draws on statistics and information from the European Central Bank (ECB), the Bank of International Settlement (BIS), the national central banks (NCBs), domestic payment organisations and commercial, cooperative and savings banks. E-commerce and m-commerce figures reported draw on statistics and information from Eurostat, NCBs and retailer associations. The editors thank all those individuals and organisations who have kindly supplied information and statistics.

# Market Overview

## Payment Organisations

SIBS – interbank organization, manages the Multibanco networks

Unicre – interbank organization, main acquirer, Unibanco issuer.

## Domestic Card Brand

Multibanco (MB) cards, co-badged Maestro, Electron, Mastercard or VISA, MB Way wallet.

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 3.86-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 55.4% of the total bank assets.

In 2017, Banco Santander Totta absorbed Banco Popular.

Emerging Open Banking ecosystem.

## Notable Market Trends

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

## Major Issuers

Caixa Geral de Depósitos, Millennium bcp, Banco Espírito Santo, Banco BPI, Banco Santander Totta.

## Major Acquirers

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

## Major Processors

SIBS FPS, bank IT in-house; First Data

## Consumer Finance

Outstanding consumer credit of €11.45 billion; €1,112 per capita.

# Key Statistics 2018

## Population

10.28 million, with 2.30 cards per capita

## Card Functions

Cards with debit and/or deferred debit function: 19.81 million

Cards with credit and/or delayed debit function: 8.46 million

Total cards: 23.62 million.

## Card Payments

Debit and/or deferred debit: 1.68 billion; value €82.1 billion;

Credit and/or delayed debit: 87.46 million; value €3.78 billion;

Total: 1.77 billion; value €85.88 billion.

## POS

348,000, of which 344,207 were MB Net terminals

## POS Payments

All cards: 1.25 billion; value €63.41 billion.

## ATMs

13,249, of which 11,570 were MB Net ATMs.

## ATM Transactions

All cards 463.9 million; value €32.74 billion.

## 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 mid-2019, 114 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 2018, Portuguese GDP grew by 2.4% (2017: 2.7%, 2016: 1.4%, 2015: 1.6%).

### Structure

According to BDP, in Q1 2019, there were 32 commercial banks, four savings banks, 86 mutual rural credit institutions and numerous other credit institutions operating in Portugal. In addition, there were also 20 branches of foreign banks and 10 representative offices in the country.

The three largest banks are Caixa Geral de Depósitos (CGD), Millennium bcp and Novo Banco (previously Banco Espírito Santo) all have domestic owners. They controlled 55.4% of the banking sector's total assets in 2018 while the five largest banks controlled 77.4%.

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 657 branches, CEMG Montepio (324 branches), and Spanish Bankinter (81 branches in 2017). 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 4,054 bank branches (Q1 2019) 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). Since their peak in June 2016, NPL have decreased by €26 billion. In that period, the NPL ratio decreased by 9 bp to 8.9% and the impairment coverage ratio increased by 9 bp to 52.2%.

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-2018)*

**Caixa Geral de Depósitos (CGD)**, state-owned, had a market share of 24.5% by total bank assets. In 2018, CGD reported 573 branches serving 3.8 million customers in Portugal, or 37% of the population. The bank also claims 1.58 million internet customers and 273,000 mobile banking customers. The CGD Group is present, either through Branches, Representative Offices or direct equity interests in local financial institutions, in 22 countries embracing four continents. CGD Group's branch office network comprised of 1,068 retail branches in Portugal (522) and abroad (546).

**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 2018, Millennium bcp's shareholder structure was composed of individuals: 23% and institutional investors: 87%. By region, it was composed of Portuguese interests: 30%, Chinese interests: 27.1%, African interests: 19.6%, US and UK 10.8% and other regions: 11.6%.



## 1 - Main Portuguese Banks end-2018

| Bank  | OWNERSHIP                                       | NET ASSETS (€BN) | MARKET SHARE | BRANCHES | ATMS   |
|---|---|------------------|--------------|----------|--------|
| Caixa Geral de Depositos (CGD)                  | State-owned                                     | 89.1             | 23.2%        | 573      | 3,023  |
| Millennium bcp                                  | Portuguese interests: 22.12%, investors: 87.88% | 75.9             | 19.7%        | 546      | 1,949  |
| Banco Santander Totta                           | Banco Santander Group (E)                       | 52.8             | 13.7%        | 572      | 2,398  |
| Novo Banco                                      | 2017: Lone Star Funds (US): 75%, state: 25%     | 48.3             | 12.5%        | 402      | 1,130  |
| Banco BPI                                       | 2017: CaixaBank (E): 100%                       | 31.6             | 8.2%         | 421      | 1,369  |
| Caixa Económica Montepio Geral (CEMG)           | Mutual savings bank                             | 18.4             | 4.8%         | 324      | 973    |
| Caixa Central de Crédito Agrícola Mútuo (CCCAM) | Mutual savings bank                             | 17.7             | 4.6%         | 657      | 1,006  |
| BBVA  | BBVA (Portugal) Group                           | 4.0              | 1.0%         | 15       | 18     |
| other banks                                     |   | 47.0             | 12.2%        | 544      | 1,383  |
| Totals  |   | 384.7            | 100.0%       | 4,054    | 13,249 |

Note: in December 2017, Banco Santander Totta absorbed Banco Popular Portugal.

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. ATM figures are for Portugal, but may include ATMs abroad.

Source: individual bank reports, PCM research.

In 2018, Millennium bcp reported 546 branches and 2.3 million active customers served in Portugal. In total, Millennium bcp Group had 1,101 branches and 2,952 ATMs serving 4.9 million active customers.

The Group holds a prominent position in Europe through its banking operations in Portugal, Poland and Switzerland and in Africa through its banking operations in Mozambique. In addition, the bank has operated in Macau through a full branch since 2010, when it signed a cooperation agreement with Industrial and Commerce Bank of China (ICBC).

Historically, Millennium has invested in Africa where it had 166 branches and 374,000 customers in Angola (2015) and, in 2017, it reported 186 branches and 1.3 million customers in Mozambique. In 2016, Banco Millennium Angola (BMA) merged with Banco Privado Atlantico in Angola. The enlarged bank is a subsidiary of Banco Comercial Portugues.

In Europe, Millennium bcp owns 50.1% of Bank Millennium Polska, the eighth largest Polish bank by total bank assets. At end-2018, Millennium bcp had 345 branches and 1.77 million customers in Poland.

During restructuring processes, Millennium bcp sold its Turkish subsidiary MBT in 2010, its Greek subsidiary MBG to Piraeus Bank (GR) in 2013, including its full shareholding in Piraeus Bank, and its subsidiary Banca Millennium Romania (BMR) to OTP Bank (H) in 2014.

In June 2017, Millennium bcp and the Chinese SINO-CEEF Capital Management Company signed a memorandum of understanding to explore business opportunities in Poland and other countries of the CEE region involving Chinese and CEE companies.

In November 2018, Société Générale Group (F) sold its retail banking subsidiary in Poland, Euro Bank, to Bank Millennium (PL).

**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 572 branches at end-2018. 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 402 branches, comprised of 381 branches and 21 corporate centres, serving more than 1.3 million individual customers at end-2018.

ESFG and Crédit Agricole had been shareholders in BES, with a joint interest of 46.1% at end-2013. Crédit Agricole (F) has 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. However, according to the commitments assumed by the Portuguese Republic with the European Commission, the sale of Novo Banco should occur within a maximum period of two years from its date of incorporation, but this term was extended by decision of the European Commission announced on 21 December 2015. 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.

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.

**Banco BPI** (Banco Português de Investimento), member of the CaixaBank Group (E) and the fifth largest Portuguese bank in 2018, had 421 branches and 1.93 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 owns 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.

**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 2018, BancoBIC reported 181 branches in Portugal and changed its brand to EuroBIC.

BBVA from Spain operates in Portugal both as a retail bank and through specialist finance company BBVA Financiamento. In 2018, BBVA had 14 bank branches in Portugal.

**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 2018, bancoCTT reported 212 branches serving 431,063 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 Vårde Partners (51%) and by Spanish Banco Popular (49%). In May 2016, bancopopular-e was rebranded as WiZink Bank.

**WiZink Bank** – In March 2018, Vårde 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 nº5 article 145ºS 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 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 integrates with the Raisin savings marketplace. Via Banco BNI Europa's website Portuguese savers will gain 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 Q4 2019, the bank claimed to be the fastest-growing digital bank in Portugal.

## Internet/Mobile 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, 52% of all Portuguese bank clients were e-banking users in 2018, an increase of 10% in just one year.

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 BMB WAY, BPI app, CGD app, Millennium app, Totta app, WiZink app, and PayPal.

## 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 harmonized 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.

Among others, European Open API sets include Open Banking UK, Swiss Corporate API, and STET Open API (F, B). In addition, SIBS said to 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-2019, 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

## 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 2019, the more than 270 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 Maestro, Electron, 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.

**Debit cards** issued are MB, Maestro, and Electron cards. There are no V PAY cards in issue.

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

**Prepaid Cards** – The Portuguese banks issue cards with a prepaid function branded Maestro, Electron, VISA or 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, have 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 around 40 co-branded card products are in circulation. Co-branded cards are based on the international card brands Mastercard, VISA, American Express, Diners or Unibanco.

Portuguese banks issuing co-branded cards together with their non-bank partners include Millennium bcp, Banco BPI, CGD, Unicre, CEMG Montepio, Diners Club and others. Portuguese banks also issue private label store cards on behalf of retailers, petrol companies and other non-banks.

Co-brand partners include mostly retailers, football clubs like FC Porto, Benfica, Sporting Braga, petrol companies like Repsol and BP, airlines like TAP and Lufthansa and car company Fiat. Among others, typical examples for co-branded credit cards in circulation are:

- Braga Sports VISA cards
- CEMG Montepio + FC Braga
- Aura Mastercard cards
- Cetelem Portugal + various partners
- Cixadrice Mastercard cards
- CGD + Repsol
- FC Porto VISA cards
- Banco BPI + football club FC Porto
- TAP VISA/American Express cards
- Millennium bcp + TAP

## 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 is €20 for cards with PayPass or payWave function.

## 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 will be 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 function include prepaid luncheon/free meal cards that can only be used in food-related merchant outlets.

As at end-2018, there was one e-money institution (EMIs) with a license granted by BDP in Portugal (2017: 1, 2016: 1, 2015: 1), and 92 foreign EMIs with EU passport (2017: 92, 2016: 93, 2015: 51, 2014: 37, 2013: 23, 2012: 10) which offer their services in the country on a cross-border basis.

