

# 2020

## PAYMENT SYSTEMS REPORT



BANK OF THAILAND



Thailand's  
Payment Systems :  
**A New Normal**



BANK OF THAILAND

## Payment Systems Report 2020



# Executive Summary

In 2020, the rapid spread of the COVID-19 pandemic had stirred significant changes globally and in Thailand. The pandemic has affected almost all aspects, including economic, investment, trade, tourism, public health, business operations, and people's daily lives. Increasingly, people have shifted towards online platforms to minimize touching and ensure social distancing to cope with the outbreak. Working from home, shopping online, and making digital payments to avoid touching banknotes and coins have become new familiarities, which have pushed the business sector to adjust to keep their businesses going. While the government sector has also turned to electronic transfer channels to deliver financial reliefs to alleviate the impact of COVID-19 for Thais.

The changing behaviors have led digital payments to become the most preferred payment choice fulfilling consumers' needs. In 2020, mobile banking/internet banking transactions grew by more than 70 percent, or an increase of more than 14.2 million registered accounts. These new conveniences that have become part of the new normal are expected to lead to the continued growth of digital payments.

Over the years, the Bank of Thailand (BOT) has laid the foundation for digital payments by fostering the continuous development of digital payment infrastructure and services. The most prominent and widely accepted services are the PromptPay and QR payments, which have become vital services supporting payment transactions during the COVID-19 pandemic, allowing the smooth functioning of Thai economic and financial activities.

In 2020, the BOT continued to focus on advancing Thai payment systems in preparation for the new normal in payments. The BOT has **endorsed the adoption of the international payment standard ISO 20022 and its applications in supporting end-to-end digital transactions** such as the development of smart financial and payment infrastructure for the business sector. The BOT also **enhanced cross-border payment connectivity to expand QR payments**, allowing Thais and foreign travelers to make payment conveniently, quickly, and securely. Further, the BOT has **encouraged payment data integration** to facilitate financial services developments and more efficient policy implementation and supervision. The BOT also **promoted the adoption of modern technologies in financial innovation development**, such as using biometrics technology to enhance the credibility of customer identity verification and authentication.

Moreover, the BOT has **emphasized overseeing important payment systems** to ensure that these systems are stable, secure, continually advanced, and capable of supporting economic and financial activities. The BOT **regulates and supervises designated payment business providers** to ensure that payment services are safe, reliable, continually available in both normal and crisis conditions, and under sound risk management that complies with international standards. The BOT also insisted that payment business providers maintain adequate and appropriate customer protection, strengthen readiness for technology risks, and educate the public on digital payments to foster their understandings of and confidence in the services.

The BOT strives for Thai payment systems and services that are convenient, fast, and supportive of the changing behaviors and business models while having appropriate risk management to support Thailand to get through the COVID-19 pandemic and promoting **digital payments as the most preferred choice of payment for the Thais**.

## Vision

under the Payment Systems Roadmap No.4

“

### Digital Payment

is to be the most preferred choice in efficient, safe, low-cost payment systems that meets users' needs.

”

## Five development frameworks

### Interoperable Infrastructure

Developing infrastructure that is interoperable, secure, and in compliance with international standards to support innovations and cross-border connectivity.

### Innovation

Promoting the development of various service innovations that meet users' needs.

### Inclusion

Improving access, raising awareness and understanding, and promoting continuous usage.

### Immunity

Maintaining stability, sound risk management, responsive supervision and examination, and customer protection.

### Information

Integrating payment data for utilization, develop data integration and analysis by using technologies.



# Payment Systems Committee

## Chairman

**Mr. Sethaput Suthiwartnarueput**

Governor (Left)

## Vice Chairman

**Mr. Ronadol Numnonda**

Deputy Governor Financial Institutions Stability (Right)



## Payment Systems Committee (PSC)

is one of the main committees of the Bank of Thailand and is responsible for formulating policies on payment systems for the Bank of Thailand that is consistent with business developments and technological advancement.



## Committee Member

**Mr. Paiboon Kittisrikangwan**

Deputy Governor Corporate Development



## Committee Member

**Mr. Payong Srivanich**

Chairman, the Thai Bankers' Association



## Committee Member

**Mr. Vuttikrai Leewiraphan**

Director General Department of Intellectual Property



## Committee Member

**Mr. Sak Segkhoonthod**

Digital Transformation Consultant, Electronic Transactions Development Agency



## Committee Member

**Mr. Auttapol Rerkpiboon**

President and Chief Executive Officer PTT Public Company Limited



## Secretary

**Miss Sirtida Panomwon Na Ayudhya**

Assistant Governor Payment Systems Policy and Financial Technology Group

As of 30 June 2021



## Key Payment Statistics in 2019 – 2020

	2019	2020	
Total population	66.6	<b>66.2</b>	Million
Nominal Gross Domestic Product (GDP)	16,898.1	<b>15,698.3</b>	Billion Baht

### Technological Infrastructure

Number of fixed-line telephone numbers	5.4	<b>5.0</b>	Million
Number of mobile phone subscribers	129.6	<b>116.3</b>	Million

### Payment Statistics

Number of Thai commercial bank branches	6,491	<b>6,150</b>	Branches
Number of Foreign commercial bank branches	17	<b>17</b>	Branches
Number of 6 Specialized Financial Institutions branches	2,477	<b>2,475</b>	Branches
Number for Automated machines (ATMs/CDMs) <sup>1</sup>	66,652	<b>65,132</b>	Terminals
Number for EFTPOS terminals <sup>2</sup>	876,149	<b>881,337</b>	Terminals
Number of ATM cards	15,318,234	<b>10,688,019</b>	Cards
Number of Debit cards	64,773,018	<b>64,051,972</b>	Cards
Number of Credit cards	23,998,653	<b>24,603,787</b>	Cards
Number of Mobile/ internet banking accounts	89,489,519	<b>103,643,083</b>	Accounts
Number of PromptPay registration	49,761,490	<b>56,241,457</b>	IDs
Currency in circulation per capita	23,901.3	<b>27,387.5</b>	Baht per person
Volume of cheque usage	99,768,548	<b>82,663,385</b>	Cheques
Monthly average value of credit card payments <sup>3</sup>	5,126	<b>4,469</b>	Baht per card
Monthly average value of debit card payments <sup>4</sup>	303	<b>232</b>	Baht per card
Monthly average value of cash withdrawals via debit card	8,820	<b>7,786</b>	Baht per card
Monthly average value of cash withdrawals via TM card	3,380	<b>3,266</b>	Baht per card

<sup>1</sup> Automated machines include Automated Teller Machines (ATMs) and Cash Deposit Machine (CDM)

<sup>2</sup> EFTPOS (Electronic Funds Transfer at Point Of Sale) or EDC (Electronic Data Capture)

terminals are machines that banks or service providers install at retailers to transmit payment transactions made via debit and credit cards

<sup>3</sup> Refers only payments for goods and services made with domestically issued credit cards at EFTPOS terminals in Thailand and overseas, including with domestic spending of foreign credit cards.

<sup>4</sup> Refers only to payments for goods and services made with domestically issued debit cards at EFTPOS terminals in Thailand and overseas, including with domestic spending of foreign debit cards.





## Bank Branch

No. of bank branches (Thousand branches)

**8.6**



## Card

No. of ATM cards (Million cards)

**10.7**

No. of Debit cards (Million cards)

**64.1**

No. of Credit cards (Million cards)

**24.6**

No. of EDCs (Thousand terminals)

**881.3**



## Mobile / Internet Banking

No. of accounts (Million accounts)

**103.6**

Total volume (Million transactions)

**9,898.7**

Total value (Trillion Baht)

**66.9**



## QR Code

No. of Acceptance points (Million points)

**6.9**



Registered with Citizen ID  
(Million IDs)

**34.3**

Registered with mobile phone number  
(Million IDs)

**21.1**

## PromptPay

Registrations (Million IDs)

**56.2**

Transaction volume per day  
(Million transactions)

**20.2**

Transaction value per day  
(Billion Baht)

**74.3**

# Payment in Thailand 2020

# Payment in Thailand 2019

No. of bank branches (Thousand branches)

**9.0**

No. of ATM cards (Million cards)

**15.3**

No. of Debit cards (Million cards)

**64.7**

No. of Credit cards (Million cards)

**24.0**

No. of EDCs (Thousand terminals)

**876.1**

## Mobile / Internet Banking

No. of accounts (Million accounts)

**89.5**

Total volume (Million transactions)

**5,609.7**

Total value (Trillion Baht)

**54.3**

## PromptPay

Registrations (Million IDs)

**49.8**

Registered with Citizen ID (Million IDs)

**30.3**

Registered with mobile phone number  
(Million IDs)

**18.9**

Transaction volume per day  
(Million transactions)

**9.6**

Transaction value per day (Billion Baht)

**47.8**

## QR Code

No. of Acceptance points (Million points)

**6.0**



# Content

**02**

Executive  
Summary

**04**

Payment  
Systems  
Committee

**06**

Key Payment  
Statistics  
in 2019-2020

**15**

10 Major  
Developments  
in 2020

## **16** I. Insight into Thai payments during the COVID-19 pandemic

**18**

**Digital Payment**  
How It Helps Thais during  
the COVID-19 crisis



**22**

**The BOT**  
and its roles in payments



## **26** II. The new normal in the world of Thai payments

**28**

**Leveraging the  
ISO 20022 standard**  
to uplift Thai payments to  
facilitate end-to-end digital  
transactions



**30**

**Accelerating  
payment innovation**  
with financial technology



**40**

**Opening Thailand**  
through cross-border  
payment connectivity



## **44** III. Oversight of payment system stability

**48**

**Supervision**  
of important payment systems



**52**

**Supervision**  
of designated payment business providers





## 60 IV. “THE WAY WE PAY” Key trends in payment service

62

The new normal  
gives rise to Thai  
digital payments



01

70

Thais prefer  
**online payments**



02

76

Spending behaviors  
at the point of sale (offline)  
have changed



03

80

**Cash**  
is no longer the preferred payment  
option for Thais



04

84

**Offline payment channels**  
have declined in line with the changes  
in Thais' behaviors



05

88

## V. Appendix

90

01 Glossary and  
abbreviation

91

02 Statistical  
tables

102

03 Notes of  
statistical  
tables

## List of Boxes

- 20 BOX 1 – COVID-19, a major catalyst for the digital economy
- 24 BOX 2 – “Data” a new treasure in the digital age
- 32 BOX 3 – Did you know...Thai people can now verify their identities digitally via the NDID platform for online transactions
- 34 BOX 4 – Bangkok FinTech Fair 2020 “Digital Transformation for the New Normal: Getting Ready, SMEs Going Digital”
- 38 BOX 5 – What is Cryptocurrency?
- 55 BOX 6 – How should entrepreneurs adapt and move forward during the COVID-19?
- 57 BOX 7 – Consumers must be aware of and ready to respond to cyber threats in the new normal.
- 58 BOX 8 – Preparing the Thai financial sector for personal data protection laws

## List of Figures

- 20 Figure 1 – Key digital payment statistics
- 42 Figure 2 – Cross-border payments or remittance services connectivity
- 54 Figure 3 – Overview of designated payment business providers at the end of 2020
- 64 Figure 4 – Thailand's digital payment transactions per capita per year
- 65 Figure 5 – Volumes of e-Payment per capita of various countries
- 67 Figure 6 – Proportions of payments during 2016 – 2020 (General Public)
- 69 Figure 7 – Proportions of payments during 2016 – 2020 (Business and Government Sectors)
- 72 Figure 8 – Volume of point of sale (offline) and online transactions during 2016–2020
- 74 Figure 9 – Volume and value of online transactions during 2016–2020 by transaction type
- 75 Figure 10 – Volume of online transactions via electronic cards during 2018–2020
- 78 Figure 11 – Volume and value of point of sale (offline) transactions during 2016–2020 by transaction type
- 79 Figure 12 – Volume of electronic card payments at the point of sale during 2018–2020
- 82 Figure 13 – Volume and value of cash withdrawals during 2016–2020
- 82 Figure 14 – Proportions of cash withdrawals during 2018–2020 classified by channels
- 83 Figure 15 – Volume and value of cash deposits during 2016–2020
- 86 Figure 16 – Payment service channels in 2020
- 87 Figure 17 – Numbers of ATMs/CDMs and EDCs per million capita of various countries



# 10 Major developments in 2020



## Mobile Banking

Thailand's usage of mobile banking application rank No. 1 in the world\* with 68.1% of reported users each month.

\* Based on the Digital 2021 Global Overview Report.

02



## PromptPay

PromptPay hit a new high of 27 million transactions per day\*, doubled from last year.

\* Data as of December 2020

03



## National Digital ID Platform

The National Digital ID platform service is extended to the capital market, insurance, and credit bureau by leveraging information when opening a bank account.

04



## Cross-Border QR Payment

Cross-border QR payments enables Thais to make payments in Singapore, Japan, and Laos conveniently, securely, and at a lower cost.

05



## FinTech

Bangkok FinTech Fair 2020 exhibited the business sector's digital transformation for the new normal.

06



## Online Platform

Thais shift their behaviors and business strategies towards online channels, including online shopping, online food delivery, and e-donation, owing to the COVID-19 pandemic being a key factor.

07



## Biometrics

Biometrics technology enables Thais to open cross-bank accounts via digital channels by more than 100,000 accounts\*

\* Data as of December 2020

08



## ISO 20022

The ISO 20022 standard has been adopted to increase the efficiency of Thai payment systems and services.

09



## Cyber Hygiene


Cybersecurity responses have been strengthened by encouraging all payment business providers to maintain the necessary cyber hygiene of their information technology systems.

10



## Oversight

The oversight of payment business providers on readiness for the COVID-19 pandemic helped ensure services and businesses continuity with no impact on customers.

A close-up photograph of a person's hand holding a credit card. The person is wearing a blue long-sleeved shirt. The background is blurred, showing what appears to be a white chair. The image is part of a presentation slide, with a white background on the left and a blue background on the right.

# Insight into Thai payments

during the **COVID-19** pandemic



01

## Digital Payment

How it helps Thais  
during the COVID-19 crisis

“



## Digital Payment

becomes the preferred choice that meets  
all sectors' needs which can be made  
anywhere anytime, in a convenient,  
fast, and secure manner”

”

Since early 2020, the COVID-19 pandemic has affected the world and Thailand in various aspects, including economics, investment, trade, tourism, and public health. Inevitably, it drastically changes businesses' way of working and people's way of life.

Government measures in responding to the pandemic; for example, curfews, temporary closures of venues such as shopping malls, movie theaters, restaurants, markets, shops, and schools, and work from home policy together with efforts to reduce cash usage have contributed to the shift in public behaviors towards online platforms. Customers started from trials to new familiarities, whether online food delivery, online shopping, or e-donation. Similarly, businesses needed to adjust and move online for survival.

In addition, the government opted to distribute welfare payments digitally for quick and precise impacts during the COVID-19 pandemic. For instance, financial reliefs were transferred via the PromptPay to Thais affected by the COVID-19 crisis. Similarly, the stimulus package under the co-payment scheme was launched through the government's e-Wallet to add conveniences for the general public and small businesses to make or accept payments. Such initiatives play a vital role in encouraging people to adopt digital payments.

**“Digital payment” therefore becomes the preferred choice that meets all sectors' needs.** It has been an essential enabler for Thai people to get through the COVID-19 pandemic smoothly as **payments can be made anywhere anytime, in a convenient, fast, and secure manner** with lower costs. The services are available on various platforms. Prominent ones are fund transfers and payments via PromptPay, QR payments, online credit and debit card payments, and e-money.