Additionally, software-based e-money e-/m-wallet services are also offered by international payment service providers and e-wallet issuers from the EEA region, primarily the UK. They provided notification of operating in Portugal under the EU passport system.

**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.

## Account-based 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 (SCTINST)** 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 SCTINST 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 SCTINST 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 SCTINST project with more than 40 large European banks involved. In November 2016, the European Payments Council (EPC) published the SCTINST scheme and SCTINST 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 2018, 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 SCTINST in Portugal may include P2P, mobile banking apps, online payments, and B2B.

In mid-2019, more than 2,089 banks in 20 European countries have registered for the SCTINST scheme. This represents 51% of all European banks.

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.

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 2018, BDP did not report PISPs licensed in Portugal. Authorised in another EEA member state, cross-border PISPs have provided notification of operating in Portugal under the EU passport system.

## 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** – In March 2015, PayPal introduced PayPal Plus. Via the new service, clients can pay with PayPal, credit card,



automatic debt collection or invoice. According to PayPal, the function is optimised for mobile devices and costs 1.9% of the sale value, plus a transaction fee. Every payment is covered by PayPal seller protection. This product can be seen as an option for future payment solutions and SMEs will be able to provide clients with a variety of payment methods. At the end of Q1 2019, PayPal reported more than 277 million active customer accounts globally.

In November 2016, PayPal has launched money transfers via Apple's Siri voice command function, enabling users with iOS10 devices to make payments by speaking requests. The function will be available in 30 countries, including the Netherlands.

In 2018, PayPal reported that 41% of payment volume came through a mobile device and mobile payment volume increased 40% over the same period last year to approximately \$66 billion. The company is moving further into mobile payments with its mobile-first product development focus and users may soon be able to use their PayPal account just like a real bank account.

In June 2018, PayPal continued its shopping spree with a \$400 million cash deal to acquire e-commerce platform Hyperwallet. The acquisition comes on the back of recent agreements to buy Sweden's iZettle 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.

**Alipay** – In December 2016, Ant-Financial owned Alipay said that 930,000 European merchants will 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 35 million customers have used Amazon Pay to make purchases globally, with more than half of these coming from Amazon Prime Members. As at Q4 2019, 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 21 participating banks in Portugal: ActivoBank, Banco Atlantico Europa, CTT Bank, Bankinter, BBVA, Best Bank, BIG, BPI, Leiria Credit Bank, Mafra Agricultural Bank, Angra do Heroísmo Mercy Bank Caixa Geral de Depósitos, Deutsche Bank, EuroBic, Millennium BCP, Montepio, New Bank, New Bank of the Azores, Santander Totta and Unicre. 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 2016, SIBS reported 400,00 MB NET cards registered with the MB WAY app, 121,000 purchases with the value €2.4 million, and 90,000 bank transfers with the value €8 million.

From 2017, MB WAY allows for card-less cash withdrawals. MB WAY users just click on the card they intend to use, choose the withdrawals option, then introduce the amount and generate the code, validate the operation with the PIN MB WAY or TouchID, head towards a MB network ATM, and key in the code generated to complete the card-less cash withdrawal process. SIBS reported 900,000 active users of the MB WAY app in 2017.

By the end of 2019, MB WAY reported more than 1.5 million users undertaking 5 million transactions a month a figure growing by around 10% every month. 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), registering more than 2 million transactions monthly. Likewise, the network of accepting merchants has grown to keep up with demand: there are 100,000 merchants accepting payments with MB WAY and more than 160,000 payment terminals enabled.

As at Q4 2019, the digital wallets MasterPass and VISA Checkout were not supported by Portuguese banks.

In October 2019, American Express, Discover, Mastercard and VISA announced to rollout interoperable one-click checkout button at e-commerce sites, click-to-pay. Based on the new EMV Secure Remote Commerce (SRC) industry standard, the networks are preparing to introduce the new click-to-pay button in the US leading up to wide availability in early 2020. The initial focus will be on converting existing MasterPass and VISA Checkout merchants to click-to-pay.

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.

**Samsung Pay** – Samsung Pay announced that users in the USA can add their PayPal accounts to Samsung Pay and will be able to use PayPal in-app, in-store and online anywhere Samsung Pay is accepted. Merchants will also be able to accept Samsung Pay online through PayPal’s Braintree.

Samsung is working on expanding PayPal wallet support to the other markets it serves, including Spain, South Korea, China and India.

### Overview of Cashless Payments

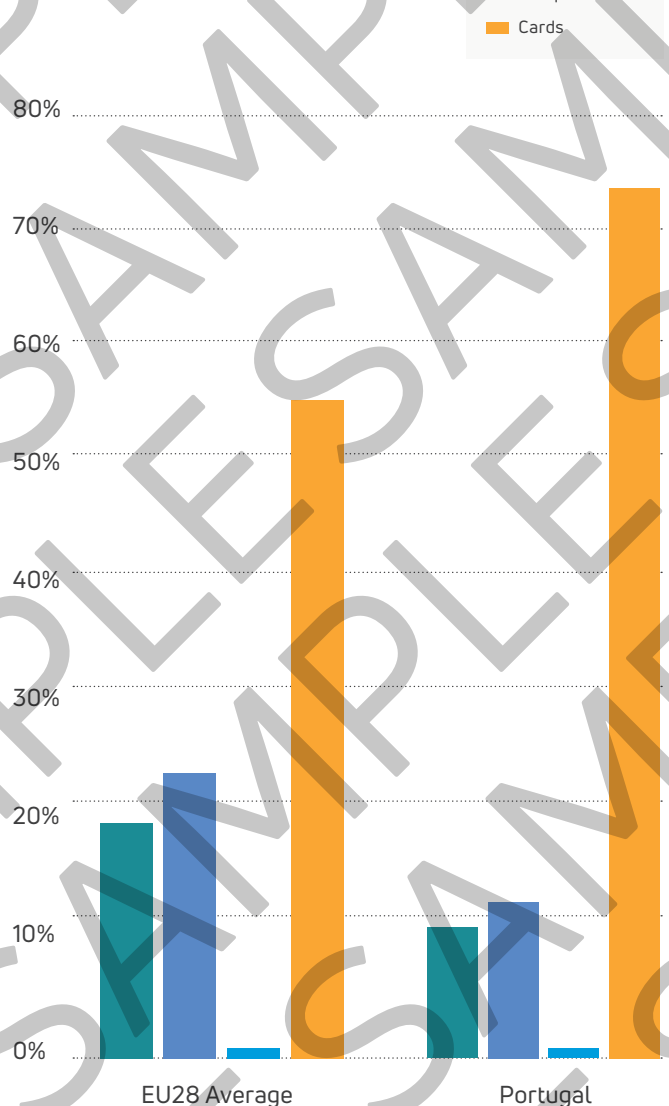
The Portuguese financial system setup the Payment Digitisation Programme (PRODIGI) in 2006 in order to foster automatic payments. Its main purpose was to place Portugal within three years among the European countries that make least use of less efficient means of payment. Since decades, Portugal has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

*(See Chart – Overview of Cashless Payments 2018)*

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 2018, cards accounted for 73.40% of cashless payments, compared with 56.61% in the EU, while direct debits accounted for 9.74%.

Credit transfers (11.95%) are the dominating cashless payment instrument in terms of value (78.9%) reflecting higher values per transaction. As at end-2018, SEPA credit transfers (SCT) accounted for 95.7% of all credit transfers in Portugal, including cross-border credit transfers.

### Overview of Cashless Payments 2018 - Portugal



Cheque use remains significant (1.92%), though particularly since the launch of the direct debit system in 2001, use of cheques has declined – in the past year, they have declined by 16% alone. However, cheques remain an important cashless payment instrument used for both retail and commercial payments.

In 2018, there was a high level of 243.7 cash-less payments per capita, up 10.22% from 2017. They were composed of 178.9 card payments per capita, 29.1 credit transfers per capita, 23.7 direct debits per capita and 4.7 cheque payments per capita.

*(See Table 2 – Cashless Payment Transactions in Portugal)*

## 2 - Cashless Payment Transactions in Portugal

| (MILLIONS)                                | 2014           | 2015           | 2016           | 2017           | 2018           | GR 17/18     | CAGR 5Y      |
|---|----------------|----------------|----------------|----------------|----------------|--------------|--------------|
| Card Payments                             | 1,292.1        | 1,403.8        | 1,528.4        | 1,671.5        | 1,839.4        | 10.04%       | 8.35%        |
| Cheques issued                            | 74.3           | 65.7           | 60.0           | 53.7           | 48.0           | -10.62%      | -10.43%      |
| Credit transfers                          | 272.8          | 276.1          | 280.2          | 288.4          | 299.4          | 3.81%        | 2.28%        |
| - thereof SEPA credit transfers           | 253.3          | 261.3          | 265.8          | 274.5          | 286.5          | 4.38%        | 8.80%        |
| Direct debits                             | 168.8          | 217.8          | 247.8          | 261.8          | 244.2          | -6.74%       | 2.08%        |
| <b>Total</b>                              | <b>1,888.0</b> | <b>2,041.5</b> | <b>2,193.2</b> | <b>2,352.1</b> | <b>2,506.0</b> | <b>6.54%</b> | <b>6.80%</b> |
| Total card payments per capita            | 124.2          | 135.5          | 148.0          | 162.3          | 178.9          | 10.22%       | 8.71%        |
| Total cheques issued per capita           | 7.1            | 6.3            | 5.8            | 5.2            | 4.7            | -10.48%      | -10.13%      |
| Total credit transfers per capita         | 26.2           | 26.7           | 27.1           | 28.0           | 29.1           | 3.98%        | 2.62%        |
| Total direct debits per capita            | 16.2           | 21.0           | 24.0           | 25.4           | 23.7           | -6.59%       | 2.42%        |
| <b>Total cashless payments per capita</b> | <b>181.5</b>   | <b>197.1</b>   | <b>212.4</b>   | <b>228.4</b>   | <b>243.7</b>   | <b>6.71%</b> | <b>7.16%</b> |

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

Source: ECB, Banco de 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

Two interbank organizations 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.

**Portugal and PSD2** – Portuguese banks have taken significant steps towards preparing for PSD2. In particular, the revised Payment Services Regulation (PSD2), the General Data Protection Regulation (GDPR), and the eIDAS regulation have significant impact on European digital payment services, including Portugal.

### 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:

- Harmonize data privacy laws across Europe,
- Protect and empower all EU citizens data privacy
- Reshape the way organizations 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 its data and the right of being 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.

### Strong Customer Authentication (RTS SCA)

In line with the requirements under the revised Payment Services Directive (PSD2), the European Union has recently published the regulatory technical standards (RTS) on Strong Customer Authentication (SCA) and Common Secure Communications (CSC).

The finalisation of the RTS is an important milestone which provides more clarity on how to push forward PSD2 compliance and strategic programmes. Nevertheless, the



final RTS still leaves a number of important questions open, particularly in relation to the development and testing of access interfaces for Trusted Payment Providers (TPPs).

Strong customer authentication (SCA) is a requirement of the EU Revised Directive on Payment Services (PSD2) on payment service providers within the European Economic Area. The SCA requirement comes into force from 14 September 2019, although this implementation will now be phased across different countries according to their state of readiness following representations to the European Commission by firms across the bloc. SCA ensures that electronic payments are performed with multi-factor authentication to increase the security of these transactions, e.g. 3D-Secure 2.0+ and one-time tokens for mobile banking apps. However, there are various exemptions for low value payments below €30, for specific risk-based authentication (RBA) practiced by choice of payment service provider, fix-amount subscriptions, and for merchant-initiated payments.

Usually, card-present transactions already commonly practice what could be termed strong customer authentication in the EU (Chip and PIN). However, this has not generally been true for online payments on cards prior to the implementation of the RTS SCA requirement.

**Mastercard Identity Check Mobile** – In October 2016, Mastercard said it plans to bring its biometric payment authentication service, Mastercard Identity Check Mobile, to Belgium and another 11 European countries. European consumers can now validate online purchases with their fingerprint or face using the Mastercard biometric authentication service.

## 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 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.

All organisations delivering public digital services in an EU member state must recognise electronic identification from all EU member states effective September 29, 2018. Many digital ID schemes operate on the basis of 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, with e.g. BankIDs in the Nordics being used to support instant payments and the delivery of harmonised government services. At the other extreme, the UK Government has recently come under fire for having ten different digital ID schemes run by different government departments.

Many digital ID schemes operate on the basis of super-secure passwords and/or mobile Apps confirmed by a second factor, either passwords or biometric factors such as fingerprints. However, proposals are being considered for blockchain-enabled digital ID – and discussions about the harmonisation of digital ID schemes are ongoing at both national, regional and supra-national levels across the continent.

## 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.

In October 2016, Mastercard launched its biometric payment authentication service, Mastercard Identity Check Mobile, in Europe. Consumers can now validate online purchases with their fingerprint or face using the Mastercard biometric authentication service.

Among others, in 2019, 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

## Blockchain and Crypto-Currencies

Since 2008, there has been much speculation about the role of cryptocurrencies in global payments, and the application of the software engineering behind cryptocurrencies known as blockchain. While speculation continues unabated, there are growing signs that cryptocurrencies are becoming accepted as part of the mainstream payments mix. The regulatory framework relating to blockchain is still emerging, but the presence of a variety of industry/government working groups in Europe and North America adds further weight to the view that crypto will have some role to play in the future of payments.

Meanwhile, a considerable number of programmes have been launched which use blockchain in payments. Globally examples include IBM's WorldWire and VISA B2B Connect, which utilises the open source software Hyperledger Fabric from Linux. Both of these systems employ blockchain in the clearing and settlement of business-to-business transactions, especially in multi-currency environments.

In July 2019, Ricardo Mourinho Felix, Portugal's secretary of state for finance, was one of the European Finance Ministers to criticise Facebook's plans for a "stablecoin" named Libra. Mr. Felix said that Libra shouldn't be released into general circulation until all of the potential risks it poses are mitigated. At the same time, the European Union (EU) said it would introduce legislation to govern new cryptocurrencies like Libra, saying such digital currencies posed a threat to the financial system as a whole.

## 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) develops 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.

With 24 shareholder banks, the SIBS interbank organisation currently represents almost the entire Portuguese banking community. CGD (21.60%) and BCP (21.54%) have shareholdings of 43.14% in SIBS SGPS; Banco Santander Totta holds 15.04%, Banco BPI 13.58% and Novo Banco about 7.97%. Most of the remaining shares are owned by other Portuguese banks, including foreign banks operating in the Portuguese market.

In late 2018, it was reported that SIBS shareholders had appointed Deutsche Bank to lead a strategic review of SIBS future, with one option being a trade sale. In the event of a sale, analysts estimate that SIBS could be worth between €400 million and €500 million. Some shareholders are reported to consider their stake in SIBS as a non-core asset.

SIBS can offer the following processing services: Issuing, Acquiring, Gateway and Switching. In 2018, SIBS reported more than 3 billion transactions processed with a total value of €4.5 billion. The card payment systems accounted for 85% of the total cash-less transactions processed.: MULTIBANCO (MB), VISA, Mastercard, American Express, EUFISERV and private label card networks. In addition, SIBS also processed transactions on the clearing & RTGS/Target2 systems (14%), SICOI, and SIBS International (1%). 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 supports the issuance and processing of contactless cards. In addition, SIBS FPS offers 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 does have 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.

**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. SDEF (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.

By mid-2019, 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 2018, there were 423.46 million Via Verde transactions managed by SIBS (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. No update on transaction numbers was provided for 2018.

Via Verde accounted for 93.6% of what SIBS calls its low-value payments (Via Verde, tolls with card, car parks and public phones), which overall rose by 8% to 468.28 million transactions in 2018.

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.

**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 personalize 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 2018, PayTel manages 23,000 EFTPOS terminals and, in



2017, processed 30 million payment transactions.

## 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 2018, the value of Unicre-acquired transactions was more than €18.0 billion, with the number of transactions grown to 490.0 million, up by 12.12% on 2017. The 2018 figures compare with 437 million transactions in 2017 and a total transaction value of €16.9 billion in 2017. The ATV per transaction has continuously fallen to €36.73 in 2018 from €43.97 in 2007 due to higher use of cards for lower purchase amounts. By end-2018, the number of merchant establishments subscribing to the Redunicre network was 74,000 (+8.8%), and a 13.6% growth in POS terminals to 100,000, of which 96,000 were recorded as contactless-enabled in 2018.

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.

*(See Table 3 – Unicre 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 9 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.

| 3 - Unicre Acceptance Network        |        |        |        |        |        |          |         |
|--------------------------------------|--------|--------|--------|--------|--------|----------|---------|
|                                      | 2014   | 2015   | 2016   | 2017   | 2018   | GR 17/18 | CAGR 5Y |
| Acquired POS (000s)                  | 70.0   | 80.0   | 88.0   | 100.0  | 96.0   | -4.00%   | 5.20%   |
| Acquired merchants (000s)            | 44.0   | 51.0   | 57.0   | 68.0   | 74.0   | 8.82%    | 10.61%  |
| Value of acquired transactions (€bn) | 15.2   | 16.6   | 16.3   | 16.9   | 18.0   | 6.51%    | 4.56%   |
| Number of acquired transactions (m)  | 363.6  | 428.2  | 420.0  | 437.0  | 490.0  | 12.13%   | 7.33%   |
| ATV per transaction                  | €41.80 | €38.77 | €38.81 | €38.67 | €36.73 | -5.01%   | -2.58%  |

Source: Unicre.

**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 at mid-2019.

*(See Table 4 – Leading Card Issuers in Portugal)*

**Outlook** – By mid-2019, Portuguese card issuers face the following notable challenges:

- Rollout of contactless cards, MB WAY, and online/mobile bank payment services combined with apps

- Continued consolidation of card portfolios and card products following the IFR regulation
- Implementation of 3D-Secure 2.0; launch of digital wallets, in-app payments, in-store payments
- Strong customer authentication (RTS SCA) and risk-based authentication (RBA)
- Competition from card-less payment service providers: PISPs, FinTechs
- Tokenisation security combined with HCE NFC and card credentials stored-on-file
- Impact of PSD2 and its Open Banking mandate on access to card accounts (XS2A)
- Compliance with the General Data Protection Regulation, GDPR

| 4 - Leading Card Issuers in Portugal |                           |   |
|--------------------------------------|---------------------------|---|
| DOMESTIC ISSUERS                     | ISSUED CARD BRANDS        | OWNED BY  |
| Caixa Geral de Depósitos (CGD)       |                           | State-owned                                     |
| Millennium bcp                       |                           | Portuguese interests: 22.12%, investors: 87.88% |
| Novo Banco                           |                           | 2017: Lone Star Funds (US): 75%, state: 25%     |
| 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             | ACCEPTANCE BRANDS OFFERED | 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.

## 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 First Data Europe (UK) 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), Ingenico ePayments (Ogone, GlobalCollect), PayVision (NL), Pagantis (E)
- DataCash (UK), Worldpay (UK), Paysafe (Skrill (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-2019, 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-2019, Portuguese acquirers face the following notable challenges:



- Rollout of contactless POS/MPOS terminals and innovative SmartPOS devices, Interchange++; digital wallets, HCE NFC payments, QR-code initiated payments.
- Complete acquirer service portfolio beyond cards, i.e. acceptance of card-less payment services
- 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 2.0; tokenisation security, P2PE encryption.
- Implementing strong customer authentication (RTS SCA) and risk-based authentication (RBA)
- Compliance with the General Data Protection Regulation, GDPR

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.

In 2018, there were five Portuguese V PAY acquirers, including Unicre, CGD netcaixa and EuroBIC. Millennium bcp is 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-2019, it is estimated that there were more than 55,000 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 seven 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 at mid-2019.

*(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

| 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 bcp                    |                                  | Portuguese interests: 22.12%, investors: 87.88% |
| Novo Banco                        |                                  | 2017: Lone Star Funds (US): 75%, state: 25%     |
| Banco BPI                         |                                  | 2018: CaixaBank (E): 100%                       |
| EuroBIC (Net Pay)                 |                                  | BancoBIC Group (Angola)                         |
| non-banks                         | private label cards, fleet cards | various   |

Note: UnionPay acceptance was enabled by Unicre during the second half of 2015, followed by Millennium in 2019

Source: PCM research

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 has 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 emphasized the attractions of offering customers an integrated solution that combines 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.

## Payment Institutions

As at 31 December 2018, there were 51 payment institutions resident in Portugal (2017: 48, 2016: 44, 2015: 41, 2014: 35, 2013: 28, 2012: 10, 2011: 8; 2010: 1) and operating in the Portuguese financial market.

In addition, a total of 388 payment institutions authorised in another EEA member state have provided notification of plans to operate in Portugal under the EU passport system (2017: 373, 2016: 342, 2015: 283, 2014: 227, 2013: 186, 2012: 125, 2011: 104; 2010: 51; 2009: 26) of which ten payment institutions have a physical presence in Portugal through a branch and 18 through an agent. Most of the institutions come from the UK and report payment services taking the form of remittance businesses.