# Key digital payment statistics

Figure 1 : Key digital payment statistics

## Digital Payment

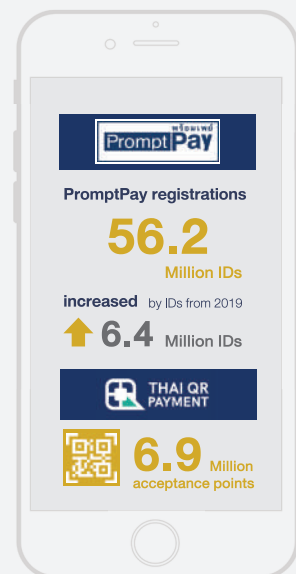
How it helps Thais during the COVID-19 crisis

Data as of December 2020

### Transaction per day

volume  
**20.2** Million transactions  
↑ **109.8%** YoY

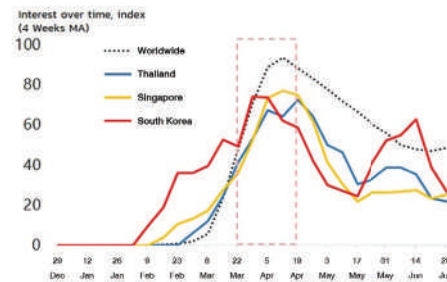
value  
**74.3** Billion Baht  
↑ **55.1%** YoY



The COVID-19 pandemic has raised public concerns regarding touching and using cash. Search statistics related to "Cash and COVID" drastically rose during March-April 2020, when the first wave of the pandemic hit Thailand, similar to those reported in other countries.

Such concerns have induced more consumers to switch to online channels. During the COVID-19 pandemic, Thai digital payments have increased remarkably. Particularly, mobile and internet banking transactions grew by more than 72%. Similarly, funds transfers via PromptPay jumped drastically by 109.8% from the previous year. These growths are anticipated to continue since more people have become accustomed to digital payments.

### Search statistics related to "Cash and COVID"

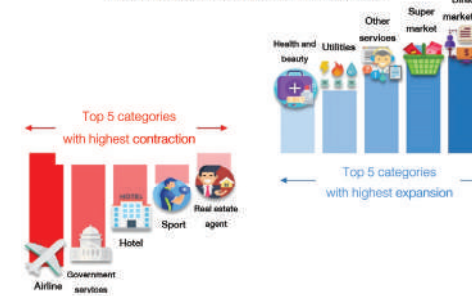


Source: Google Search Trend as of July 4, 2020; Index closing to 100 shows the higher searches. Keyword "Cash Covid" for worldwide and Singapore; "เงินสด โควิด" for Thailand and "현금 코로나" for South Korea

An in-depth analysis of Thais' electronic cards payments reveals that the COVID-19 pandemic has induced drastic growths for certain business sectors such as supermarkets, health and beauty services, and direct marketing, especially those sold online. On the other hand, many sectors experienced shrinkages especially tourism-related businesses.

### Expansion of electronics cards payments by category

First quarter of 2020 compared to the same period last year



Note: Direct marketing such as monthly subscription services and insurance services  
Source: Bank of Thailand

Business and consumer shifts to digital payments, together with supportive government policies, have accelerated the pace of Thailand's transition into the digital economy. The BOT prepares to cooperate with relevant stakeholders to push forward the development of Thai payment systems that are modern, efficient, stable, safe, and able to accommodate Thailand under a new context in the new normal world.

## Covid-19, a major catalyst for the digital economy

Box 1 : Covid-19, a major catalyst for the digital economy



Read more at  
"Moving towards a cashless economy : Consumer behavior and opportunities of Thai businesses during COVID-19" (Thai version only).

[https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article\\_21Jul2020.aspx](https://www.bot.or.th/Thai/ResearchAndPublications/articles/Pages/Article_21Jul2020.aspx)



COVID-19 pandemic is a catalyst for the shift in public behaviors and business strategies towards online platforms, whether online food delivery, online shopping, or e-donation.





## The BOT and its roles in payments

The COVID-19 pandemic has inevitably led a majority of the Thai people to migrate to online platforms, including digital payments. Hence, the oversight and supervision of Thai payment systems to ensure their stability and capability in supporting public, government, and business transactions, and to enable payments those being critical drivers for Thai economic and financial activities to advance without interruption, is one of the BOT's crucial roles.

For Thai payment systems to advance smoothly, one critical determinant is the development of payment infrastructures those are up to standard, modern, and capable of supporting a wide range of digital payment services. Recently, PromptPay has been launched as the core infrastructure for retail payments, enabling the services to be convenient, fast, lower cost, and accommodative of a large volume of transactions. PromptPay also permits the development of various new extended payment services, such as cross-bank bill payments, PayAlert, government welfare payments, individual and corporate income tax refunds, and the increased fund transfer ceiling for high-value transactions made by the public and business sectors. In particular, prominent services are the more convenient QR payments and cross-border QR payments. Currently, there are nearly 7 million QR payment acceptance points nationwide, both in stores and online.

Efforts to increase convenience, add choices, and promote financial access, allowing the public and businesses to transact anytime and anywhere, especially during the COVID-19 pandemic, resulted in the average volume of funds transfers via PromptPay of 20.2 million transactions per day, equivalent to the average value of 74.3 billion baht. The transaction volume peaked at 27.1 million transactions per day, with an anticipated upward trend as consumers leap forwards to digital payments.

Concurrently, the BOT oversees payment systems to ensure their capacity and stability in supporting economic and financial activities and their solid cybersecurity arrangements to foster confidence in Thai payment services.

In addition to promoting developments in payment infrastructure and payment services innovations, the BOT has focused on building public understandings of and prudence in digital payments usage. The BOT continued to educate the public on essential topics such as tips for using mobile banking applications, developments in digital payments, and interesting Thai payment statistics through the Payment Insight: Bi-monthly report. The BOT also adjusted banknotes management practices to reduce the risk of virus transmission via banknotes by separately storing banknotes deposited by commercial banks for an extended period and increasing the supply of new banknotes in circulation. Moreover, the BOT also raised public awareness on hygienic practices of using banknotes.



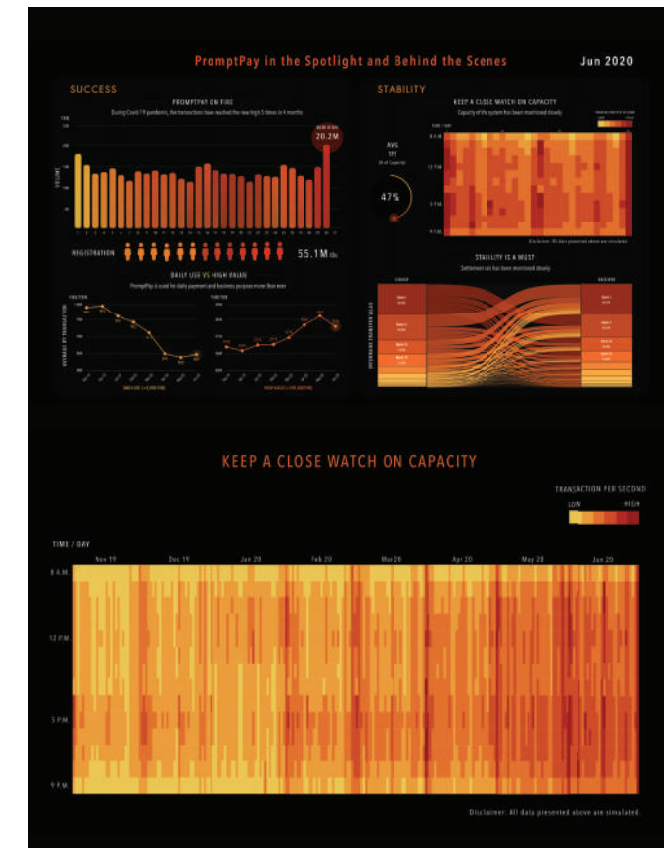
# “Data is the new oil”

“Data is the new oil” is a phrase stressing the importance of data, comparing its value to oil, a well-known treasure of great value and benefit. The digital age has produced a massive amount of data, which can be analyzed with modern tools and techniques for various advantages. Key examples include improving understanding of consumers' behaviors, supporting business strategy formulation and product development to satisfy customers' needs, and facilitating more effective implementation of development policies and supervisory framework.

The BOT recognizes the importance of data and has promoted its applications in policy formulation and supervision, particularly payment data that help uncover public and business spending behaviors. In October 2020, the BOT organized the Data Viz Art project to promote the presentation of complex data in an “easy-to-understand” and appealing format.

## PromptPay in the spotlight and behind the scene

presents the "In the spotlight: PromptPay's Success" picture through illustrations of rising transaction volumes in contrast with declining average values per transaction, suggesting increased adoption of PromptPay in daily life, and the "Behind the scenes: Systems' Stability" picture through a system availability dashboard designed for close monitoring of system stability.

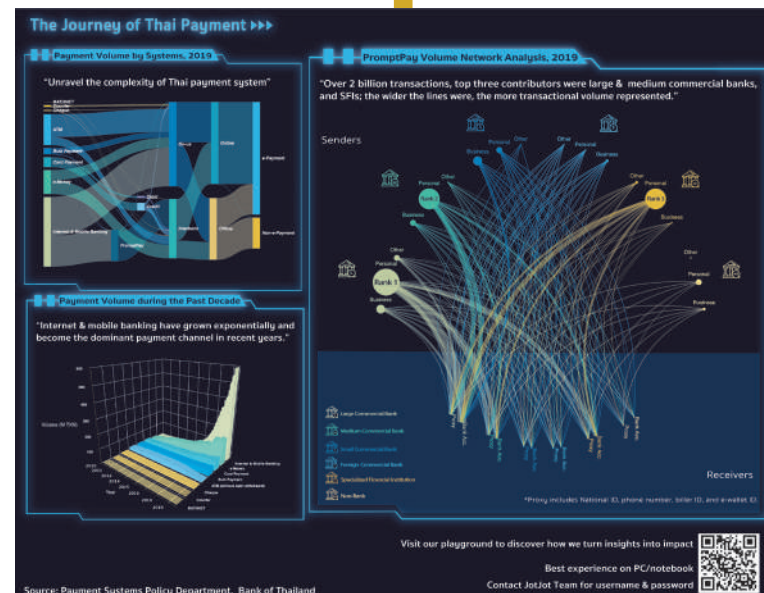


Scan QR Code  
for full video



# “Data” a new treasure in the digital age

Box 2 : “Data” a new treasure in the digital age



## The journey of Thai payment

illustrates an overview of payment transactions and the linkages of payment data in various dimensions, together with payment trends and the network diagram that delves from the PromptPay data. These graphs help increase understanding of overall payment transactions, whether they are originated from individuals or businesses and transacted through Thai commercial banks or foreign banks.



# The New Normal

in the world of  
Thai payments





# 01

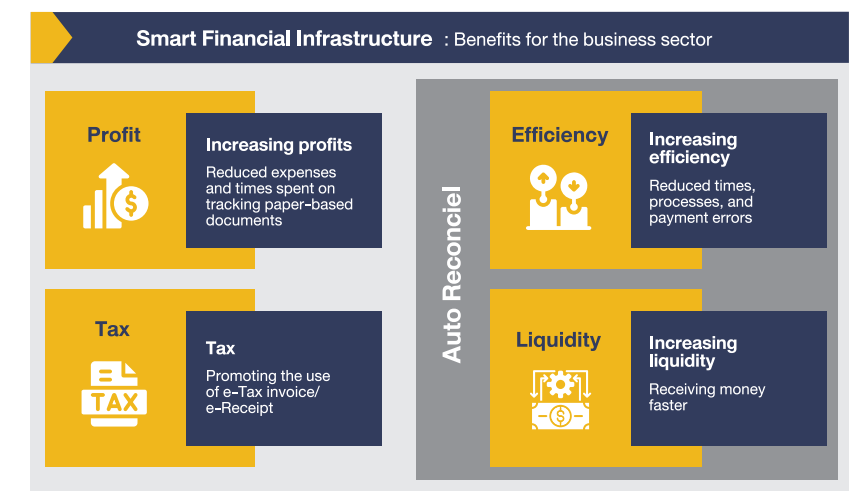
## Leveraging the ISO 20022 standard to uplift Thai payments to facilitate end-to-end digital transactions

The BOT has emphasized on developing efficient and reliable payment systems infrastructure to support large transactions volume uninterruptedly and securely. In this connection, the BOT endorsed the adoption of the ISO 20022 standard to enhance digital payments capability to facilitate end-to-end transactions. The new standard is expected to increase efficiencies of business processes, reduce costs, paperwork, and human errors, and promote digital footprint creation in the financial system, which will benefit the extension of future financial services.

The ISO 20022 standard is a common message standard for transmitting business and payment data. It helps increase efficiency, reduce costs, promote the business sector's competitiveness, and support new extended services innovations and international connectivity.

Previously, the BOT has continued to promote the adoption of the ISO 20022 standard for important payment systems. The standard was first implemented into the MyPromptQR<sup>1</sup> service at the end of 2019 and later introduced to the new bulk payment for business in the first quarter of 2021. The BAHTNET system will also migrate to the ISO 20022 standard in 2022.

In addition, in cooperation with commercial banks and the business sector, the BOT has leveraged the use of ISO 20022 standard to develop smart financial and payment infrastructure for the business sector to seamlessly connect digital payments and digital business processes. The standard facilitates the transmission of other digital data along with payments, such as e-Bill, e-Tax invoice, and e-Receipt. Such integration enables real-time account reconciliation, shortens and quickens business processes while allows convenient, fast, and accurate payments, thereby increasing businesses' efficiency and liquidity.



<sup>1</sup> MyPromptQR is a payment made via a mobile banking application where customers present the QR code generated from their bank accounts to the merchants to scan for payments.



## Accelerating payment innovation with financial technology

Financial technology (FinTech) plays a significant role in the digital age. It has become essential for increasing business opportunities and developing new financial innovations that promote more effective financial inclusion at lower costs.

The BOT encourages the adoption of FinTech for financial innovation developments under the BOT's regulatory sandbox. The sandbox allows banks and non-bank business providers to experiment innovative financial services with actual customers in a limited environment, under proper risk control and close supervision by the BOT before a full-scale launch. In 2020, the BOT pushed forward the development of the following significant financial innovations.

### 1

## Biometrics

**The use of Biometric technology for customer identity verification and authentication.**

The BOT promoted the adoption of biometric technology to enhance efficiency and security in financial services. Both banks and non-banks have experimented with the use of biometric technology for identity verification and authentication for bank and e-wallet account opening in the BOT's regulatory sandbox. The technology helps strengthen the Know-Your-Customer (KYC) process, improve security, enhance fraud prevention, and promote financial access through digital platforms. At present, several service providers have exited the regulatory sandbox and offer the services publicly. In addition, the BOT issued the guideline for the application of biometric technology in financial services on July 22, 2020, to guide financial service providers under the BOT's supervision to appropriately and cautiously adopt the technology and comply with international standards.

Moreover, the BOT has fostered digital identity verification and authentication service via the National Digital ID (NDID) platform. Commercial banks participated in the BOT's regulatory sandbox to test cross-bank identity verification and authentication services via the NDID platform for bank account opening in February 2020. In November 2020, the scope was expanded to include cross-entity identity verification and authentication services in the capital and insurance markets, as well as credit report requests for lending.



## Did you know...

### Thai people can now verify their identities digitally via the NDID platform for online transactions



**Box 3** : Did you know...Thai people can now verify their identities digitally via the NDID platform for online transactions



For digital transactions to be convenient, fast and secure, pre-transaction identity verification is of great importance. The

process ensures the true identity of account owners, thus permitting secure digital transactions. In cooperation with the private sector, the government has developed the National Digital Identity (NDID) platform as an infrastructure to support data exchanges among participants for identity verification and authentication based on the identity owner's consent. Customers no longer need to present themselves at bank branches but they will be able to transact or apply for financial, business, and government services digitally with convenience and security. These processes provide less paper duplication and better forgery and identity theft prevention and support offering of services through extensive digital channels.