## ATM Terminal Infrastructure

SIBS FPS operates the Portuguese Multibanco network. In 2014, the number of active MB ATMs operated by SIBS declined by 2.14% to 11,570. 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 is 100% complete, since end-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 allows international cardholders to withdraw funds at Portuguese ATMs while conveniently being charged in the home currency of their card.

From 2017, SIBS FPS enables 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.

According to Banco de Portugal, in 2018, there were 13,249 ATMs (-2.22%) with 463.90 million cash withdrawals (+0.38%) with a total value of €32.74 billion (+1.64% on 2017). About 97.86% of all cash withdrawals in Portugal are made using ATMs connected to the SIBS' Multibanco ATM network which represented 87.3% of the whole ATM terminal estate. In 2018, there were on average 2,917.8 transactions per ATM per month, and the ATV per cash withdrawal amounted to €70.57.

*(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 Caixautomática ATMs.

**CGD** – By end-2018, CGD had a total number of 3,747 equipment installations that performed 239.0 million operations with the total value €18.6 billion.

The private in-house Caixautomática network had 1,909 items of equipment, 1,185 ATM in-house machines and 724 bank passbook updaters. Further, CGD assisted 1,838 Multibanco ATMs. CGD claimed a 28.3% market share in the Portuguese ATM estate.

Most CGD ATMs are 'intelligent' ATMs with cash deposit function, which permit the automatic identification of banknotes, thus enabling the amount of the deposit immediately credited to a customer's account.

**Millennium bcp** reported 1,949 ATMs at end-2018 compared

| 6 - ATMs and Cash Withdrawals in Portugal  |         |         |         |         |         |          |         |
|--|---------|---------|---------|---------|---------|----------|---------|
|  | 2014    | 2015    | 2016    | 2017    | 2018    | GR 17/18 | CAGR 5Y |
| ATM Terminals with cash function   | 14,669  | 14,375  | 13,995  | 13,550  | 13,249  | -2.22%   | -2.34%  |
| - thereof active MB ATMs (SIBS)  | 12,701  | 12,437  | 12,164  | 11,823  | 11,570  | -2.14%   | -2.25%  |
| Ø Number of TXs per ATM per month  | 2,610.4 | 2,644.7 | 2,737.1 | 2,842.1 | 2,917.8 | 2.67%    | 2.70%   |
| Number of ATM cash withdrawals (m)   | 459.51  | 456.21  | 459.67  | 462.12  | 463.90  | 0.38%    | 0.29%   |
| - on domestic cards (m)  | 444.84  | 440.55  | 444.24  | 446.52  | 448.35  | 0.41%    | 0.18%   |
| - on foreign cards (m)   | 14.67   | 15.66   | 15.43   | 15.60   | 15.55   | -0.35%   | 3.66%   |
| Value of ATM cash withdrawals (€bn)  | 30.88   | 31.30   | 31.91   | 32.21   | 32.74   | 1.64%    | 1.33%   |
| - on domestic cards (€bn)  | 28.95   | 29.31   | 30.01   | 30.31   | 30.89   | 1.91%    | 1.32%   |
| - on foreign cards (€bn)   | 1.93    | 1.99    | 1.90    | 1.90    | 1.85    | -2.61%   | 1.42%   |
| ATV per ATM withdrawal   | €67.21  | €68.61  | €69.42  | €69.70  | €70.57  | 1.25%    | 1.04%   |
| # ATM Terminals per 1m capita - Portugal   | 1,410.3 | 1,387.8 | 1,355.4 | 1,315.5 | 1,288.3 | -2.06%   | -2.02%  |
| # ATM Terminals per 1m capita - EU total   | 896.5   | 879.8   | 857.5   | 846.6   | 829.8   | -1.98%   | -0.65%  |
| Note: most ATMs are part of the Multibanco ATM network; other ATMs operated by banks in-house. |         |         |         |         |         |          |         |
| Source: ECB, Banco de Portugal, SIBS.  |         |         |         |         |         |          |         |

with 2,336 at end-2012. As with CDG, Millennium bcp has increased the number of 'intelligent' ATMs with deposit validation technology.

**Banco BPI** reported 1,369 ATMs in 2018, down from 1,516 ATMs in 2011.

**CEMG Montepio** is one of the country's few financial institutions to run its own ATM network known as "Chave24". As at December 31, 2018, CEMG recorded 973 ATMs, of which 375 were installed in branches and 598 were outdoor ATMs.

## 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 reported 901.8 million service transactions in 2018. ATM withdrawals in the Multibanco network amounted for 437 million with a total value of €29.56 billion, equivalent to 97.86% of all domestic ATM withdrawals by number. The number of other ATM service transactions declined by 2.56% between 2017 and 2018 to 464.8 million. Withdrawals account for 48.4% of total service transactions. The value of all ATM service transactions was €69.0 billion, up by 6.14% on 2017.

(See Table 7 – Summary of SIBS ATM Services)



## 7 - Summary of SIBS ATM Services

|                                       | 2014   | 2015   | 2016   | 2017   | 2018   | GR 17/18 | CAGR 5Y |
|---------------------------------------|--------|--------|--------|--------|--------|----------|---------|
| Active ATMs                           | 12,701 | 12,437 | 12,164 | 11,823 | 11,570 | -2.14%   | -2.25%  |
| Cash withdrawals on cards (m)         | 429.0  | 425.6  | 429.0  | 433.2  | 437.0  | 0.86%    | 0.51%   |
| Other ATM service transactions (m)    | 465.4  | 458.2  | 477.9  | 477.0  | 464.8  | -2.56%   | -0.10%  |
| Total ATM service transactions (m)    | 894.4  | 883.9  | 906.8  | 910.3  | 901.8  | -0.93%   | 0.19%   |
| Total value of all ATM services (€bn) | 58.0   | 58.4   | 60.9   | 65.0   | 69.0   | 6.15%    | 5.15%   |
| Withdrawals in % of all SIBS ATM TXs  | 47.96% | 48.15% | 47.30% | 47.59% | 48.45% | 1.81%    | 0.31%   |

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.

## 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 50,000 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 11.4% higher than the EU average.

In 2018, the number of POS terminals grew by 8.59% to 348,000 of which 344,207 devices were Multibanco Net

terminals according to SIBS. There were 1.25 billion POS payments (+8.95%) with a total value of €63.41 billion (+4.07% on 2017). There were on average 298.9 payments per POS terminal per month, and the ATV per POS payment amounted to €50.80.

(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.

Among individual banks, CGD reported 44,500 POS terminals in its network in 2018 at 22,000 companies, including 25,000 contactless terminals and 15,000 enabled with dynamic currency conversion (DCC).

Novo Banco reported 56,403 POS terminals in 2017, amounting to 17.6% of the total, but did not provide an update in 2018. In 2018, Millennium bcp reported 60,610 POS terminals in Portugal and (2017 figure) 47,000 merchants accepting American Express cards. Banco BPI entered the market in 2007 and had 33,421 active POS terminals as at end-2018.

**Cash-advances ('cashback')** at POS terminals in Portugal have shown very low use at selected retail stores only. In 2018, 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

| 8 - POS Terminals in Portugal            |          |          |          |          |          |          |         |
|--|----------|----------|----------|----------|----------|----------|---------|
|  | 2014     | 2015     | 2016     | 2017     | 2018     | GR 17/18 | CAGR 5Y |
| POS terminals                            | 269,045  | 285,058  | 302,467  | 320,473  | 348,000  | 8.59%    | 6.06%   |
| - thereof MB terminals (SIBS)            | 266,601  | 282,758  | 300,146  | 317,134  | 344,207  | 8.54%    | 6.06%   |
| Ø Number of TXs per POS per month        | 277.1    | 284.8    | 289.7    | 297.9    | 298.9    | 0.33%    | 1.52%   |
| Number of POS payments (m)               | 894.74   | 974.15   | 1,051.34 | 1,145.61 | 1,248.10 | 8.95%    | 7.66%   |
| - on domestic cards (m)                  | 863.76   | 934.85   | 1,002.65 | 1,081.02 | 1,168.90 | 8.13%    | 6.93%   |
| - on foreign cards (m)                   | 30.98    | 39.30    | 48.70    | 64.59    | 79.19    | 22.60%   | 24.34%  |
| Value of POS payments (€bn)              | 48.53    | 51.24    | 55.21    | 60.93    | 63.41    | 4.07%    | 7.21%   |
| - on domestic cards (€bn)                | 46.01    | 48.19    | 51.77    | 56.74    | 61.73    | 8.80%    | 7.70%   |
| - on foreign cards (€bn)                 | 2.52     | 3.05     | 3.43     | 4.19     | 1.68     | -59.97%  | -5.02%  |
| ATV per POS payment                      | €54.23   | €52.60   | €52.51   | €53.18   | €50.80   | -4.48%   | -0.42%  |
| # POS Terminals per 1m capita - Portugal | 25,867.0 | 27,520.3 | 29,293.2 | 31,113.0 | 33,839.6 | 8.76%    | 6.41%   |
| # POS Terminals per 1m capita - EU total | 20,776.7 | 22,149.4 | 24,144.1 | 26,508.0 | 29,606.4 | 11.69%   | 10.48%  |

Source: ECB, Banco de Portugal, SIBS.

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 2018, contactless POS terminals were the new normal, and approximately 57% 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 iZettle, SumUp, Miura, and others have 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, Jusp, Handpoint, PAX, Poynt, Spire Payments, 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 2018, the number of payment transactions at POS terminals grew by 10.52% to 1,170 million, and the value of purchases grew by 9.1% to €43.46 billion. The ATV per MB NET POS transaction amounted for €37.15. According to SIBS, ATVs vary by merchant sector – e.g. €29 in petrol stations, €28 in supermarkets and €28 in restaurants.

(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 allows 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

| 9 - SIBS MB NET Operations  |                |                |                |                |                |              |              |  |
|---|----------------|----------------|----------------|----------------|----------------|--------------|--------------|--|
| (MILLIONS)  | 2014           | 2015           | 2016           | 2017           | 2018           | GR 17/18     | CAGR 5Y      |  |
| All transactions at MB ATMs   | 894.4          | 883.9          | 906.8          | 910.3          | 901.8          | -0.93%       | 0.19%        |  |
| All transactions at MB POS terminals  | 780.9          | 874.1          | 959.0          | 1,058.6        | 1,170.0        | 10.52%       | 9.85%        |  |
| Baixo Valor: low value operations   | 334.7          | 360.9          | 400.5          | 433.6          | 463.2          | 6.84%        | 7.84%        |  |
| Homebanking and other operations  | 159.4          | 173.9          | 207.2          | 245.0          | 273.8          | 11.74%       | 13.31%       |  |
| <b>Total MB NET operations</b>  | <b>2,169.4</b> | <b>2,292.7</b> | <b>2,473.5</b> | <b>2,647.5</b> | <b>2,808.8</b> | <b>6.09%</b> | <b>6.10%</b> |  |
| 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.   |                |                |                |                |                |              |              |  |

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 2018, 79% of the Portuguese used the internet and 49% of internet users purchased in online shops in the last 12 months. Almost 51% of Portuguese online buyers purchased from neighbouring EU countries. Online buyers purchase using PCs, notebooks, tablets or smartphones. Thus, a fast-growing number of remote payments are initiated from various types of internet capable devices. Smartphone penetration is 67% and is projected to grow to 73.5% by 2021. 44% of online sales in Portugal were made via computer, while 23% of purchases were made via tablet, and 33% via smartphone.

In 2018, 79% of Portuguese internet users also accessed the

internet via mobile devices and 36% made online purchases using tablets or smartphones.

According to domestic retailer associations, the Portuguese online B2C e-commerce value of goods and services accounted for €5.10 billion in 2018, up 10.87% on 2017. The on average B2C e-commerce expenditure per capita amounted to €495.9, while it was €1005.3 per online buyer. In 2018, e-Commerce (eGDP) had a 4.63% market share in Portuguese GDP (2017: 2.57%, 2016: 2.23%).

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 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 CTT e-commerce (the Portuguese Post Office), in 2018, there were 5.52 million remote payments on Portuguese



| 10 - Internet Use in Portugal                 |        |        |        |        |          |          |         |
|---|--------|--------|--------|--------|----------|----------|---------|
|   | 2014   | 2015   | 2016   | 2017   | 2018     | GR 17/18 | CAGR 5Y |
| Households with internet access               | 65%    | 70%    | 74%    | 77%    | 79%      | 2.60%    | 4.97%   |
| Last internet use (individuals, 12 months)    | 67%    | 70%    | 71%    | 75%    | 75%      | 0.00%    | 2.90%   |
| Internet users who bought online              | 39%    | 44%    | 44%    | 45%    | 49%      | 8.82%    | 5.10%   |
| Last online purchase (individuals, 12 month)  | 26%    | 31%    | 31%    | 34%    | 37%      | 8.82%    | 8.16%   |
| Last online purchase (individuals, 3 month)   | 17%    | 23%    | 23%    | 25%    | 27%      | 8.00%    | 12.47%  |
| Mobile phone subscriptions per 100 population | 114.2% | 113.0% | 112.1% | 114.3% | 115.6%   | 1.14%    | 0.20%   |
| B2C e-commerce revenue (€bn)                  | 2.88   | 3.33   | 3.73   | 4.60   | 5.10     | 10.87%   | 14.17%  |
| Annual B2C eCommerce growth rate/year         | 9.4%   | 15.9%  | 11.9%  | 23.3%  | 10.9%    | -53.37%  | -0.19%  |
| Ø B2C e-Commerce amount per capita            | €276.6 | €321.9 | €361.2 | €446.6 | €495.9   | 11.05%   | 14.55%  |
| Ø B2C e-Commerce amount per online buyer      | €712.8 | €726.8 | €827.4 | €985.1 | €1,005.3 | 2.05%    | 8.99%   |

Sources: Eurostat, ITU.

cards with a total value of €4.15 billion. According to the latter figure, the remote payments value on Portuguese cards would have an 93.0% market share of total B2C e-commerce.

According to PSP information, the Portuguese e-payment mix ranked by consumer preference was composed of debit cards (52%), credit cards (13%), cash-on-delivery (9%), payments-in-advance (7%), bank transfers (5%), payments-on-invoice (5%), prepaid products (3%), wallets (3%) like PayPal, and others (3%) like instalment payments.

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

**MB Net and Internet Payments on Cards** – SIBS and Unicre have developed MB Net, a system to improve secure payments on the internet. The MB Net system is accessible to all clients who have an American Express, Mastercard, Maestro, VISA or VISA Electron branded bank card. Cardholders can activate their normal bank card by means of the Multibanco ATM network or directly at one of the branches of the bank which issued the card. They are then given a MB Net ID Identification (user ID)

and are requested to choose a code.

In 2015, the MB Net online payment service grew by 15.1%, with 2.64 million remote purchases valued at €130.0 million. About 205,000 new subscribed cards were added in 2015. However, SIBS provided no subsequent update from 2015.

*(See Table 11 – SIBS MB NET and Internet Payments with Cards)*

**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 2018, 115.6% of Portuguese subscribed to a mobile phone. Many Portuguese people own more than one mobile phone and 67% own a smartphone (up from 32% in 2013). Tablet penetration has jumped significantly to 32% in recent years.

Since 2009, the next generation of mobile services and payments has started, pushed by the online buyers' high

## 11 - SIBS MB Net and Internet Payments with Cards

|                                       | 2012  | 2013  | 2014  | 2015  | 2016  | GR 15/16 | CAGR 5Y |
|---------------------------------------|-------|-------|-------|-------|-------|----------|---------|
| MB Net subscribed cards (000s)        | 985   | 1,163 | 1,355 | 1,560 | 1,775 | 13.78%   | 16.59%  |
| - thereof new subscribed cards (000s) | 161   | 178   | 192   | 205   | 215   | 4.88%    | 9.75%   |
| Number of purchases (000s)            | 1,625 | 1,953 | 2,239 | 2,640 | 3,042 | 15.23%   | 15.97%  |
| Value of purchases (€m)               | 83.6  | 101.7 | 113.4 | 130.0 | 148.4 | 14.15%   | 14.29%  |
| ATV per online payment                | €51.4 | €52.1 | €50.6 | €49.2 | €48.8 | -0.93%   | -1.45%  |

Note: MB cards subscribed for remote payment use. Figures for 2016 are estimated.

Source: SIBS.

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 2019, 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

M-parking is one of the few examples of SMS payments currently in operation in Portugal.

**NFC Ticketing trial** – In 2009, the Transport Operators of the Lisbon Region (OTLIS) has run a small-scale NFC trial on the Lisbon metro, the Metropolitano de Lisboa, in conjunction with the Portuguese mobile operators Optimus, TMN and Vodafone. Participating subscribers were given NFC capable phones to test contactless ticketing in addition to contactless paper tickets used in the Lisbon region.

**Caixa Mobile** – In 2012, CGD continued its pilot enabling Caixa employees to make mobile payments at automatic food and drink dispensing vending machines at CGD's headquarter. SMS payments and 2D-barcode technologies have been used.

**Mobile SIM SE Payments** – In a 3-month trial from March 2012, Portugal Telecom TMN employees were piloting the TMN mobile wallet service that enables them to make contactless, SMS, USSD and QR-Code based payments with any handset at canteens and vending machines in several offices.

Participants need to register for the service at a dedicated web site and create a virtual wallet funded through PayPal or a credit, ATM or MB Phone card. They then download an iPhone or Android app or use a mobile web site. According to TMN, the objective of the trial "is to gain a better understanding of the mobile payment technology options and of how people interact with these technologies and with the possibility to pay via mobile phone".

In September 2013, Portugal Telecom (PT) has selected digital wallet solution provider CardMobili to implement a digital wallet that will support NFC and QR-codes and offer a range of value-added services, including loyalty, offers and coupons.

In 2015, CGD launched a SIM SE NFC payment pilot, m.card. The pilot results from a partnership between CGD, Mastercard and Vodafone available only to Caixa and Vodafone employees.

**QR-code based Payments** – In December 2012, Oney Banque Accord, the banking arm of leading French supermarket chain Auchan announced Flash'n Pay, a QR code-based multi-channel, mobile payments brand. Flash'n Pay was rolled out across Auchan's 127 stores in France, as well as outlets in Luxembourg and Portugal in April 2013. To use Flash'n Pay, customers download an app to their smartphone and then link their payment and loyalty cards to their account. The merchant's checkout terminal presents a QR-code to the customer. The customer then captures an image of the QR-code with its smartphone's camera and enters a PIN to complete the payment. In April 2017, Auchan and Oney Bank replaced Flash'n Pay by Fivory wallet (see France profile).

shifted deferred debit cards from credit card reporting to debit card reporting. Thus, figures after 2013 are not comparable with previous years.

In 2018, the total number of Portuguese cards in circulation amounted to 23.62 million (+3.21%), equivalent to 2.30 cards per capita. Statistically, table 12 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 2018, there were 22.0 million cards (+6.28%) processed in the MB network with 19.6 million cards carrying the MB brand. MB cards co-badged Maestro, Electron, Mastercard or VISA accounted for 89.1% 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-2018, there were 8.03 million active contactless cards in circulation, around 37.08% of the payment cards total.

(See Table 12 – 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 Size and Dynamics

### Cards in Issue

Banco Portugal changed its statistical reporting in 2013. It

| 12 - Cards Issued in Portugal                       |            |            |            |            |            |          |         |
|---|------------|------------|------------|------------|------------|----------|---------|
|   | 2014       | 2015       | 2016       | 2017       | 2018       | GR 17/18 | CAGR 5Y |
| Cards with a cash function                          | 19,324,837 | 19,590,076 | 20,015,958 | 20,768,700 | 21,430,550 | 3.19%    | 2.19%   |
| Cards with a payment function                       | 20,255,110 | 20,376,605 | 20,563,522 | 21,175,976 | 21,657,217 | 2.27%    | 1.52%   |
| - thereof with debit and/or deferred debit function | 17,637,141 | 17,798,627 | 18,167,407 | 19,206,909 | 19,810,000 | 3.14%    | 2.48%   |
| - thereof with credit and/or delayed debit function | 7,779,631  | 8,062,688  | 8,160,673  | 8,270,750  | 8,462,881  | 2.32%    | -0.13%  |
| Cards with an e-money function                      | 1,260,654  | 2,554,916  | 2,554,583  | 2,835,014  | 3,353,150  | 18.28%   | 25.37%  |
| Total cards   | 21,515,764 | 22,052,158 | 22,129,732 | 22,885,010 | 23,619,433 | 3.21%    | 2.22%   |
| - thereof cards processed in MB network             | 19,937,525 | 20,216,056 | 20,100,000 | 20,700,000 | 22,000,000 | 6.28%    | 2.40%   |
| - thereof MB cards                                  | 18,200,000 | 18,600,000 | 18,700,000 | 19,000,000 | 19,600,000 | 3.16%    | 1.83%   |
| Payment cards per capita - Portugal                 | 2.07       | 2.13       | 2.14       | 2.22       | 2.30       | 3.37%    | 2.56%   |
| Payment cards per capita - EU Total                 | 1.51       | 1.54       | 1.56       | 1.58       | 1.62       | 2.57%    | 1.55%   |

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.