The project, initiated as a pilot within the banking sector, allows customers to open saving accounts with new banks via mobile banking application without visiting a bank branch if the customer has previously gone through identity verification and authentication at other participating banks. The bank holding the customer information will send the required data to the requesting banks, given the customer's consent. Customers, therefore, will be able to open a bank account without the hassle of having to visit a bank branch.

Currently, eight commercial banks offer digital identity verification services through the NDID platform, namely Bangkok Bank Plc, Krung Thai Bank Plc, Bank of Ayudhya Plc, Kasikornbank Plc, CIMB Thai Bank Plc, TMBThanachart Bank Plc, Siam Commercial Bank Plc. and Kiatnakin Phatra Bank Plc. The services support opening of savings accounts, securities trading accounts and mutual fund accounts, as well as purchasing insurance and requesting credit reports from the National Credit Bureau Co., Ltd., through websites or mobile applications of service providers participating in the NDID system. Furthermore, the service also supports electronic personal income tax filing (e-Filing) and tax deduction verification (My Tax Account) through the Revenue Department's website. Customers interested in digital identity verification services can visit the abovementioned banks' and service providers' websites for more details.

As of 2020, more than 100,000 saving accounts have been opened through the NDID platform and services supported by NDID platform have been extended to government and private sectors. Given that the technology is novel and needed to be jointly tested among service providers, commercial banks have tested the application of biometric technology for identity verification and authentication via the NDID platform under the BOT's regulatory sandbox. The BOT will conduct a careful evaluation before permitting wide-scale usage and continue to promote service expansion to accommodate government and other financial services, as well as help drive the development of corporate identity verification in preparation for the digital era.

2

## Peer-to-Peer Lending Platform

### Electronic peer-to-peer lending platforms.

A Peer-to-Peer lending platform is an online lending platform that takes an intermediary role in matching lenders and borrowers. It also facilitates loan contract creation, fund disbursement and repayment and debt collection. The platform provides borrowers with convenient access to funding at a cost proportionate to their risk profile and also benefits lenders with additional investment options. At present, three peer-to-peer lending platforms have participated in the BOT's regulatory sandbox. The BOT puts an emphasis on developing reliable and efficient centralized platforms with robust credit appraisal processes and proper risk management, including technology, security and personal data protection risks, in addition to adequate consumer protection. Once the participants are granted exit from the sandbox, the BOT will submit the cases for the Ministry of Finance's further approval.

3

## FinTech

### Promoting knowledge on innovation and financial technology

The BOT organizes the Bangkok FinTech Fair annually to educate the public on financial technology developments, foster confidence in financial innovations and encourage broader adoptions of financial services to facilitate transformation to the digital era. In 2020, the BOT organized the Bangkok FinTech Fair 2020 on September 18-19, 2020, under the concept of "Digital Transformation for the New Normal: Getting Ready, SMEs Going Digital" to encourage businesses and SMEs to quickly adapt to the digital era and prepare for the new normal by implementing business processes that effectively respond to the new lifestyle.



# Bangkok FinTech Fair 2020

“Digital Transformation for the New Normal : Getting Ready, SMEs Going Digital”

Box 4 : Bangkok FinTech Fair 2020  
“Digital Transformation for the New Normal : Getting Ready, SMEs Going Digital”

## Keynote speech

by Dr. Veerathai Santiprabhob,  
Governor

## The Bangkok FinTech Fair

has been held consecutively for the third year. This year, the event was held online for the first time via the BOT's Facebook page on September 18-19, 2020, under the concept of "Getting Ready, SMEs going digitals."

The BOT aimed to encourage the business sector, especially SMEs and the government sector, to adjust to new challenges in the new normal with support from financial service providers and FinTech companies in comprehensive business process transformation. The highlights included the discussion among business leaders, SME entrepreneurs, and founders of Thai platforms sharing their experiences in applying digital applications to aid their adaptation, especially

during the COVID-19 pandemic. The panel also discussed key innovations such as the BOT's direction on Central Bank Digital Currency (CBDC). In addition, the event featured practical innovations and services offered by financial service providers and FinTech companies that can assist businesses in their digital transformation, such as payment services, credit services, ERP systems, and digital marketing.



## Highlights from The Bangkok FinTech Fair 2020

### 1 Transforming to adapt to the new normal

For long-term survival, businesses should apply digital technology to transform their businesses in five strategic aspects: altering attitude, adjusting strategies, modifying workflows, utilizing data, and enhancing staff skills. Further, they should seek opportunities by leveraging technology or digital platforms to enter new online markets.

### 2 Reorganizing businesses with FinTech

Directions and trends in FinTech serve business needs in the new normal where the COVID-19 pandemic prompted digital payments to be no longer an option but a necessity for businesses from increasingly preferences in transacting financial services digitally. FinTech service providers also introduce digital products that help increase businesses' liquidity by providing convenient and fast access to credits at a cost proportionate to their risk levels using Artificial Intelligence (AI) technology and alternative information. The discussion also covered regulations on the provision of digital personal loan services and directions of Central Bank Digital Currency (CBDC) policies that should consider the coexistence of public and private digital currencies to support innovation in the financial system.

Session  
“Digital payment no longer an option... but a necessity for businesses”



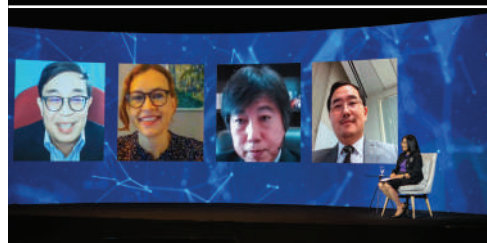
Session  
“5 things to adapt th the new normal”



Session  
“Thai digital platform... move forward during the COVID-19”



Session  
“CBDC : The Future of Money”





#### Session

"Digital platform :  
From strategy to practice"

### 3 Shifting mindset and embracing business transformation with tools and data

Fintech plays a vital role in supporting SMEs to utilize data and providing tools that help businesses stand out and differentiate themselves from competitors and increase productivity and service quality to satisfy customers' needs. Examples include accounting data collection, data analysis, the use of AI in productivity forecasting, the enhancement of e-Commerce business, and the application of tools such as robotics and dashboards in design, manufacturing, marketing, and logistics industry. The key is applying the right analytics and perspective to extract insights that suit the business.

### 4 Digital solutions as an enabler for businesses to adapt to the digital age

Fintech companies, financial institutions, and leading technology companies presented various digital solutions beneficial to businesses to adjust to the new lifestyles. Key examples include:

#### Data analytics tools

Available to businesses ranging from simple to complex tools

#### Synergies between financial institutions and FinTech companies

Creating projects and services that will help SMEs go digital completely.

#### Digital marketing

Presenting 7 things that SMEs should know in digital marketing: (1) knowing and learning from customers; (2) advertisement is not all answers; (3) actual customers are the most reliable; (4) converting prospects into customers quickly; (5) collecting data for analysis; (6) setting budgets and spending according to sales; and (7) using experts is the surest way

#### Accounting and information management

Such solutions help set up accounting and data management system to quicken business processes, reduce costs and errors, and generate data to help grow a business easily.

#### Personal data management

Responding to business needs in managing customers' and employees' information in preparation for the personal data protection law to build confidence in business operations.

Accounting and  
Information management

#### Data analytics tools



Synergies between  
financial institutions and  
FinTech companies

#### Digital marketing



#### Personal data management





# What is Cryptocurrency?

Box 5 : What is Cryptocurrency?

“



## Cryptocurrency

”

### “Cryptocurrency”

is a new term in the financial technology community that has continuously received attention. It is a new form of money created by a mathematical algorithm that requires computer decryption to obtain money. It employs new technology, i.e., Blockchain, to create conditions to validate and record the movement of money (smart contracts) and distribute those conditions to participants within the currency network to validate and record transactions without intermediaries such as financial institutions getting involved. Two main types of cryptocurrencies are:

1

## Private Digital Currency/ Private Coin

Using Blockchain and smart contracts to carry out faster and more convenient transactions, two types of privately-issued cryptocurrencies are (1) Blank coins such as Bitcoin, which have no underlying assets and are highly volatile, and may be used primarily for speculation; and (2) Asset-backed/ Fiat-backed digital currency/ Stablecoin, such as USD Tether and Diem (formerly known as Libra), which have underlying assets to reduce volatility in value.

2

## Central Bank Digital Currency (CBDC)

Currently, various central banks are interested in the issuance of digital currencies. In Thailand, the BOT has initiated the “Inthanon Project” to undertake research and development on digital currencies at the financial institution level (wholesale CBDC). The project aims to evaluate approaches to implement CBDC in Thai payment systems to increase efficiency and reduce costs of inter-institutional payments. The BOT plans to collaborate with the private sector to research digital currencies at the general public level (retail CBDC) to assess the benefits and appropriate applications of CBDC.



# 03

## Opening Thailand through cross-border payment connectivity

Thailand's economic and financial activities take place domestically and internationally in terms of businesses, trades, investment, and tourism. In the past, the BOT has promoted the development of cross-border payment and remittance services to facilitate public and business payments through cross-border funds transfers via banks and non-banks authorized intermediaries. However, transactions are still subject to time constraints and high costs.

Through modernized and standardized payment infrastructure, the BOT has endorsed cross-border payments and funds transfer connectivity under the ASEAN Payment Connectivity cooperation. The efforts aim to enable cross-border transactions that are convenient, fast, safe, and at a lower cost to increase flexibility and support various economic and financial activities effectively through cooperation at the central banks, Bankers' associations, and payment system providers' levels. Further, the BOT has encouraged banks and non-banks to enhance services using new technologies and platforms, which include:

### 1

## Interoperable QR Payment

The service supports payments between Thailand and other countries, especially in the ASEAN region. The service enables Thai tourists to pay for goods and services at stores abroad or foreign tourists to make payments in Thailand by scanning QR codes at stores. The cross-border QR payments are now available in many countries<sup>2</sup>, including Singapore, Japan, Laos, and Cambodia, launched in the first quarter of 2020.

In 2021, Thailand plans to connect the payment service with additional countries, including Vietnam, Indonesia, and Malaysia.

<sup>2</sup> Terms of services and conditions, including participating commercial banks, may vary in each country.



2

## Real-Time Remittance

The service supports retail funds transfers such as remittances made by foreign workers, deposits for overseas products purchases, and business funds transfer available in the next phase. In 2021, Thailand's PromptPay system has been linked to Singapore's PayNow system. Customers can transfer funds via mobile banking applications of the participating commercial banks using the transferee's mobile phone number. The service is convenient, fast, and cheaper than the current international remittance services.



## Cross-border connectivity Payments or remittance services

Figure 2 : Cross-border payments or remittance services connectivity

Data as of December 2020

Note : Terms of services and conditions, including participating commercial banks, may vary in each country.  
Source: Bank of Thailand



# Oversight

of payment system stability





One of the BOT's missions is to oversee payment systems to promote their stability, reliability, continuous development, and capability to support economic and financial activities in all sectors. The BOT attaches great importance to the oversight and supervision that keep pace with widely accepted technology advancement, various payment services, and changing risk environments to promote consumer confidence.

The BOT payment oversight following the Payment Systems Act B.E. 2560 (2017) consists of 2 key aspects. One is **the supervision of important payment systems**, core infrastructures that require oversight to promote their reliability, security, and robust risk management conforming to international standards. The important payment systems include **the BAHTNET system**, the interbank large-value funds transfer system, and two major retail payment systems. The first is **the Imaged Cheque Clearing and Archive System (ICAS)**, which supports interbank cheque collection using cheque images instead of physical cheques. The second is **the PromptPay system**, the interbank retail funds transfer system, which has grown in popularity and recorded the highest transaction volume compared to other retail funds transfer systems. The other aspect is **the supervision of designated payment business providers**. The BOT strives to ensure that the payment business providers are reliable and trustworthy, implement sound risk management in compliance with international standards, provide uninterrupted and safe services in normal and crisis conditions, and maintain adequate and proper consumer protection.

In 2020, the BOT maintained payment systems stability by setting guidelines for critical payment infrastructure to ensure operational resilience under the COVID-19 pandemic and enhancing supervision of payment business providers to correspond to the business's risk levels, including cyber risks. Key supervisory activities include enhancing information technology risk supervision proportionate to existing risks and in line with international standards and issuing regulations on electronic Know-Your-Customer (e-KYC) for activating e-Money services to promote safe and credible KYC processes commensurate with risk levels and activation channels. The BOT also issued guidelines on the application of biometric technology in financial services to enable financial service providers to adopt such technology appropriately and comply with international standards. Further, the BOT encouraged designated payment business providers to prepare to comply with the Personal Data Protection Act B.E. 2562 ("PDPA"), which will come into effect in mid-2022.

The abovementioned efforts aim to foster stability and confidence in payment systems, maintain financial stability, build public confidence in digital payments, and support the smooth functioning of economic activities. Key actions in 2020 are detailed as follows.



01

## Supervision of important payment systems

The BOT provides oversight and supervision to ensure that the payment infrastructures are secure, safe, have proper risk management, and comply with international standards to prevent systemic risk. Key supervisory activities are as follows.

### High-value funds transfer network : BAHTNET

In 2020

**Volume  
of transactions  
totaled**

**4.7**

Million

↑ **+0.9%** YoY

Average  
19,317 transactions per day

**Value  
of transactions  
totaled**

**947.6**

Trillion Baht

↑ **+15.4%** YoY

Average  
3.9 trillion baht per day

The Bank of Thailand Automated High-value Transfer Network (BAHTNET) system is the BOT-operated system that facilitates large-value transfers and interbank settlement on a Real-Time Gross Settlement system (RTGS) basis. The BAHTNET also provides finality of payment to reduce risks in the payment systems and enable fast and secure transactions. Key BAHTNET services include interbank funds transfer, third-party funds transfer, and settlement of interbank retail funds transfer such as transactions from the ICAS and the PromptPay. Hence, liquidity risk and settlement risk are crucial.

The BOT manages these risks by requiring all BAHTNET members to maintain sufficient liquidity through deposits in their current accounts at the BOT and collateralized securities. The requirement helps ensure adequate liquidity for uninterrupted fund transfers and settlements to avoid any impacts that may lead to systemic risk. These risks are monitored closely and promptly managed to prevent any pending transactions that may significantly affect the settlement. In addition, operational risks are addressed to ensure continuity and security of operations in normal and crisis conditions, such as the COVID-19 pandemic.



## Important retail payment systems

1

### Imaged Cheque Clearing and Archive System (ICAS)

The ICAS is an image-based cheque clearing system where cheque images are used in place of physical cheques in the collection process. The ICAS helps shorten the cheque clearing cycle nationwide, lower the costs and risks of losing physical cheques during transportations in the collection process, and lessen banks' responsibilities of storing data and physical cheques by substituting them with access to image cheque archives provided by the ICAS. The significant risk of the ICAS system is operational risks arising from system security.

2

### PromptPay system

The PromptPay system is an interbank retail funds transfer system operated by the National ITMX Company Limited (NITMX) to facilitate convenient, fast, and cost-efficient interbank funds transfer and payments. The PromptPay supports various extended services such as cross-bank bill payments, welfare payments, individual and corporate income tax refunds, and domestic and international QR payments. As the system handles transactions from various sectors, the capacity risk is therefore significant.