Source: ECB, Banco de Portugal, SIBS.



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 continue 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 73% of the total value of card fraud losses in 2016. 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 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 now has the second-lowest fraud loss basis points out of the group of 19 European countries with around 0.20 basis points.

Portugal's card fraud loss mix is aligned with European trends. Counterfeit has been reduced by nearly 90% since 2007. In 2018, counterfeit fraud (-8.33%) and CNP fraud (-12.50%) continued to decline slightly. However, CNP makes up 77.78% of total card fraud losses. Around 80% of CNP fraud was cross-border.

According to FICO, the international fraud prevention specialist, card fraud losses in Portugal showed continued decline, down from the €15.3 million peak in 2016.

### *(See Table 13 – Card Fraud Losses on Portuguese Cards)*

According to ECB figures published in September 2018, the acquirer card fraud losses by value in Portugal were about 0.02% (2.0 basis points) in 2016. By channel, it was composed of ATM fraud: 8%, high POS fraud: 40% and CNP fraud: 52%.

In 2016, the issuer card fraud losses in Portugal were a low 0.020% (2.0 basis points) by value and 0.014% by number of transactions. They grew by 44% compared to the figures of 2015. By channel, it was composed of ATM fraud: 4%, POS fraud 55% and CNP fraud 41%. As ECB figures are published every two years, and with a year's delay, there is as yet no more recent fraud analysis available.

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.

**PAYWATCH Fraud Detection** – In 2014, the fraud detection activity analysed 1.92 million transactions, of which 6,908 were fraudulent. It was possible to prevent 54,337 fraud transactions.

CNP Fraud continued to rise, representing more than 67% of total fraud with Portuguese cards. In 2014, there was again a significant reduction in the number of ATM attacks. The direct intervention of the fraud detection area allowed preventing

## 13 - Card Fraud Losses on Portuguese Cards

| (IN € MIO.)                       | 2014       | 2015        | 2016        | 2017       | 2018       | GR 17/18       | CAGR 5Y       |
|-----------------------------------|------------|-------------|-------------|------------|------------|----------------|---------------|
| Counterfeit cards                 | 2.2        | 1.3         | 8.5         | 1.2        | 1.1        | -8.33%         | -14.45%       |
| Card lost or stolen fraud         | 0.5        | 0.5         | 0.4         | 0.4        | 0.3        | -25.00%        | -21.40%       |
| ID fraud                          | 0.0        | 0.0         | 0.0         | 0.0        | 0.0        | -              | -             |
| Card not present fraud            | 4.6        | 8.4         | 6.4         | 5.6        | 4.9        | -12.50%        | 5.78%         |
| other losses                      | 0.0        | 0.0         | 0.0         | 0.0        | 0.0        | -              | -             |
| <b>Value of card fraud losses</b> | <b>7.3</b> | <b>10.2</b> | <b>15.3</b> | <b>7.2</b> | <b>6.3</b> | <b>-12.50%</b> | <b>-2.36%</b> |
| Counterfeit fraud in %            | 30.1%      | 12.7%       | 55.6%       | 16.7%      | 17.5%      | 4.76%          | -12.38%       |
| Card lost or stolen fraud in %    | 6.8%       | 4.9%        | 2.6%        | 5.6%       | 4.8%       | -14.29%        | -19.50%       |
| CNP fraud in %                    | 63.0%      | 82.4%       | 41.8%       | 77.8%      | 77.8%      | 0.00%          | 8.34%         |

Source: FICO, Euromonitor International.

fraud losses in the value of €5.6 million, 93% of the total. According to SIBS PAYWATCH, effective fraud value amounted to €0.42 million, down from €5.4 million in 2013.

SIBS PAYWATCH provided no subsequent update for figures from 2015.

## 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 8.03% in the last five years. Card payments are now 3.86 times higher by number and 2.70 times higher by value than cash withdrawals, respectively. Since end-2008, Portugal – with just 10.28 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 2018, there were 1.77 billion card payments (+9.89%) with the total value €85.88 billion (+11.28% over 2017). As with other Western European markets, one striking feature of the Portuguese payments market is not just the rapid growth in these figures, but the fact that they continue to accelerate in terms of rate of growth.

The ATV per card payment amounted to €48.60, and there were on average 87.46 payments per card per year (+16.09%). In 2018, payments on cards with a debit/deferred debit function amounted to 95.05% by number and 95.59% by value.

Included in the card payments total in 2018 were 560.11 million remote payments on the internet (+12.73%) with a total value of €22.45 billion (+18.36% on 2017).

The use of Portuguese cards abroad accounted for 83.82 million payments (+34.63%) with the total value €4.00 billion (+22.33% on 2017), accounting for 4.95% and 4.41% respectively of total card payments.

(See Table 14 – 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%). Banco de Portugal provided no subsequent update. However, in 2018, it is believed that contactless payments amounted to 140 million contactless payments with an estimated value of €1.6 billion. In 2018, Unicre reported that it had 96,000 contactless terminals in Portugal.

**Cash withdrawals with Portuguese cards** – In 2018, there were 21.43 million cards with a cash function in circulation. There were 457.56 million withdrawals on cards (+0.45%) compared with 1.77 billion payments on all cards. The withdrawals value on cards amounted to €31.82 billion (+1.94% on 2017). The ATV per cash withdrawal on cards was €69.54, and there were 21.4 cash withdrawals per card per year.

(See Table 15 – Cash Withdrawals with Portuguese Cards)

| 14 - Payments with Portuguese Cards          |            |            |            |            |            |          |         |
|--|------------|------------|------------|------------|------------|----------|---------|
|  | 2014       | 2015       | 2016       | 2017       | 2018       | GR 17/18 | CAGR 5Y |
| Cards with a payment function                | 20,255,110 | 20,376,605 | 20,563,522 | 21,175,976 | 21,657,217 | 2.27%    | 1.52%   |
| Ø payments per card per year                 | 61.7       | 66.4       | 71.6       | 75.9       | 81.6       | 7.45%    | 6.41%   |
| Ø payment value per card per year            | €3,009.0   | €3,175.2   | €3,405.6   | €3,644.6   | €3,965.6   | 8.81%    | 7.23%   |
| Payments (m)                                 | 1,249.90   | 1,353.13   | 1,472.22   | 1,608.06   | 1,767.16   | 9.89%    | 8.03%   |
| - thereof remote payments (m)                | 368.34     | 397.48     | 444.45     | 496.86     | 560.11     | 12.73%   | 9.87%   |
| - thereof POS payments (m)                   | 881.56     | 955.64     | 1,027.77   | 1,111.20   | 1,207.05   | 8.63%    | 7.24%   |
| - thereof cross-border payments (m)          | 33.05      | 37.72      | 47.01      | 62.26      | 83.82      | 34.63%   | 24.26%  |
| - on debit and/or deferred debit cards (m)   | 1,199.70   | 1,298.55   | 1,403.75   | 1,532.72   | 1,679.70   | 9.59%    | 8.14%   |
| - on credit and/or delayed debit cards (m)   | 50.20      | 54.57      | 68.47      | 75.34      | 87.46      | 16.09%   | 6.09%   |
| Value of payments (€bn)                      | 60.95      | 64.70      | 70.03      | 77.18      | 85.88      | 11.28%   | 8.87%   |
| - thereof remote payments (€bn)              | 13.92      | 15.38      | 16.95      | 18.97      | 22.45      | 18.36%   | 12.18%  |
| - thereof POS payments (€bn)                 | 47.03      | 49.32      | 53.08      | 58.21      | 63.44      | 8.97%    | 7.83%   |
| - thereof cross-border payments (€bn)        | 2.20       | 2.46       | 2.77       | 3.27       | 4.00       | 22.33%   | 15.34%  |
| - on debit and/or deferred debit cards (€bn) | 57.72      | 61.41      | 66.64      | 73.63      | 82.10      | 11.50%   | 9.41%   |
| - on credit and/or delayed debit cards (€bn) | 3.22       | 3.29       | 3.40       | 3.55       | 3.78       | 6.62%    | -0.04%  |
| ATV per card payment                         | €48.76     | €47.81     | €47.57     | €47.99     | €48.60     | 1.26%    | 0.78%   |

Note: From 2013, Banco Portugal shifted deferred debit cards from credit card reporting to debit card reporting.

Note: most figures were restated.

Source: ECB, Banco de Portugal.

| 15 - Cash Withdrawals with Portuguese Cards      |            |            |            |            |            |          |         |
|--|------------|------------|------------|------------|------------|----------|---------|
|  | 2014       | 2015       | 2016       | 2017       | 2018       | GR 17/18 | CAGR 5Y |
| Cards with a cash function                       | 19,324,837 | 19,590,076 | 20,015,958 | 20,768,700 | 21,430,550 | 3.19%    | 2.19%   |
| Ø withdrawals per card per year                  | 23.4       | 22.9       | 22.6       | 21.9       | 21.4       | -2.65%   | -1.86%  |
| Ø Total cash withdrawals value per card per year | €1,535.0   | €1,533.4   | €1,537.8   | €1,502.9   | €1,484.7   | -1.21%   | -0.73%  |
| Number of cash withdrawals (m)                   | 451.84     | 447.65     | 451.90     | 455.48     | 457.56     | 0.45%    | 0.29%   |
| - thereof withdrawals domestic (m)               | 444.84     | 440.55     | 444.24     | 446.52     | 448.35     | 0.41%    | 0.18%   |
| - thereof withdrawals abroad (m)                 | 7.00       | 7.10       | 7.66       | 8.97       | 9.20       | 2.67%    | 6.56%   |
| Value of ATM cash withdrawals (€bn)              | 29.66      | 30.04      | 30.78      | 31.21      | 31.82      | 1.94%    | 1.45%   |
| - thereof values domestic (€bn)                  | 28.95      | 29.31      | 30.01      | 30.31      | 30.89      | 1.91%    | 1.32%   |
| - thereof values abroad (€bn)                    | 0.71       | 0.73       | 0.77       | 0.90       | 0.93       | 2.87%    | 6.07%   |
| ATV per cash withdrawal on cards                 | €65.65     | €67.10     | €68.11     | €68.53     | €69.54     | 1.47%    | 1.15%   |
| Total cash withdrawals per capita                | 43.4       | 43.2       | 43.8       | 44.2       | 44.5       | 0.62%    | 0.63%   |
| Total cash withdrawals value per capita          | €2,851.9   | €2,900.0   | €2,981.0   | €3,030.4   | €3,094.0   | 2.10%    | 1.79%   |

Source: ECB, Banco de Portugal.



## Card Use per Capita

In 2018, card payments per capita amounted for 163.3 (+9.77% on 2017), up from 115.3 in 2014 (+50.36%) and the 13th highest in Europe. Of these payments, there were 163.3 payments on cards with a debit/deferred debit function per capita and 8.5 payments on cards with a credit/delayed debit function. In addition, there were 44.5 cash withdrawals on cards per capita.

(See Table 16 – 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 2018, there were 19.81 million debit and/or deferred debit functions on debit cards, mostly MB cards with a co-badged deferred debit brand. There were 1.68 billion payments on cards with a debit/deferred debit function (+9.59%) with a total

value of €82.10 billion (+11.5% on 2017). The ATV per debit card payment amounted to €48.88, and the Portuguese made on average 84.8 payments per debit card per year.

(See Table 17 – 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 2018, there were 8.46 million credit and/or delayed debit functions on cards, including Unibanco cards with a co-badged international brand. There were 87.46 million payments on cards with a credit/delayed debit function (+16.09%) with a total value of €3.78 billion (+6.62% on 2017). The ATV per credit card payment accounted to €43.27, and there were on average 10.3 payments per credit card per year.

(See Table 18 – Payments with Portuguese Credit/Delayed Debit Cards)

| 16 - Card Payments Per Capita in Portugal            |          |          |          |          |          |          |         |
|--|----------|----------|----------|----------|----------|----------|---------|
|  | 2014     | 2015     | 2016     | 2017     | 2018     | GR 17/18 | CAGR 5Y |
| Debit and/or deferred debit card payments per capita | 115.3    | 125.4    | 136.0    | 148.8    | 163.3    | 9.77%    | 8.50%   |
| Debit and/or deferred debit card value per capita    | €5,549.8 | €5,929.1 | €6,453.4 | €7,148.2 | €7,983.4 | 11.68%   | 9.78%   |
| Credit and/or delayed debit card payments per capita | 4.8      | 5.3      | 6.6      | 7.3      | 8.5      | 16.28%   | 6.45%   |
| Credit and/or delayed debit card value per capita    | €310.0   | €317.1   | €328.9   | €344.6   | €368.0   | 6.79%    | 0.29%   |
| Total card payments per capita                       | 120.2    | 130.6    | 142.6    | 156.1    | 171.8    | 10.07%   | 8.39%   |
| Total card value per capita                          | €5,859.8 | €6,246.2 | €6,782.3 | €7,492.8 | €8,351.4 | 11.46%   | 9.23%   |

Source: ECB, Banco de Portugal.

| 17 - Payments with Portuguese Debit Cards       |            |            |            |            |            |          |         |
|---|------------|------------|------------|------------|------------|----------|---------|
|   | 2014       | 2015       | 2016       | 2017       | 2018       | GR 17/18 | CAGR 5Y |
| Cards with debit and/or deferred debit function | 17,637,141 | 17,798,627 | 18,167,407 | 19,206,909 | 19,810,000 | 3.14%    | 2.48%   |
| Ø payments per debit card per year              | 68.0       | 73.0       | 77.3       | 79.8       | 84.8       | 6.25%    | 5.52%   |
| Ø payments value per debit card per year        | €3,272.9   | €3,450.5   | €3,667.8   | €3,833.5   | €4,144.4   | 8.11%    | 6.77%   |
| Payments (m)                                    | 1,199.70   | 1,298.55   | 1,403.75   | 1,532.72   | 1,679.70   | 9.59%    | 8.14%   |
| Value of payments (€bn)                         | 57.72      | 61.41      | 66.64      | 73.63      | 82.10      | 11.50%   | 9.41%   |
| ATV per debit card payment                      | €48.12     | €47.29     | €47.47     | €48.04     | €48.88     | 1.75%    | 1.18%   |

Note: Banco Portugal changed its statistical reporting in 2013. It shifted deferred debit cards from credit card reporting to debit card reporting.

Source: ECB, Banco de Portugal.

## 18 - Payments with Portuguese Credit/Delayed Debit Cards

|   | 2014      | 2015      | 2016      | 2017      | 2018      | GR 17/18 | CAGR 5Y |
|---|-----------|-----------|-----------|-----------|-----------|----------|---------|
| Cards with credit and/or delayed debit function   | 7,779,631 | 8,062,688 | 8,160,673 | 8,270,750 | 8,462,881 | 2.32%    | -0.13%  |
| Ø payments per credit/delayed debit card per year | 6.5       | 6.8       | 8.4       | 9.1       | 10.3      | 13.45%   | 6.23%   |
| Ø payments value per cc/dd card per year          | €414.4    | €407.4    | €416.1    | €429.1    | €447.1    | 4.20%    | 0.08%   |
| Payments (m)                                      | 50.20     | 54.57     | 68.47     | 75.34     | 87.46     | 16.09%   | 6.09%   |
| Value of payments (€bn)                           | 3.22      | 3.29      | 3.40      | 3.55      | 3.78      | 6.62%    | -0.04%  |
| ATV per credit/delayed debit card payment         | €64.22    | €60.19    | €49.60    | €47.11    | €43.27    | -8.16%   | -5.78%  |

Note: Banco Portugal changed its statistical reporting in 2013. It shifted deferred debit cards from credit card reporting to debit card reporting.

Source: ECB, Banco de Portugal.

## E-Money Use

In 2018, there were 72.27 million e-money purchases (+13.89%) on 3.35 million cards giving access to e-money accounts (+18.28%) with a total value of €1.24 billion (+14.43% on 2017). The ATV per e-money purchase accounted for €17.13. From 2013, cards with e-money function include luncheon cards that can only be used in food-related merchant outlets.

(See Table 19 – E-Money Use in Portugal)

## Leading Card Issuers in Detail – including digital channels

**CGD** – issues contactless MB debit cards branded Maestro or VISA Electron; credit cards branded Mastercard or VISA; and prepaid cards. From 2011, it issues contactless Mastercard credit cards with added PayPass function followed by contactless Maestro with PayPass function and VISA Electron cards with payWave function. In 2017, CGD reported 3.35 million active cards in circulation. The number of CGD credit cards grew by 21% from 2009 to 1.36 million (no subsequent update on credit card numbers). While the bank did not provide an update on card numbers in 2018, it described itself as the market leader for debit cards with a 26.8% market share.

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 has 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 Maestro, VISA Electron, 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. Millennium bcp provided no subsequent update.

In October 2017, Millennium bcp launched its new digital payment solution, the Millennium Moove 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 will begin to issue UnionPay cards to its customers and rolling out UnionPay QuickPass and online payment services. 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

| 19 - E-Money Use in Portugal   |           |           |           |           |           |          |         |
|--|-----------|-----------|-----------|-----------|-----------|----------|---------|
|  | 2014      | 2015      | 2016      | 2017      | 2018      | GR 17/18 | CAGR 5Y |
| E-money institutions   | 0         | 1         | 1         | 1         | 1         | 0.00%    | na      |
| Outstanding values on e-money accounts (m)   | 61.00     | 81.00     | 82.00     | 101.00    | 115.00    | 13.86%   | 11.41%  |
| Cards giving access to e-money accounts  | 1,260,654 | 2,554,916 | 2,554,916 | 2,835,014 | 3,353,150 | 18.28%   | 25.37%  |
| - thereof cards loaded at least once   | 1,260,654 | 1,624,964 | 1,514,138 | 1,656,337 | 1,907,959 | 15.19%   | 12.00%  |
| E-money accepting terminals  | 284,818   | 300,491   | 317,467   | 334,954   | 362,148   | 8.12%    | 5.62%   |
| Payments on cards accessing e-money accounts (m)   | 42.22     | 50.70     | 56.17     | 63.46     | 72.27     | 13.89%   | 18.58%  |
| Payments value on cards accessing e-money accounts (€ bn)  | 0.79      | 0.90      | 0.96      | 1.08      | 1.24      | 14.43%   | 15.20%  |
| ATV per e-money payment  | €18.71    | €17.83    | €17.16    | €17.05    | €17.13    | 0.48%    | -2.84%  |
| 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.  |           |           |           |           |           |          |         |

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.

**Banco Santander Totta**, issues contactless VISA Electron MB cards, and Mastercard and VISA MB 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. The bank's website was accessed 8.7 million times per month on average in 2018.

**Novo Banco (previously BES Banco Espírito Santo)** issues contactless MB debit cards co-badged VISA Electron; credit cards co-badged VISA; virtual VISA Electron cards, and prepaid cards. Additionally, BES issues American Express cards as part of double card offers. In 2017, Novo Banco reported 1.95 active million cards and a 11.5% market share of Portuguese cards in circulation. In 2015, Novo Banco reported the number of American Express cards placed with clients increasing by more than 200,000.

In 2018, the bank reported an 11.3% share of the Portuguese card market, and a 15.6% share of POS transactions acquired. The bank also reported 553,000 digital customers and claimed to be the first bank in Portugal to offer fully digital account opening capability.

BES operated a consumer finance joint venture, Credibom, with Sofinco, the subsidiary of Crédit Agricole (F). BES progressively sold its stake in Credibom to Sofinco (see below), concluding the process in June 2004. BES retained ownership of Crediflash, its credit and debit cards unit.

BES's cards include the Cartão Selecção card, under a partnership with the Portuguese Football Federation (FPF). Portuguese holders of this card become eligible for prizes and discounts on tickets to the national team's matches. BES reported that more than 400,000 Portuguese had joined this initiative.

In January 2013, Crédit Agricole (F) reported that BES has issued 200,000 contactless cards and that BES is renewing its payment terminals. The banks overall objective was to reach 600,000 contactless cards and 5,500 terminals by the end of 2013.



Continuing the joint efforts that aim to stimulate the development of the sector dedicated to the delivery of social benefits by companies to their employees, Novo Banco and Edenred managed a portfolio of 281,739 luncheon cards, having issued 46,434 new cards in 2014.

**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. No subsequent updates on the card business were provided.

*(See Table 20 – Banco BPI's Credit and Debit Cards)*

**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 2018, Unicre reported that its card numbers had increased by 6% over 2017, and that its credit card loan portfolio had grown by 20.4% over the past year. It also said that the number of card schemes it manages on behalf of other banks, under its "card management" service portfolio, had increased by 24%.

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 is 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 can

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%.