In 2020

Volume  
of transactions  
totalled

47.7

Million cheques

↓ -17.0% YoY

Average  
196,411 cheques per day

Value  
of transactions  
totalled

27.7

Trillion Baht

↓ -18.4% YoY

Average  
113.8 billion baht per day

### Trends and risk management in 2020

In 2020, the volume of cheque payments totaled 47.7 million cheques, equivalent to 27.7 trillion baht in value term. Cheque payments accounted for 0.2% and 49.2% of volume and value of total retail transactions, respectively. The volume and value of cheque payments have continued to decline over the past five years and dropped significantly from the previous year by 17% and 18.4%, respectively.

The decrease in cheque usage is driven by the migration towards digital payments, indicated by the continual decline of the average daily volume of

interbank cheques. In 2020, the volume of daily interbank cheques averaged at 196,411 cheques per day, equivalent to an average value of 113.8 billion baht per day. A majority of interbank cheques (76.5%) were less than 100,000 baht in value.

As for the supervision and risk management of the ICAS in 2020, the system operated uninterrupted. The BOT continued to provide rigorous supervision on cybersecurity in accordance with international standards and regularly reported results to concerned management and the PSC.

In 2020

Volume  
of transactions  
totalled

5,021.7

Million

↑ +150.9% YoY

Value  
of transactions  
totalled

20.3

Trillion Baht

↑ +58.0% YoY

### Trends and risk management in 2020

In 2020, the volume of transactions via PromptPay reached 5,021.7 million transactions or a total of 20.3 trillion baht in value term. PromptPay transactions accounted for 83.7% and 36.2% of retail transactions' total volume and value, respectively, and continued to trend upward. Around 90% of PromptPay transactions were less than 5,000 baht, with an average value of 840 baht per transaction, decreasing steadily from the past years. These lower-value transactions suggest increased PromptPay usage for daily spending.

In terms of risk management, the BOT has supervised the NITMX on developing and monitoring the PromptPay system to maintain its availability and capability to support double transactions volume during peak times. The BOT also insisted that member banks provide solutions and communicate with customers through various channels in case of system failures to foster public confidence in the PromptPay. Further, the BOT required rigorous cybersecurity arrangements in compliance with international standards and regularly reported results to concerned management and the PSC.



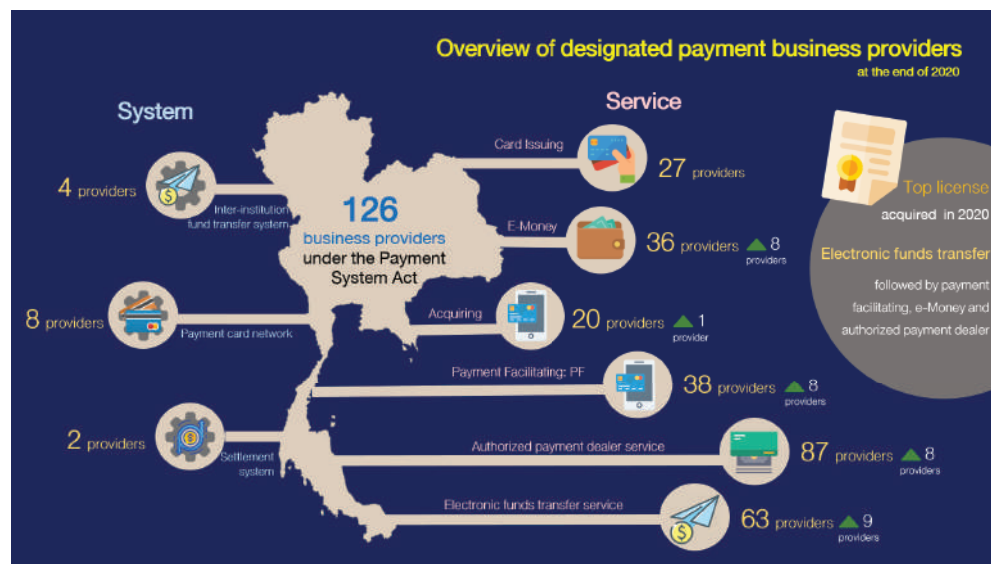
## Oversight of designated payment business providers

The BOT supervision of payment business providers set off from encouraging the entrance of new credible business providers with new services that better serve digital payments' needs. Further, the BOT ensures that designated business providers are reliable and put in place sound operational risk and cyber risk management commensurate with current risk levels and comply with international standards to preserve service continuity. The BOT also encourages the business providers to offer adequate and appropriate consumer protection. In this regard, the BOT has issued regulations and guidelines to enhance payment services, of which details are discussed below.



## 1 Encouraging new payment business providers

The BOT promoted the entrance of new business providers to sustain growing demands for digital payments, especially during the COVID-19 pandemic, and to increase choices for the public and business sectors. As of 2020, a total of 281 licenses and 4 registration certificates have been issued to 126 payment business providers, of which 123 business providers have been granted licenses, and 4 business providers have been granted registration certificates. In this year, 19 business providers acquired licenses, and 1 business provider acquired a registration certificate. Details are as shown in the figure.



## Overview of designated payment business providers at the end of 2020

Figure 3 : Overview of designated payment business providers at the end of 2020

## 2 Strengthening the supervision of payment business providers

### Business operations

The BOT has strengthened the supervision of business providers to keep up with evolving risks by adopting an ongoing supervisory approach and developing monitoring and supervisory tools to examine critical risks in normal business operations and during the COVID-19 pandemic.

## How should entrepreneurs adapt and move forward during the COVID-19?

Box 6 : How should entrepreneurs adapt and move forward during the COVID-19?

During the COVID-19 pandemic, new opportunities arose from "changes" in the general public preference towards online channels. Businesses and entrepreneurs also needed to "adapt" for survival, such as expanding the scope of services, adding new products, and increasing service channels. The ABCDE principle is one approach assisting business providers to "overcome" the current challenges and quickly "move forward" to the digital economy era.



Read more at PAYMENT INSIGHT:  
COVID-19 PANDEMIC Implication to e-Payment  
(Thai version only).  
[https://www.bot.or.th/Thai/PaymentSystems/Publication/payment\\_insight/Documents/Bi-monthly\\_report\\_Vol6-2020\\_December.pdf](https://www.bot.or.th/Thai/PaymentSystems/Publication/payment_insight/Documents/Bi-monthly_report_Vol6-2020_December.pdf)





## Readiness for cyber threats

To strengthen cybersecurity in the financial sector, the BOT has enhanced risk management of the designated payment business providers, especially during the COVID-19 pandemic, when the volume of digital payments has grown exponentially, cyber threats rose rapidly, and can potentially pose a widespread impact in a short time. The BOT **issued the regulation on information technology risk management** requiring important payment business providers to have adequate risk management commensurate with their risk levels and comply with international standards. The BOT also demanded payment business providers to maintain, at a minimum, the basic information technology security to ensure system stability and cyber resilience and **developed monitoring processes that closely and continuously monitor risk** through risk monitoring tools.

In addition, the BOT **promoted personnel development, building new professionals into the financial sector, and raising cyber awareness for staff at all levels**. Further, the BOT **endorsed collaborative forums and the exchange of cybersecurity information** at the financial sector level by promoting sharing and alerting related threats information, fostering professional networks, and conducting cybersecurity exercises to increase cyber response readiness in the long term.

## Consumers must be aware of and ready to respond to cyber threats in the new normal.

**Box 7 :** Consumers must be aware of and ready to respond to cyber threats in the new normal.

Rigorous cybersecurity is both **service providers' responsibility** to arrange for effective defense and surveillance systems against cyber risks and **customers' responsibility** to conduct transactions carefully and be aware of new threats.

In 2020, cyber threats rose as cybercriminals exploit the COVID-19 pandemic. Website spoofing, e-mail, or phone call scams impersonating financial institutions, known as "phishing," tricked individuals into disclosing confidential information allowing impostors to conduct fraudulent financial transactions. Consumers need to be careful not to give out personal data to others and should always, before providing such information, look for anomalies such as untrusted websites or phone numbers, misspellings or unusual names, or any suspicious alerts asking for passwords. However, if personal information has been exposed to a malicious person, customers should immediately take the following actions:

- 1. Check for any irregularities of mobile banking or internet banking transactions,** such as unauthorized transactions or unusual notifications or messages.
- 2. Set up security for online bank accounts** by resetting or changing passwords to be more complex and difficult to guess.
- 3. Be careful not to disclose further information** when contacted by suspicious phone numbers or emails requesting additional information.
- 4. Immediately contact the financial institutions or service providers through trusted channels** such as branches, official websites, or call centers to report problems, verify information, and watch out

Nevertheless, payment service providers also maintain fraud prevention mechanisms to detect unusual transactions or possible frauds. Any suspicious transaction may be suspended or closely monitored and investigated to assess risks and compensate customers.



### 3 Issuing modern regulations to support financial innovation expansion

In 2020, the BOT issued important regulations, namely, Regulations on electronic-Know Your Customer (e-KYC)<sup>3</sup> for activating e-Money services aiming to promote safe and credible KYC processes commensurate with risk levels and activation channels, and Guidelines on the application of biometric technology in financial services<sup>4</sup> to advise financial service providers on prudent and appropriate adoption of the technology and compliance with international standards.

In addition, the BOT promoted the financial sector's preparation for compliance with the Personal Data Protection Act B.E. 2562 (Personal Data Protection Act: PDPA) by encouraging financial institutions to establish common guidelines for personal data protection to comply with the laws.

Read more at BOT website (Thai version only)  
[https://www.bot.or.th/App/FIPCS/Thai/PFIPCS\\_list.aspx](https://www.bot.or.th/App/FIPCS/Thai/PFIPCS_list.aspx)

<sup>3</sup> Regulations on electronic-Know Your Customer (e-KYC) for activating e-Money services  
<https://www.bot.or.th/Thai/FIPCS/Documents/FPG/2563/ThaiPDF/25630117.pdf>

<sup>4</sup> Guidelines on the application of biometric technology in financial services  
<https://www.bot.or.th/Thai/FIPCS/Documents/FOG/2563/ThaiPDF/25630177.pdf>

<sup>5</sup> Read more at the Thai Bankers' Association website at [www.tba.or.th/Home](http://www.tba.or.th/Home) > News > "Guideline for Personal Data Protection for Thai Banks" (Thai version only) or <https://www.tba.or.th/pdpa-tba/>

Thailand has enacted the Personal Data Protection Act B.E. 2562 (2019), which will come into effect in June 2022. The financial sector, in which data are heavily utilized to improve risk management and enhance financial services to precisely meet customers' needs, has emphasized compliance with the law. To ensure that personal data are handled properly, securely, and protected according to the prescribed law, the BOT and the Thai financial sector have prepared for the Personal Data Protection law through two primary roles as discussed below.

### 1 Supervision of banks and non-banks payment service providers

In collaboration with the Thai Bankers' Association, the BOT developed the Guideline on Personal Data Protection for Thai Banks<sup>5</sup> to layout practices in compliance with the law and relevant rules. The BOT also held an online seminar on "PDPA before enforcement...What needs to be prepared" on February 24, 2021, to educate and enhance non-banks business providers' understanding of the topic. Further, before the law comes into force, the BOT arranged for banks and non-banks business providers under its supervision to conduct a PDPA self-assessment survey to assess their readiness for compliance with the PDPA legal requirements, including their organizational arrangement and personal data security.

### 2 Collaboration with other financial regulators and relevant agencies.

The BOT has coordinated with financial regulators of securities and insurance businesses in setting consistent and comparable standards guidelines. The BOT also collaborated with the Office of the Personal Data Protection Commission (PDPC) and provided the financial sector's perspectives on supportive legislations under the Personal Data Protection Act.

The BOT attaches great importance to preparing the Thai financial sector to comply with the PDPA laws. The BOT has coordinated with other financial sector regulators to ensure consistency of supervisory framework and business practices in terms of the business providers' readiness to comply with the laws and the cooperation among the financial regulators. Thus far, business providers in the banking sector are reasonably well-prepared. Although the enforcement of the PDPA has been postponed until June 2022, extensive preparation up until then will be beneficial to the businesses and foster customer confidence in personal data protection according to the legal intention of the PDPA.

## Preparing the Thai financial sector for personal data protection laws

Box 8 : Preparing the Thai financial sector for personal data protection laws



Online seminar "PDPA before enforcement... What needs to be prepared"

# IV

## “THE WAY WE PAY”

Key trends in payment service





## The new normal gives rise to Thai digital payments

Over the past few years, Thai people have increasingly switched to digital payments. With the COVID-19 pandemic being a key catalyst, digital payments have rapidly become the preferred choice for the public, government, and business sectors in Thailand.

As of the end of 2020, the total number of Thai digital payments increased from 135 times per capita per year in 2019 to 202 times per capita per year and continued to trend upward. Nonetheless, compared to countries with digital payments being a primary payment option, Thailand has many prospects for boosting digital payments.



### Tips

**Thai payment transactions**  
include the public, business,  
and government sectors





## Thailand's digital payment transactions

Figure 4 : Thailand's digital payment transactions per capita per year

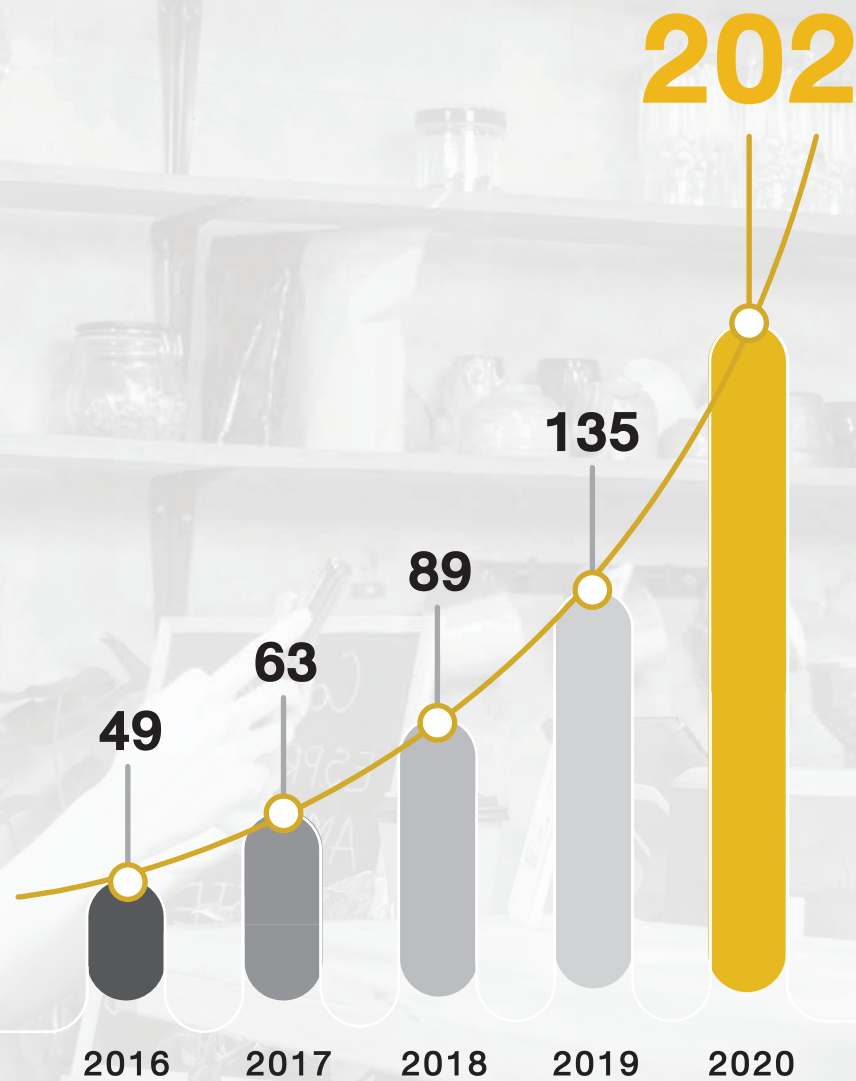


“  
**Digital Payment**  
is to be the most preferred choice  
in efficient, safe, low-cost  
payment systems that  
meets users' needs.”



times / capita / year

Source: Bank of Thailand



## Volumes of e-Payment of various countries\*

Figure 5 : Volumes of e-Payment per capita of various countries



## General Public

In 2020

Volume  
of transactions  
totaled

15.0  
Billion

↑ +41.6% YoY

Value  
of transactions  
totaled

51.4  
Trillion Baht

↑ +18.7% YoY

In 2020, the volume and value of public payment transactions continued to grow considerably at 41.6% and 18.7%, respectively, compared to the previous year. Mobile banking/ internet banking transactions continued to gain popularity with the highest growth rate of over 70% or 4.3 times of ATM/CDM cash withdrawals. Such growth is due to its ease of use, convenience, speed, and advantage of avoiding touching cash during the COVID-19 outbreak.