**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,

| 20 - Banco BPI's Credit and Debit Cards |         |         |         |         |         |          |         |
|---|---------|---------|---------|---------|---------|----------|---------|
|   | 2014    | 2015    | 2016    | 2017    | 2018    | GR 17/18 | CAGR 5Y |
| <b>Credit cards</b>                     |         |         |         |         |         |          |         |
| Cards at year-end (000s)                | 519.0   | 487.4   | 459.3   | 439.0   | 445.1   | 1.40%    | -3.54%  |
| Billing (€ millions)                    | 983.1   | 995.3   | 984.2   | 967.9   | 1,092.5 | 12.88%   | 2.49%   |
| Loan portfolio (€ millions)             | 165.2   | 162.9   | 155.9   | 161.8   | 150.0   | -7.29%   | -1.73%  |
| <b>Debit cards</b>                      |         |         |         |         |         |          |         |
| Cards at year-end (000s)                | 1,117.7 | 1,114.3 | 1,147.8 | 1,112.0 | 1,127.6 | 1.40%    | 0.62%   |
| Billing (€ millions)                    | 6,103.3 | 6,667.7 | 7,202.2 | 7,893.0 | 8,548.1 | 8.30%    | 8.08%   |

Note: credit card loan portfolio includes outstanding credit of non-bank customers.

Source: Banco BPI.

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 is 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 claims is the No 1 player in the market. The merged company operates 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 is 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 provides 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

### Significant Events in Portuguese Banking

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).

|                       |  |                      |  |
|-----------------------|--|----------------------|--|
| <b>December 2015</b>  | The Portuguese state sold Banco Internacional do Funchal (BANIF) to Banco Santander Totta, excluding the Toxic Bank part, Oitante.                       | <b>June 2004</b>     | BES sells remaining stake in Credibom to Banque Sofinco, giving the French company full ownership.   |
| <b>August 2014</b>    | Banco Espírito Santo (BES) became state-owned, after reporting €3.6 billion in losses. BES was rebranded as Novo Banco.                                  | <b>July 2003</b>     | Banco Espírito Santo (BES) announces sale of 45% of Credibom to Sofinco, increasing the stake of the Crédit Agricole subsidiary to 85%.              |
| <b>March 2012</b>     | BancoBIC from Angola acquires Banco Portugues de Negocios (BPN) from the Portuguese state for €40 million, including acquirer BPN net Pay.               | <b>April 2000</b>    | BCP acquires BPSM. BCP also acquires Banco Mello and Companhia de Seguros Império during 2000.   |
| <b>March-May 2009</b> | European Commission approves Portuguese bank recapitalization scheme and state guarantee for €450 million loan to Banco Privado Português.               | <b>March 2000</b>    | BES and BPI merger plans collapse.   |
| <b>November 2008</b>  | Banco Portugues de Negocios (BPN) becomes state-owned.   | <b>2000</b>          | BCP acquires BPSM from Mundial Confiança. BCP also acquires Banco Mello and Companhia de Seguros Império.  |
| <b>November 2007</b>  | Negotiations between Banco BPI and Millennium bcp concluded without agreement.   | <b>January 2000</b>  | Banco Espírito Santo (BES) and Banco Português de Investimento (BPI) agree to merge, forming BES.BPI.  |
| <b>October 2007</b>   | Banco BPI presents merger proposal to Millennium bcp.  | <b>November 1999</b> | Break-up of Champalimaud group agreed. Santander acquires BTA and CPP. Caixa Geral de Depósitos (CGD) acquires Mundial Confiança. BCP acquires BPSM. |
| <b>May 2007</b>       | Millennium bcp's hostile €4.3 billion bid for BPI fails.   |                      |  |
| <b>July 2006</b>      | Société Générale announces launch of CrediAgora, its new Portuguese consumer finance subsidiary.   |                      |  |
| <b>March 2006</b>     | Millennium bcp launches hostile €4.3 billion bid for BPI.  |                      |  |
| <b>December 2005</b>  | Cofinoga sells partner Banque Accord its 49% holding in Crediplus, their Portuguese consumer finance joint venture.                                      |                      |  |
| <b>January 2005</b>   | BCP sells to Crédit Agricole's consumer finance subsidiary Sofinco the non-auto POS consumer credit business previously carried out by BCP's CrédiBanco. |                      |  |

The break-up of the Champalimaud group in 1999-2000 reshaped Portugal's banking sector. Through its insurance company Mundial Confiança, Champalimaud accounted for some 20% of the banking market. It controlled Banco Pinto e Sotto Mayor (BPSM), Banco Totta & Açores (a retail bank), Crédito Predial Português (a mortgage bank) and investment bank Banco Chemical Finance.

After a protracted battle between Santander and BCP for Champalimaud's banking assets, in which the Portuguese government and European Commission became involved, Santander acquired Banco Totta & Açores and Crédito Predial Português from the Champalimaud group, giving it an 11% share of the Portuguese market. BCP acquired Banco Pinto e Sotto Mayor and CGD acquired Mundial Confiança.

## **Portugal and the Financial Crisis – Background**

The Portuguese banking system has not been as badly hit by the financial crisis as those of some other countries. However,

the European Commission has approved various Portuguese schemes to support its financial sector. In November 2008, the government unveiled plans to invest up to €4 billion in the country's banking system to help it weather the global financial crisis.

In the same month, Banco Português de Negócios (BPN) was nationalised by the Portuguese government after running up accumulated losses of €700 million. The state-owned CGD bank has taken over the management of BPN.

In December 2008, Banco de Portugal seized control of Banco Privado Português (BPP) and arranged a temporary €450 million loan for the bank to help solve its severe liquidity problems and maintain confidence in the financial markets. In June 2009 however, the government refused to inject a further €200 million in the bank, claiming that BPP posed no systemic risk to the country's financial system. The bank was closed in April 2010 and is expected to complete its liquidation process by 2016.

In April 2011, Portugal became the third Euro zone country, after Greece and Ireland, to seek a financial bailout package from the EU and the International Monetary Fund (IMF). Part of the bailout funds, estimated at €78 billion, has been used to cover local bank capital shortfalls.

In August 2014, the Portuguese state rescued Banco Espírito Santo (BES), after BES reported €3.6 billion in losses.

## Banking Sector Background

In March 2006, Millennium bcp launched a hostile bid for BPI. If the bid had succeeded, the acquisition would have created the undisputed market leader in Portugal, with 4 million customers and market shares of above 30% in retail deposits and loans. However, the bid failed with fewer than 4% of BPI's shareholders taking up the offer. BCP failed to persuade any of BPI's core shareholders, led by La Caixa, Spain's largest savings bank, to sell.

In October 2007, Banco BPI presented a merger proposal to Millennium bcp. However, negotiations were concluded in November without agreement.

Millennium bcp's hostile bid was the second merger proposal involving BPI in recent years. Plans for a merger between BES and BPI collapsed in 2000.

One of the Portuguese Competition Authority's conditions for clearance of the BCP-BPI merger was disposal of BCP's and BPI's participations in Unicre, and a commitment by the combined BCP-BPI group to launch card acquiring operations. Had the BCP-BPI merger proceeded, 47% of the shares in Unicre – 30% held by BCP and 17% by BPI – would have been sold.

## Unicre Background

Unicre was created in 1974 by six banks to issue and manage a common credit card linked to an international brand (MasterCharge).

Between 1979 and 1988, Unicre had the exclusive right to issue all domestic credit cards. From 1984, it was extended to all foreign credit cards in Portugal, when the integration of the operation of VISA took place (previously undertaken by a commercial bank). Its Unibanco card could be used across its Redunicre nation-wide acquiring network.

Its issuance monopoly ended in May 1988 when a law was passed to liberalise credit card issuance. In 1990, the liberalisation of the acquirer function allowed American Express to become independent.

Unicre had the exclusive right to represent all foreign banks in Portugal and was the only organization authorized to issue domestic Unibanco-branded credit cards until 1988, when banks were allowed to issue cards under its centralized management. In May 1991, a resolution of the secretary of state to the treasury totally liberalized the issue and management of credit cards. Unicre continues to issue Mastercard and VISA programmes for smaller banks.

In December 2005, Unicre was converted into an 'Instituição Financeira de Crédito' and its paid-up capital increased from €8.5 million to €10 million. Shareholdings were adjusted at the same time, with Banco Santander Totta becoming the second-biggest shareholder.

## Merchant Acquiring Background

Banco Português de Negócios, an innovator in merchant acquiring, was nationalized in late 2008. In its 2005 annual report, BPN said that once its acquiring initiative became known, an immediate reduction in MSCs followed. BPN alleged that the launch of NetPay was "strongly prejudiced by VISA Portugal, which by setting interchange fees roughly 40% less than those borne by (Unicre), created a serious distortion in competition." In December 2005, the Portuguese competition authority, prompted by BPN, established a new regime under which MSCs "were fixed in parity for the different operators."

In its 2006 annual report, BPN continued to express concern at the lack of fair competition in the acquiring market, claiming that it still had to contend with "an uneven playing field stemming from the fact that the VISA Electron and Maestro (Mastercard) cards are able to function as co-branded Multibanco cards, benefiting in this manner from more favourable interchange fee rates in flagrant breach of fair competition rules." BPN reported that the NetPay network had rolled out a further 14,000 POS by the end-2006, with a market



share in pure acquiring of 20%. During the year, BPN reported total value of transactions processed of about €386 million.

BPN reported further growth in its NetPay acquiring business in 2007, with an increase of around 61% in TPAs installed to 22,650 at year-end. It reported 23.8 million transactions with a value of €1,165 million.

## **EMV Implementation Background**

According to SIBS, the adaptation of ATMs to the EMV standard was complete in March 2007. Unicre reported 100% conversion to EMV for ATMs and 99% conversion for its payment terminals as of 2007.

Portugal has moved comparatively quickly with EMV implementation across its acceptance network. According to SIBS, all of its ATM network and 99% of the EFTPOS network were EMV-compliant by end-2014. However, not all Multibanco cards were EMV-compliant at end-2014, though the proportion rose from 66% at end-2009 to 88% at year-end. One reason is that e-money cards, cards giving access to e-money accounts, and private label cards are usually not issued as chip cards.

## **PMB Electronic Purse**

Launched by the Portuguese banks through SIBS in 1994, PMB (Portamoedas Multibanco) was the Portuguese electronic purse. The SIBS ATM network provided loading facilities and purchase transaction statement printing. Initially issued as a stand-alone card, Portuguese banks issued debit cards combined with the purse.

The Portuguese experience illustrated the difficulties, evident across Europe, in building purse usage into routine cardholder behaviour. The number and value of loads and payments fell steadily over the period 1997-2001, despite substantial growth in the acceptance network.

PMB was phased out by the end of 2005. It was replaced by prepaid functions on cards.

# PAYMENT CARDS YEARBOOK 2019-20 EDITION

Updated to include statistical data  
available as at end-2018

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**Published January 2020**