In addition, digital payments had increasingly become part of everyday life, suggested by the average value per transaction in 2020 of less than 5,000 baht, a significant decrease compared to that in 2016 when the average value per transaction was more than 20,000 baht.

Another popular digital payment channel among Thai people is electronic card payment, of which most transactions were still made via EDC machines. The volume of transactions was 3.6 times higher than there was a decline in the mid of 2020 due to social distancing measures imposed during the COVID-19 pandemic.

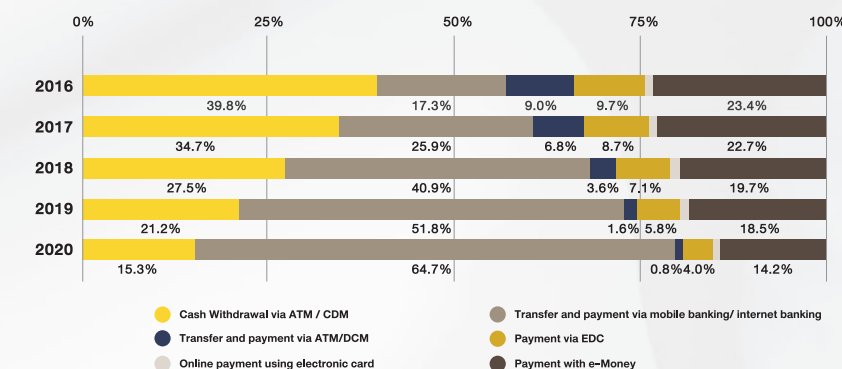
For the general public, e-Money is truly for everyday spendings such as food, transportation fare, or miscellaneous expenses. Over 80% of e-Money transactions are valued on average merely at 41 baht per transaction. E-Money continued to gain traction because the service is easy to use, convenient, does not require income and age qualifications, and comes with attractive discounts or promotions from the service providers. E-Money is now recognized as one of the essential tools that help shift Thai payments towards a cashless society.



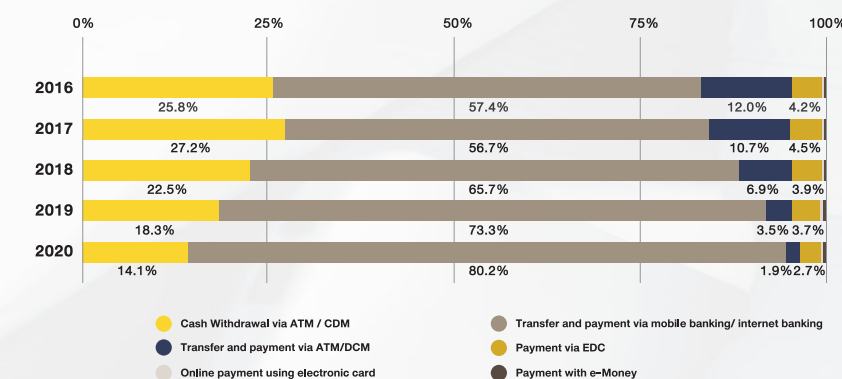
Covid-19 is a key catalyst for  
rising mobile banking  
usage, which grew  
by more than 70%



### Proportions of Volume General Public



### Proportions of Value General Public



## Proportions of General Public Payments

Figure 6 : Proportions of payments during 2016 – 2020 (General Public)

Source: Bank of Thailand



## Business and Government Sectors

In 2020

Volume  
of transactions  
totaled

991.6  
Million

↑ +33.2% YoY

Value  
of transactions  
totaled

111.9  
Trillion Baht

↓ -1.7% YoY

In 2020, the volume of digital payments in the business and government sector also continued to grow, with approximately 63% of transactions being automatic direct debit/ direct credit. The volume of cross-bank bulk payments jumped by nearly 60% as a result of government welfare payments, particularly financial reliefs for those affected by the COVID-19 pandemic in mid-2020.

In terms of value, most business and government transactions are still conducted via cheques. However, cheque usage has steadily declined because of the increased adoption of digital payments in lieu of cheques, such as the Revenue Department's tax refunds via PromptPay. In addition, the business sector now can transfer funds via mobile banking/ internet banking up to 2 million baht per transaction. Nonetheless, cheques will not disappear soon due to its essential features, such as being used as collateral for loans or evidence in court.



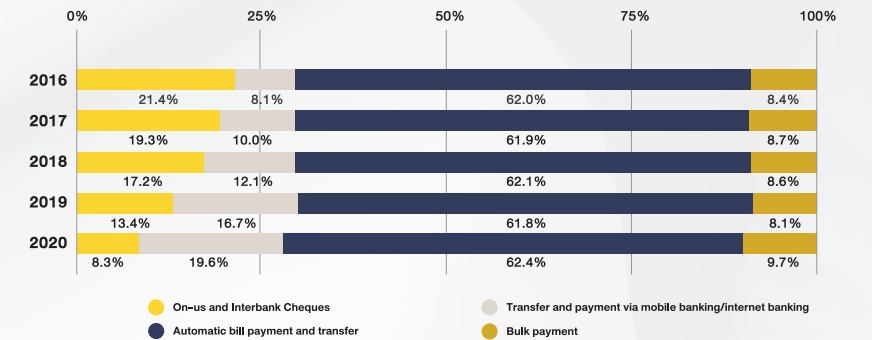
**Cheque usage  
dropped**

more than 17 % compared  
to last year as

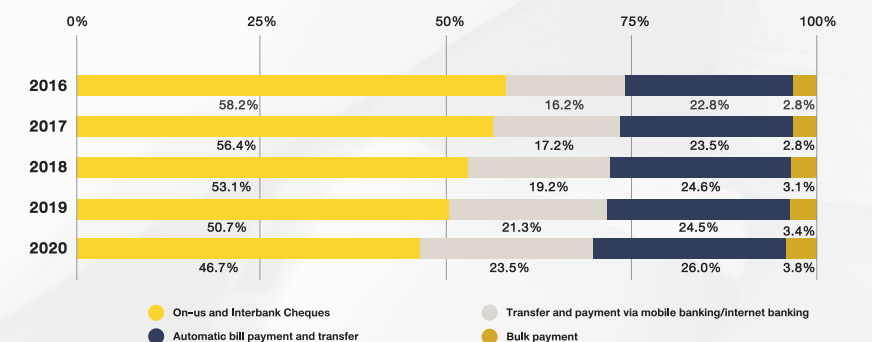
businesses and governments  
**turned to digital  
payments**



Proportions of Volume  
Business and Government  
Sectors



Proportions of Value  
Business and Government  
Sectors



## Proportions of Business and Government Sectors Payments

Figure 7 : Proportions of payments during 2016 – 2020 (Business and Government Sectors)

Source: Bank of Thailand



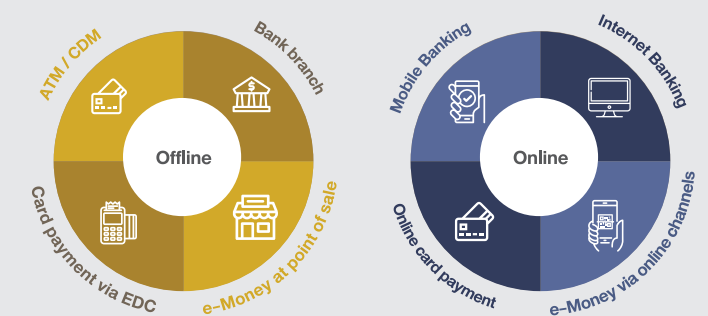
Thais prefer  
**online payments**

During the past five years, spending at the point of sale (offline) such as payments via ATM/CDM machines or at bank branches, has declined continually even though payments via EDC machines and e-Money acceptance points at the store still trended upward. Still, overall offline payments increased at a lower rate than online payments such as mobile banking/ internet banking payments, which grew by 70%. Online payments via electronic cards and e-Money have increased exponentially, with a growth rate of more than 64.9% from the previous year. Such growth is partly due to the increasing popularity of mobile banking/ internet banking services and the funds transfer fee reduction announced in 2018.



### Tips

#### What are offline and online transactions?





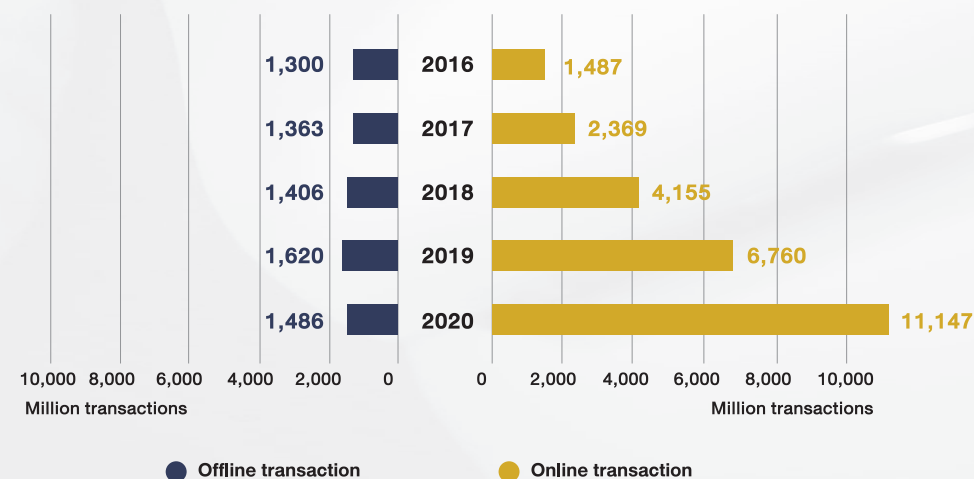
The shift in Thais' behaviors towards online platforms drove the volume and value of digital payment transactions to grow by 64.8% and 20.8%, respectively. In particular, the volume and value of mobile banking/ internet banking transactions remarkably increased by more than 74.6% and 20.8%, respectively. The number of mobile banking/ internet banking subscriptions rose by more than 14.2 million accounts from the previous year and stood at 103.6 million accounts. Such increases were driven by the ease and convenience of digital payment in transferring money to friends or family, paying for goods and services, paying bills, or even making donations, which can be done anywhere, anytime, consonant with the Thais' behaviors.

In 2020, transactions at the point-of-sale only accounted for 14% of the total transaction, while online payments accounted for 86%. Such difference arose from online payments being convenient. Customers can transact anywhere anytime, serving Thai people's needs in the new normal.

## Volume of point of sale (offline) and online transactions

Figure 8 : Volume of point of sale (offline) and online transactions during 2016–2020

Source: Bank of Thailand



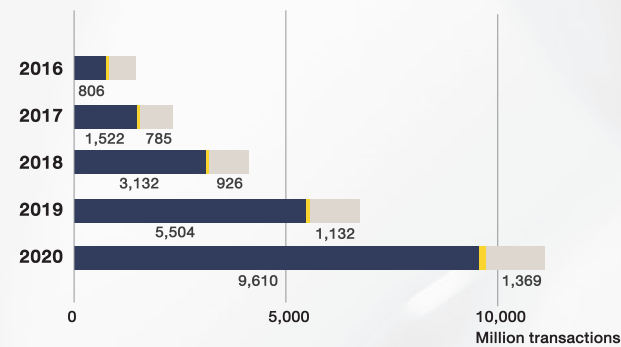


## Volume and value of online transactions by transaction type

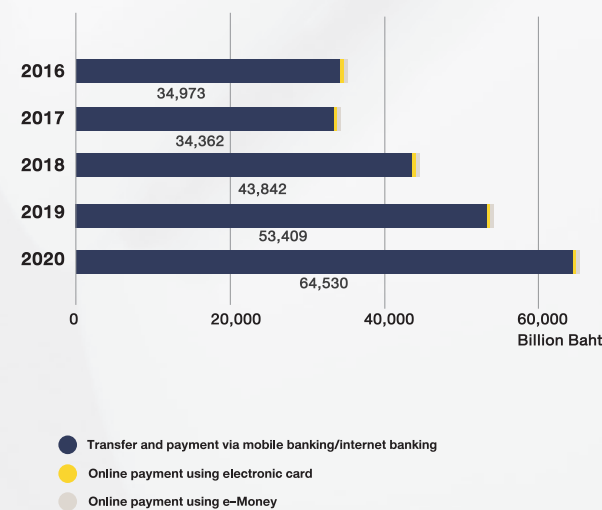
Figure 9 : Volume and value of online transactions during 2016–2020 by transaction type

Source: Bank of Thailand

Volume of online transaction



Value of online transaction



● Transfer and payment via mobile banking/internet banking  
● Online payment using electronic card  
● Online payment using e-Money

## PromptPay

An in-depth analysis of PromptPay transactions revealed that the volume of transactions averaged at 20.2 million transactions per day, equivalent to an average value of 74.3 billion baht. Most transactions were mobile banking/internet banking transactions. PromptPay registration rose from last year by more than 6.4 million numbers with totaled 56.2 million numbers. Most registrations were linked with national citizen identification numbers with a record of 34.2 million registrations, partly owing to the government's electronic funds transfer via PromptPay, such as income tax refunds or welfare payments.



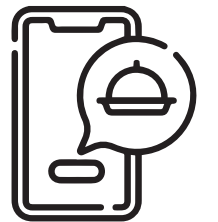
More than half of the Thais have registered for PromptPay

As for the use of e-Money via online channels, the volume and value of e-Money transactions trended upwards and grew by 20.2% and 40.8% from the previous year, respectively. Such growths were largely due to easy-to-use mobile applications, not different from mobile banking. The volume of online payments via electronic cards increased by 36.2% from the previous year as the general public became familiar with online shopping. In particular, payments for online food delivery and online shopping from online shops or department store websites doubled their growth compared to the previous year. Such popularity was propelled by the convenience of waiting for product delivery without traveling to the stores and the promotion and discounts given by the service providers or stores incentivizing Thais to spend more online. Such trends persist and grow into new familiarities even after the first pandemic wave in the mid-2020.

“

## Spending on food delivery

grew by 4.8 times, compared to last year



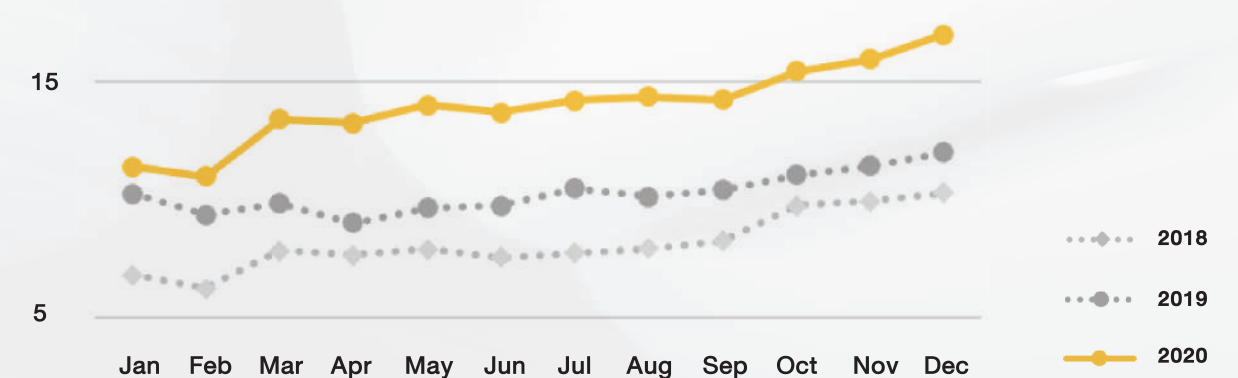
”

## Volume of online transactions via electronic cards

Figure 10 : Volume of online transactions via electronic cards during 2018–2020

Source: Bank of Thailand

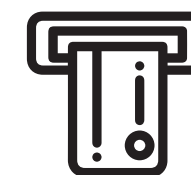
Million transactions





**Spending behaviors**  
at the point of sale (offline) have changed

“



**Over the past five years,**  
transactions  
via ATMs/CDMs  
and at bank branches  
continued to decline

”

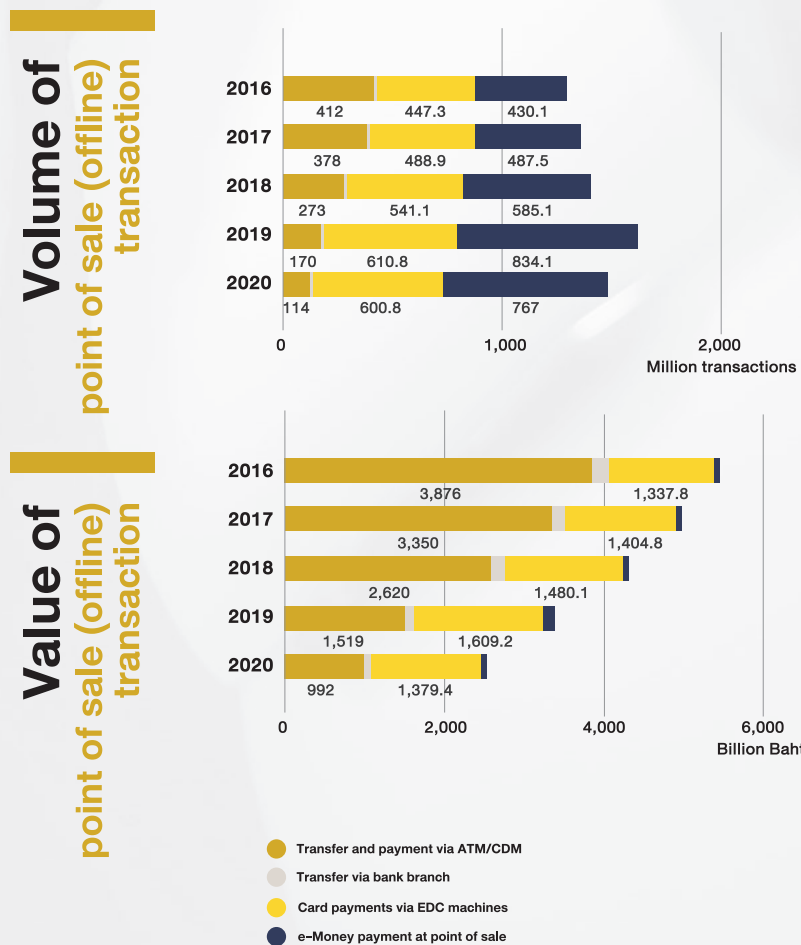
During the COVID-19 outbreak at the beginning of 2020, various measures were introduced to prevent the spreading of the virus, such as cross-province travel restriction, temporary closure of multiple venues such as shopping malls, movie theaters, restaurants, and fresh markets, as well as work from home policy. These measures have led Thai people to adjust and turn to online payment alternatives.



## Volume and value of point of sale (offline) transactions by transaction type

**Figure 11** : Volume and value of point of sale (offline) transactions during 2016–2020 by transaction type

Source: Bank of Thailand



As a result, the volume and value of payments at the point-of-sale decreased by 8.3% and 24.2%, respectively, compared to the previous year. The declines are mainly due to sharp drops in e-Money payments at the point-of-sale, such as toll payments, sky-train/subway fares, and electronic card payments via EDC machines, particularly at restaurants and department stores.

Nonetheless, after the easing of restriction measures in the second half of 2020, payments via EDC machines began to pick up and return to the previous level, particularly spending at restaurants and department stores that returned to open as usual. Still, the overall recovery is relatively low compared to those in the past due to changes in the Thais' preference towards online platforms and incentives such as discounts or promotions from service providers attempting to boost online sales.

“

## Payments at the point of sale

have rebounded but have not yet returned to the previous level



”

“

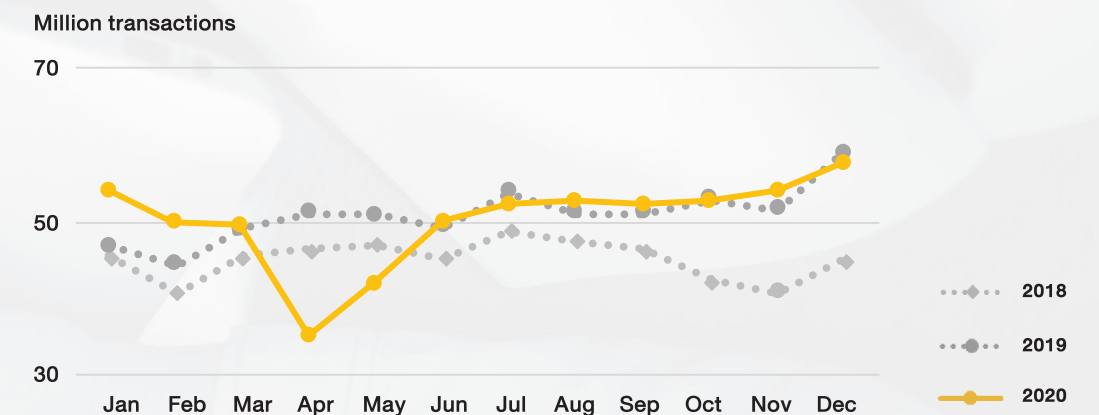
Even though payments at point-of-sales have declined during the COVID-19 pandemic, it began to rebound after the easing of restriction measures

”

## Volume of electronic card payments at the point of sale

**Figure 12** : Volume of electronic card payments at the point of sale during 2018–2020

Source: Bank of Thailand





04

**Cash**  
is no longer the preferred  
payment option for Thais

“



The COVID-19  
pandemic is  
**a catalyst for  
the decline  
in cash usage**

”

Thai people tend to use less cash. The value of cash withdrawals continued to decline by 17.7% from the previous year, while the volume of cash withdrawals increased only slightly by 1.2%, compared to an average increase of 5.3% during the past five years. The decline in cash usage is driven by the preference for digital payments in the general public, business, and government sectors. The COVID-19 pandemic in 2020 is also a catalyst for the decline as it induces people to minimize touching cash.

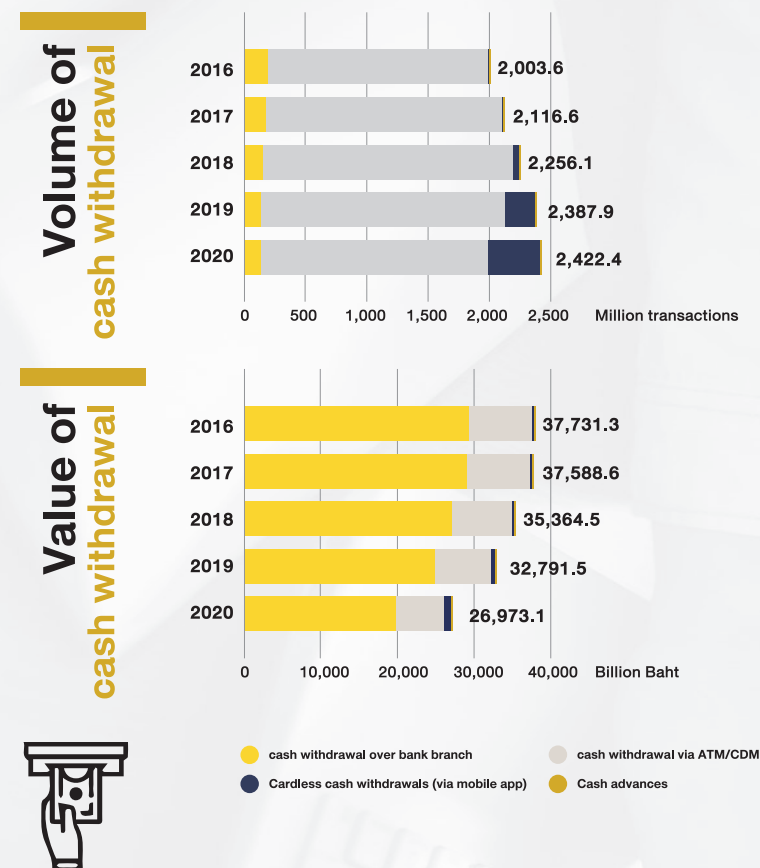
The main channel for cash withdrawals is via ATM/CDM machines with a share of 94.1%, and the value of transactions averaged at 3,152 baht per transaction. However, ATM/CDM cash withdrawals are relatively stable and increased slightly by 2% from the previous year. The volume and value of withdrawals at bank branches declined by 9.6% and 20.5%, respectively.



One issue worth noting is that, Thais have increasingly preferred cardless cash withdrawals, which transactions are made via mobile application and money is retrieved from ATM/CDM machines. Such preference resulted from the convenience of the service and the exclusion of card annual fees. During the past three years, the proportion of cardless cash withdrawals increased significantly from 2.5% in 2018 to 17.4% in 2020.

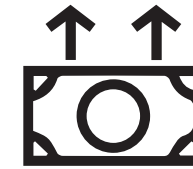
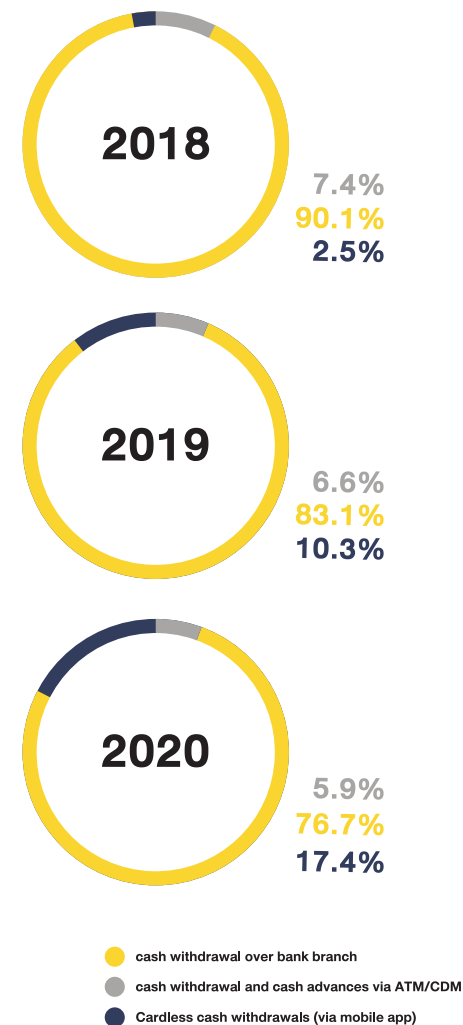
## Volume and value of cash withdrawals

Figure 13 : Volume and value of cash withdrawals during 2016–2020  
Source: Bank of Thailand



## Proportions of cash withdrawals classified by channels

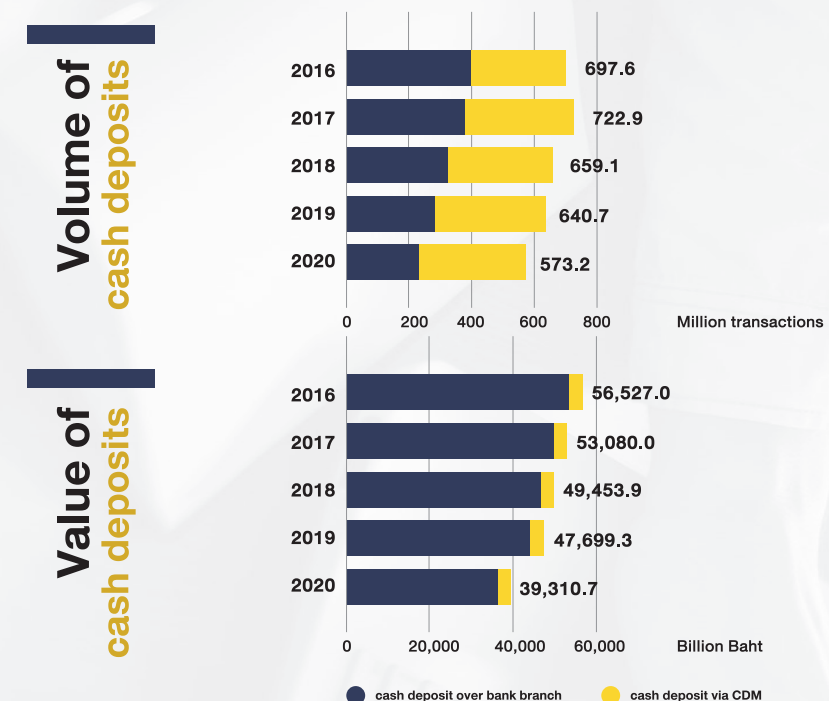
Figure 14 : Proportions of cash withdrawals during 2018–2020 classified by channels  
Source: Bank of Thailand



Cash deposits also exhibited a declining trend. The volume and value of cash deposits decreased from the previous year by 10.5% and 17.6%, respectively. Over the past five years, the decreases were mainly over-the-counter deposits at bank branches, partly because people switch to more convenient CDM deposits. However, the value of cash deposits via CDM machines averaged around 8,800 baht per transaction. Meanwhile, high-value deposits were still made at bank branches, indicated by the average value per transaction of 154,700 baht.

## Volume and value of cash deposits

Figure 15 : Volume and value of cash deposits during 2016–2020  
Source: Bank of Thailand





**Offline payment channels**  
have declined in line with  
the changes in Thais' behaviors

**“ Numbers of  
bank branches and  
ATM/CDM machines  
continued to decrease in line with  
changing payment behaviors ”**

As Thais have increasingly shifted towards digital payments,  
payment services via bank branches or ATM/CDM decreased.



## Bank branches

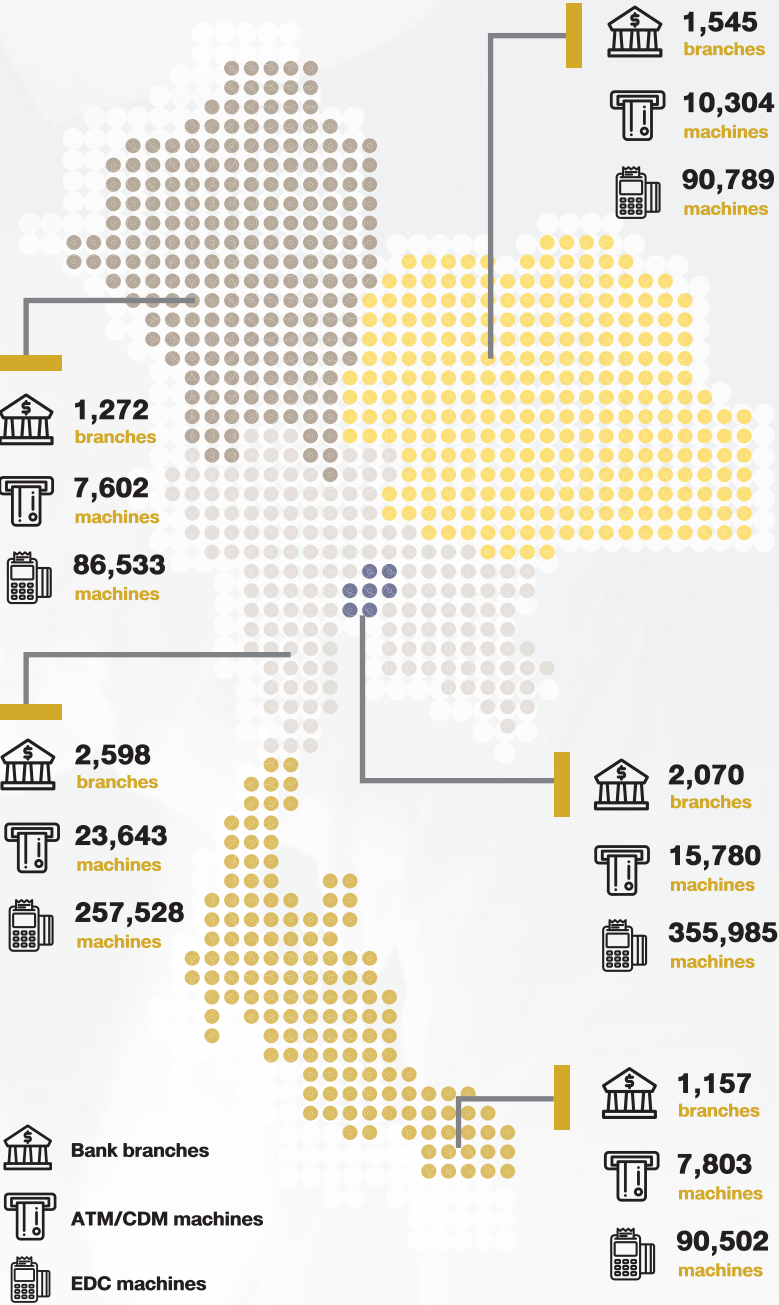
At the end of 2020, the number of financial institution branches stood at 8,642 branches, decreasing by 343 branches from the previous year. Among these, 341 branches were those of Thai commercial banks, and 2 branches were those of specialized financial institutions.

Bangkok had the largest decrease in the number of bank branches of 100 branches, followed by the Central and Northern regions of 92 branches and 66 branches, respectively.



# Payment service channels in 2020

Figure 16 : Payment service channels in 2020  
Source: Bank of Thailand



## ATM/CDM machines

ATM/CDM machines continued to decline. At the end of 2020, there were a total of 65,132 machines, a decrease by 675 machines from the previous year.

Despite the decline in the number of ATM/CDM machines, the proportion of ATM/CDM machines stood at 984 machines per million inhabitants, on par with those of Australia and the UK, which totaled 1,102 and 913 machines per million inhabitants, respectively. The ratio was higher than those of cashless society countries such as Sweden and Singapore, which recorded 292 and 526 machines per million inhabitants, respectively.



## Electronic data capture (EDC)

At the end of 2020, the number of EDC machines totaled 881,337 machines, a slight increase from last year by 3,042 machines. However, the proportion of EDC machines stood at 12,991 machines per million inhabitants, lower than those of other countries such as Australia, the UK, Sweden, and Singapore, whose EDC ratios were 36,437 44,703, 24,516, and 48,212 machines per million inhabitants, respectively.

# Numbers of ATMs/CDMs and EDCs per million capita of various countries

Figure 17 : Numbers of ATMs/CDMs and EDCs per million capita of various countries

Country	Thailand	Malaysia	Australia	UK	Sweden	Singapore
No. of ATM/CDM machines	984	N/A	1,102	913	292	526
No. of EDC machines	12,991	22,644	36,437	44,703	24,516	48,212

\* End of 2019 data for other countries and end of 2020 data for Thailand and Malaysia  
Source : BIS (2019) Statistics on payment, clearing and settlement systems in the CPMI countries, Bank of Thailand and Bank of Negara Malaysia (2020) Payment Statistics.



Meanwhile, merchants have adjusted their strategies and increasingly accepted QR payments. Large stores, small shops, hawker stalls, fresh markets, flea markets, taxis, and motorbike taxis chose to adopt QR payments to give customers more payment options and reduce cash payments. The costs of accepting QR payments also are lower than those of EDC machines. At the end of 2020, there were nearly 7 million QR payment acceptance points nationwide. Accordingly, the volume and value of QR payment transactions increased by 2.9 times from the previous year.

**COVID-19**  
led Thai people to  
**adopt QR payments increasingly**

# V

## Appendix





## Glossary and abbreviation

<b>AI</b>	Artificial Intelligence
<b>ATM</b>	Automated Teller Machine
<b>BAHTNET</b>	Bank of Thailand Automated High-Value Transfer Network
<b>BOT</b>	Bank of Thailand
<b>BRP</b>	Bilateral Repurchase Transactions
<b>CDM</b>	Cash Deposit Machine
<b>CBDC</b>	Central Bank Digital Currency
<b>e-Money</b>	Electronic Money
<b>EDC</b>	Electronic Data Capture
<b>EFTPOS</b>	Electronic Funds Transfer at Point Of Sale
<b>ICAS</b>	Imaged Cheque Clearing and Archive System
<b>ILF</b>	Intraday Liquidity Facilities
<b>ISO</b>	International Organization for Standardization
<b>KYC</b>	Know Your Customer
<b>NDID</b>	National Digital Identity
<b>NITMX</b>	National ITMX
<b>Non-bank</b>	Non-bank financial institution
<b>ORFT</b>	Online Retail Funds Transfer
<b>PDPA</b>	Personal Data Protection Act
<b>PDPC</b>	The Office of the Personal Data Protection Commission
<b>PSC</b>	Payment Systems Committee
<b>QR Code</b>	Quick Response Code
<b>RIA</b>	Regulatory Impact Assessment
<b>RTGS</b>	Real Time Gross Settlement
<b>SFIs</b>	Specialized Financial Institutions

## Statistical tables

<b>Table 1</b>	Basic statistical data
<b>Table 2</b>	Technological infrastructure
<b>Table 3</b>	Narrow money (at year-end, million Baht)
<b>Table 4</b>	Settlement media used by non-banks (at year-end, billion Baht)
<b>Table 5</b>	Settlement media used by banks (at year-end, billion Baht)
<b>Table 6</b>	Indicators of the use of various cashless payment instruments
	Volume of transactions (in thousands)
<b>Table 7</b>	Indicators of the use of various cashless payment instruments
	Value of transactions (billion Baht)
<b>Table 8</b>	Use of credit cards and debit cards via EFTPOS (monthly average per card, Baht)
<b>Table 9</b>	Cash withdrawal via ATM (monthly average per card, Baht)
<b>Table 10</b>	Notes and coins (at year-end, million Baht)
<b>Table 11</b>	Institutional infrastructure
<b>Table 12</b>	Payment instructions handled by selected interbank settlement systems
	– Volume of transactions (in thousands)
<b>Table 13</b>	Payment instructions handled by selected interbank settlement systems
	– Value of transactions (billion Baht)
<b>Table 14</b>	Securities transfer instructions handled by securities settlement systems
	– Volume of transactions
<b>Table 15</b>	Securities transfer instructions handled by securities settlement systems
	– Value of transactions (billion Baht)
<b>Table 16</b>	Number of participants in selected payment and settlement systems
<b>Table 17</b>	Number of Automated machines and EFTPOS terminals
<b>Table 18</b>	Number of electronic payment cards
<b>Table 19</b>	Sources of payment revenues of Thai commercial banks (million Baht)
<b>Table 20</b>	Sources of payment revenues of foreign bank branches (million Baht)



<b>Table 21</b>	Daily averages of BOT payment services – Volume of transactions
<b>Table 22</b>	Daily averages of BOT payment services – Value of transactions (billion Baht)
<b>Table 23</b>	Peak day figures of BOT payment services – Volume of transactions
<b>Table 24</b>	Peak day figures of BOT payment services – Value of transactions (billion Baht)
<b>Table 25</b>	Use of mobile banking
<b>Table 26</b>	Use of internet banking
<b>Table 27</b>	Interbank funds transfer – Volume of transactions (in thousands)
<b>Table 28</b>	Interbank funds transfer – Value of Transactions (billion Baht)
<b>Table 29</b>	Bill payment at counters.  Volume of transactions (in thousands)
<b>Table 30</b>	Bill payment at counters.  Value of Transactions (billion Baht)
<b>Table 31</b>	Use of e–Money
<b>Table 32</b>	Fraud through specific payment channels and payment instruments (million Baht)

Table 1: Basic statistical data						
	2015	2016	2017	2018	2019	2020
Population (millions)	65.7	65.9	66.2	66.4	66.6	<b>66.2</b>
GDP current price (billion Baht)	13,743.5	14,590.3	15,488.7	16,368.7	16,898.1	<b>15,698.3</b>
GDP per capita (Baht)	209,090	221,295	234,008	246,465	253,882	<b>237,182</b>
Exchange rate vis-à-vis US\$ (at year-end)	36.08	35.82	32.66	32.42	30.12	<b>30.01</b>

Sources: Bank of Thailand, Department of Provincial Administration, National Economic & Social Development Board

Table 2: Technological infrastructure						
	2015	2016	2017	2018	2019	2020
Total fixed network telephone subscribers <sup>1</sup> (millions)	<b>5.3</b>	<b>4.7</b>	<b>5.2</b>	<b>6.1</b>	<b>5.4</b>	<b>5.0</b>
Total mobile telephone subscribers (millions)	<b>102.9</b>	<b>118.4</b>	<b>121.5</b>	<b>125.1</b>	<b>129.6</b>	<b>116.3</b>
Postpaid	17.8	22.7	26.5	29.4	32.6	<b>32.6</b>
Prepaid	85.2	95.6	95.0	95.7	97.0	<b>83.7</b>
Total Internet users (millions)	<b>39.5</b>	<b>43.9</b>	<b>45.2</b>	<b>47.5</b>	<b>50.1</b>	<b>50.1</b>
Penetration rates						
Fixed network telephone (%)	8.1	7.1	4.0	9.1	8.1	<b>7.6</b>
Mobile telephone (%)	156.6	179.5	183.6	188.4	194.7	<b>175.7</b>

Sources: Division of Telecommunication Economics Research and Information Center Telecommunication Policy and Resource

Management Bureau Office of National Broadcasting and Telecommunications Commission (NBTC)

<sup>1</sup> Data was reviewed and edited by source since 2017.

Table 3: Narrow money (at year-end , million Baht)						
	2015	2016	2017	2018	2019	2020
Narrow money (1+2 )	<b>1,778,050</b>	<b>1,864,165</b>	<b>2,038,860</b>	<b>2,095,155</b>	<b>2,214,391</b>	<b>2,529,200</b>
1. Currency outside Depository Corp.& Central Gov.	1,250,926	1,335,952	1,437,558	1,504,449	1,590,842	<b>1,812,689</b>
Banknotes in circulation	1,539,848	1,627,997	1,734,078	1,784,153	1,859,539	<b>2,094,450</b>
Coins in circulation	59,888	63,986	68,755	73,599	77,344	<b>80,300</b>
Less: currency held by Central Gov.	1,094	1,115	830	875	1,424	<b>1,845</b>
Less: currency held by Depository Corp.	347,716	354,916	364,445	352,428	344,617	<b>360,215</b>
Held by commercial banks	290,772	301,309	306,968	297,832	287,914	<b>304,285</b>
Held by finance companies	0	0	0	0	0	<b>1</b>
Held by Specialized Financial Institutions	56,544	53,211	57,240	54,341	56,360	<b>55,611</b>
Held by savings cooperatives	400	396	237	255	342	<b>319</b>
Held by money market mutual funds	0	0	0	0	0	<b>0</b>
2. Transferable deposits at Depository Corp.	527,124	528,213	601,302	590,706	623,549	<b>716,511</b>
Transferable deposits at Bank of Thailand	2,697	5,050	4,974	1,907	801	<b>1,060</b>
Transferable deposits at commercial banks	519,296	518,085	590,676	585,207	617,318	<b>707,142</b>
Transferable deposit at SFls	5,131	5,078	5,652	3,592	5,430	<b>8,308</b>

Source: Bank of Thailand

Table 4: Settlement media used by non-banks (at year-end, billion Baht)						
	2015	2016	2017	2018	2019	2020
Currency outside Depository Corp. & Central Gov. <sup>1</sup>	1,251	1,336	1,438	1,504	1,591	<b>1,813</b>
Transferable deposits at Depository Corp.	527	528	601	591	624	<b>717</b>
Narrow money	1,778	1,864	2,039	2,095	2,214	<b>2,529</b>
Broad money <sup>2</sup>	17,552	18,289	19,206	20,110	20,841	<b>22,952</b>

Source: Bank of Thailand

<sup>1</sup> Banknotes outside depository corporations and coins issued by central government.

<sup>2</sup> Narrow money and quasi money (other deposits at Depository Corp.+securities other than shares)



Table 5: Settlement media used by banks (at year-end, billion Baht)

	2015	2016	2017	2018	2019	2020
Balances held at central bank	121.9	110.1	123.0	135.3	127.9	152.0
Stock of high-quality liquid assets <sup>1</sup>	-	3,585.6	3,627.0	3,860.8	4,049.7	4,942.7
Required reserves	749.0	-	-	-	-	-
Free reserves	2,445.5	-	-	-	-	-
Transferable deposits at other banks	3.5	4.1	5.2	4.5	6.2	6.3
Memorandum item:						
Institutions borrowing from central bank	88.2	69.5	33.9	3.4	0.0	106.1

Source: Bank of Thailand

<sup>1</sup> From 2016, depending on Bank of Thailand Notification No. FMOG 56/2558, Prescription on the Maintenance of Reserve Requirement by Commercial Banks, Commercial banks are required to maintain reserve assets on average over a fortnightly period, starting on a Wednesday and ending on a second Tuesday thereafter, equaled to 1 percent of the previous period's average level of commercial banks' deposits and short-term foreign liabilities base.

Table 6: Indicators of the use of various cashless payment instruments – Volume of transactions (in thousands)

	2015	2016	2017	2018	2019	2020
<b>Paper-based:</b>	<b>120,455</b>	<b>118,754</b>	<b>113,783</b>	<b>109,964</b>	<b>99,769</b>	<b>82,662</b>
In-house cheque <sup>1</sup>	49,418	49,309	48,001	46,684	42,299	34,935
Interbank cheque	71,037	69,446	65,782	63,280	57,469	47,727
<b>Electronic payment cards:</b>	<b>3,661,842</b>	<b>4,003,352</b>	<b>4,348,061</b>	<b>4,701,143</b>	<b>5,137,506</b>	<b>5,107,641</b>
ATM card	487,986	411,513	301,822	237,597	182,047	129,011
for cash withdrawal via ATM	377,369	318,681	239,280	200,285	163,155	121,137
for other purposes <sup>2</sup>	110,617	92,832	62,542	37,312	18,892	7,875
Debit card <sup>3</sup>	1,833,615	2,015,466	2,231,425	2,352,871	2,271,979	2,131,967
for cash withdrawal via ATM	1,349,557	1,505,916	1,690,437	1,847,291	1,837,496	1,747,803
for purchasing purpose via EFTPOS	55,751	71,008	91,656	123,239	136,923	138,361
for other purposes <sup>4</sup>	428,307	438,543	449,332	382,341	297,560	245,802
Credit card <sup>5</sup>	456,889	500,072	542,579	599,664	717,783	710,266
for purchasing purpose	421,448	465,730	510,763	565,803	679,089	674,490
for other purposes <sup>6</sup>	35,442	34,343	31,816	33,861	38,695	35,775
e-Money <sup>7</sup>	883,352	1,076,300	1,272,235	1,511,011	1,965,696	2,136,397
<b>Automated:</b>	<b>369,644</b>	<b>392,645</b>	<b>415,546</b>	<b>460,813</b>	<b>524,874</b>	<b>719,144</b>
Direct credit <sup>8</sup>	224,222	234,202	244,733	276,667	327,169	464,202
Direct debit <sup>9</sup>	100,568	107,630	114,944	123,636	132,571	153,684
ITMX Bulk Payment	41,231	46,801	51,646	56,054	60,484	96,564
BAHTNET <sup>10</sup>	3,623	4,013	4,224	4,456	4,651	4,694

Source: Bank of Thailand

<sup>1</sup> Some banks do not report in-house provincial cheques and inter-provincial cheques.

<sup>2</sup> Data include purchasing goods and services, deposit and funds transfer.

<sup>3</sup> Domestic and overseas spending of Thai debit cards and domestic spending of foreign debit cards.

<sup>4</sup> Data include purchasing goods and services via other channels, deposit and funds transfer.

<sup>5</sup> Domestic and overseas spending of Thai credit cards and domestic spending of foreign credit cards.

<sup>6</sup> Data include cash withdrawal, cash advance, deposit and funds transfer.

<sup>7</sup> Data exclude top-up cards.

<sup>8</sup> Intra-bank pre-authorized direct credit.

<sup>9</sup> Intra-bank pre-authorized direct debit.

<sup>10</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

Table 7: Indicators of the use of various cashless payment instruments – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
<b>Paper-based:</b>	<b>61,583</b>	<b>60,895</b>	<b>59,530</b>	<b>56,812</b>	<b>52,247</b>	<b>42,852</b>
In-house cheque <sup>1</sup>	24,142	23,762	23,651	21,780	18,344	15,199
Interbank cheque	37,441	37,133	35,879	35,031	33,904	27,653
<b>Electronic payment cards:</b>	<b>15,427</b>	<b>15,367</b>	<b>15,176</b>	<b>14,496</b>	<b>12,725</b>	<b>10,587</b>
ATM card	2,352	1,951	1,476	1,168	837	505
for cash withdrawal via ATM	1,664	1,403	1,076	888	668	428
for other purposes <sup>2</sup>	688	548	400	280	169	77
Debit card <sup>3</sup>	11,285	11,500	11,662	11,113	9,377	7,939
for cash withdrawal via ATM	6,420	6,876	7,389	7,471	6,782	5,992
for purchasing purpose via EFTPOS	134	161	187	225	233	179
for other purposes <sup>4</sup>	4,730	4,463	4,085	3,417	2,362	1,768
Credit card <sup>5</sup>	1,722	1,825	1,912	2,010	2,232	1,834
for purchasing purpose	1,465	1,574	1,672	1,758	1,964	1,631
for other purposes <sup>6</sup>	257	251	240	252	268	204
e-Money <sup>7</sup>	67.6	90.9	126.2	204.0	279.3	309.6
<b>Automated:</b>	<b>814,821</b>	<b>901,257</b>	<b>918,687</b>	<b>882,366</b>	<b>852,770</b>	<b>980,941</b>
Direct credit <sup>8</sup>	15,199	16,623	18,000	19,827	20,825	21,644
Direct debit <sup>9</sup>	6,250	7,588	7,567	7,727	7,096	7,429
ITMX Bulk Payment	2,538	2,941	3,060	3,436	3,924	4,258
BAHTNET <sup>10</sup>	790,834	874,106	890,060	851,375	820,925	947,610

Source: Bank of Thailand

<sup>1</sup> Some banks do not report in-house provincial cheques and inter-provincial cheques.

<sup>2</sup> Data include purchasing goods and services, deposit and funds transfer.

<sup>3</sup> Domestic and overseas spending of Thai debit cards and domestic spending of foreign debit cards.

<sup>4</sup> Data include purchasing goods and services via other channels, deposit and funds transfer.

<sup>5</sup> Domestic and overseas spending of Thai credit cards and domestic spending of foreign credit cards.

<sup>6</sup> Data include cash withdrawal, cash advance, deposit and funds transfer.

<sup>7</sup> Data exclude top-up cards.

<sup>8</sup> Intra-bank pre-authorized direct credit.

<sup>9</sup> Intra-bank pre-authorized direct debit.

<sup>10</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

Table 8: Use of credit cards and debit cards via EFTPOS (monthly average per card, Baht)

	2015	2016	2017	2018	2019	2020
Credit card <sup>1</sup>	4,673	4,988	5,081	4,955	5,126	4,469
Debit card <sup>2</sup>	182	196	224	241	303	232

Source: Bank of Thailand

<sup>1</sup> Domestic and overseas spending of Thai credit cards via EFTPOS and domestic spending of foreign credit cards.

<sup>2</sup> Domestic and overseas spending of Thai debit cards via EFTPOS and domestic spending of foreign debit cards.

Table 9: Cash withdrawal via ATM (monthly average per card, Baht)

	2015	2016	2017	2018	2019	2020
ATM card	6,501	5,658	4,764	4,154	3,380	3,266
Debit card <sup>1</sup>	11,264	10,885	10,679	9,798	8,820	7,786

Source: Bank of Thailand

<sup>1</sup> Domestic and overseas cash withdrawal of Thai debit cards via ATM and domestic cash withdrawal of foreign debit cards.



Table 10: Notes and coins (at year-end, million Baht)

	2015	2016	2017	2018	2019	2020
<b>Notes and coins</b>	<b>1,719,372</b>	<b>1,773,469</b>	<b>1,878,237</b>	<b>1,933,082</b>	<b>1,986,827</b>	<b>2,269,785</b>
<b>Notes:</b>	<b>1,659,484</b>	<b>1,709,483</b>	<b>1,809,482</b>	<b>1,859,483</b>	<b>1,909,483</b>	<b>2,189,485</b>
500000 Baht	134	152	157	160	160	<b>161</b>
1000 Baht	1,318,903	1,317,006	1,402,484	1,460,469	1,506,320	<b>1,748,763</b>
500 Baht	140,933	173,682	184,638	164,088	162,662	<b>178,387</b>
100 Baht	140,768	155,103	152,363	159,570	162,991	<b>182,012</b>
80 Baht	152	152	152	152	152	<b>152</b>
70 Baht	0	1,393	1,393	1,393	1,393	<b>1,393</b>
60 Baht	1,187	1,247	1,247	1,247	1,247	<b>1,247</b>
50 Baht	18,379	19,208	22,941	25,728	26,514	<b>28,251</b>
20 Baht	35,372	37,885	40,453	43,022	44,391	<b>45,464</b>
10 Baht	3,330	3,329	3,328	3,328	3,327	<b>3,327</b>
5 Baht	196	196	196	196	196	<b>196</b>
1 Baht	121	121	121	121	121	<b>121</b>
50 Satang	9	9	9	9	9	<b>9</b>
<b>Coins:</b>	<b>59,888</b>	<b>63,986</b>	<b>68,755</b>	<b>73,599</b>	<b>77,344</b>	<b>80,300</b>

Source: Bank of Thailand

Table 11: Institutional infrastructure

	2015	2016	2017	2018	2019	2020
<b>Central Bank</b>						
Number of Institutions	1	1	1	1	1	<b>1</b>
Number of Branches	3	3	3	3	3	<b>3</b>
Number of Accounts <sup>1</sup>	193	186	184	184	181	<b>195</b>
Value of Accounts (million Baht) <sup>1</sup>	533,275	265,970	352,586	546,015	482,091	<b>665,815</b>
<b>Thai Commercial Banks</b>						
Number of Institutions	19	19	19	19	19	<b>19</b>
Number of Branches	7,040	6,998	6,766	6,717	6,491	<b>6,150</b>
Number of Accounts	88,529,904	90,648,406	94,846,533	99,882,718	101,635,499	<b>106,540,470</b>
Value of Accounts (million Baht)	11,347,475	12,433,454	13,062,173	13,591,551	13,272,010	<b>14,748,055</b>
<b>Specialized Financial Institutions</b>						
Number of Institutions	6	6	6	6	6	<b>6</b>
Number of Branches	2,445	2,468	2,471	2,475	2,477	<b>2,475</b>
Number of Accounts	63,243,722	68,569,387	74,242,903	72,594,911	76,547,332	<b>81,752,909</b>
Value of Accounts (million Baht)	4,214,675	4,450,107	4,686,137	4,940,815	5,095,488	<b>5,513,693</b>
<b>Foreign Bank Branches</b>						
Number of Institutions	12	11	11	11	11	<b>11</b>
Number of Branches	19	18	18	18	17	<b>17</b>
Number of Accounts	72,132	68,580	68,819	71,202	80,680	<b>86,779</b>
Value of Accounts (million Baht)	798,701	908,302	814,701	812,854	872,996	<b>793,769</b>

Sources: Bank of Thailand

<sup>1</sup> Data exclude regional office.

Table 12: Payment instructions handled by selected interbank settlement systems – Volume of transactions (in thousands)

	2015	2016	2017	2018	2019	2020
<b>Paper-based:</b>	<b>71,036</b>	<b>69,446</b>	<b>65,782</b>	<b>63,280</b>	<b>57,469</b>	<b>47,728</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>1</sup>	48,701	47,322	44,664	42,663	38,629	<b>31,532</b>
Intra-provincial Cheque in Regional Area <sup>2</sup>	11,053	10,775	10,421	10,212	9,418	<b>8,011</b>
Inter-provincial Cheque <sup>3</sup>	11,283	11,350	10,698	10,404	9,423	<b>8,185</b>
<b>Automated:</b>	<b>192,769</b>	<b>192,450</b>	<b>178,878</b>	<b>152,675</b>	<b>125,967</b>	<b>145,173</b>
BAHTNET <sup>4</sup>	3,623	4,013	4,224	4,456	4,651	<b>4,694</b>
ITMX Bulk Payment	41,231	46,789	51,646	56,054	60,484	<b>96,564</b>
ORFT-ATM	147,916	141,648	123,009	92,165	60,832	<b>43,915</b>

Sources: Bank of Thailand and National ITMX Co., Ltd.

<sup>1</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>2</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>3</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

<sup>4</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

Table 13: Payment instructions handled by selected interbank settlement systems – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
<b>Paper-based:</b>	<b>37,440</b>	<b>37,133</b>	<b>35,879</b>	<b>35,031</b>	<b>33,904</b>	<b>27,654</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>1</sup>	33,063	32,852	31,642	30,796	29,964	<b>24,318</b>
Intra-provincial Cheque in Regional Area <sup>2</sup>	3,368	3,245	3,189	3,189	3,011	<b>2,558</b>
Inter-provincial Cheque <sup>3</sup>	1,008	1,036	1,048	1,046	929	<b>777</b>
<b>Automated:</b>	<b>794,347</b>	<b>877,955</b>	<b>893,909</b>	<b>855,420</b>	<b>825,262</b>	<b>952,162</b>
BAHTNET <sup>4</sup>	790,834	874,106	890,060	851,375	820,925	<b>947,610</b>
ITMX Bulk Payment	2,538	2,939	3,060	3,436	3,924	<b>4,258</b>
ORFT-ATM ( Online Retail Funds Transfer )	975	910	789	609	413	<b>294</b>

Sources: Bank of Thailand and National ITMX Co., Ltd.

<sup>1</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>2</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>3</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

<sup>4</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

Table 14: Securities transfer instructions handled by securities settlement systems – Volume of transactions

	2015	2016	2017	2018	2019	2020
<b>Bond registry system:</b>						
Government securities	1,372	511	414	429	736	<b>578</b>
<b>Book-entry system:</b>						
Equity securities (in millions)	4.7	5.5	5.9	6.1	5.8	<b>6.4</b>
Government securities (in millions)	0.2	0.2	0.2	0.2	0.2	<b>0.3</b>

Sources: Bank of Thailand and Thailand Securities Depository Co., Ltd.



Table 15: Securities transfer instructions handled by securities settlement systems – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
<b>Bond registry system:</b>						
Government securities	49.5	94.4	82.7	62.8	64.6	<b>46.3</b>
<b>Book-entry system:</b>						
Equity securities	1,081.3	1,209.1	1,055.4	1,406.7	1,228.0	<b>1,360.2</b>
Government securities	86,804.5	116,869.6	124,323.1	125,642.2	120,280.0	<b>153,590.0</b>

Sources: Bank of Thailand and Thailand Securities Depository Co., Ltd.

Table 16: Number of participants in selected payment and settlement systems

	2015	2016	2017	2018	2019	2020
BAHTNET <sup>1</sup>	65	66	64	67	66	<b>62</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>2</sup>	37	38	36	36	36	<b>36</b>
Intra-provincial Cheque in Regional Area <sup>3</sup>	23	23	23	22	22	<b>22</b>
Inter-provincial Cheque <sup>4</sup>	37	35	36	36	36	<b>35</b>
ITMX Bulk Payment	33	32	33	32	32	<b>32</b>
<b>Bond registry system:</b>						
Government securities	460,436	461,723	462,309	579,429	661,064	<b>661,273</b>
<b>Book-entry system:</b>						
Equity securities and Government securities	39	39	39	39	40	<b>40</b>

Sources: Bank of Thailand and Thailand Securities Depository Co., Ltd.

<sup>1</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

<sup>2</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>3</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>4</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

Table 17: Number of Automated machines<sup>1</sup> and EFTPOS terminals<sup>2</sup>

	2015	2016	2017	2018	2019	2020
<b>Total of Automated machines</b>	<b>66,155</b>	<b>66,812</b>	<b>67,376</b>	<b>67,641</b>	<b>66,652</b>	<b>65,132</b>
Bangkok	17,625	17,547	17,367	16,968	16,455	<b>15,780</b>
Central	22,821	23,027	23,649	23,900	23,862	<b>23,643</b>
Northeast	10,140	10,257	10,267	10,390	10,294	<b>10,304</b>
North	7,533	7,630	7,634	7,772	7,722	<b>7,602</b>
South	8,036	8,351	8,459	8,611	8,319	<b>7,803</b>
<b>Total of EFTPOS terminals</b>	<b>411,755</b>	<b>470,835</b>	<b>708,976</b>	<b>870,454</b>	<b>876,149</b>	<b>881,337</b>
Bangkok	173,693	194,002	260,677	338,831	352,943	<b>355,985</b>
Central	110,407	127,983	203,030	252,439	254,177	<b>257,528</b>
Northeast	36,056	42,102	78,439	90,311	87,701	<b>90,789</b>
North	41,428	47,571	81,204	92,405	86,533	<b>86,533</b>
South	50,171	59,177	85,626	96,468	94,795	<b>90,502</b>

Source: Bank of Thailand

<sup>1</sup> Automated Teller Machines (ATM) and Cash Deposit Machines (CDM)

<sup>2</sup> Data include commercial banks and some credit card companies.

Table 18: Number of electronic payment cards

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>91,131,751</b>	<b>94,020,965</b>	<b>97,984,264</b>	<b>101,831,553</b>	<b>104,089,905</b>	<b>99,343,778</b>
Credit card <sup>1</sup>	18,974,393	20,230,257	20,571,634	22,373,369	23,998,653	<b>24,603,787</b>
ATM card	21,743,686	19,638,033	18,380,892	17,390,984	15,318,234	<b>10,688,019</b>
Debit card	50,413,672	54,152,675	59,031,738	62,067,200	64,773,018	<b>64,051,972</b>

Source: Bank of Thailand

<sup>1</sup> Data include non-bank.

Table 19: Sources of payment revenues of Thai commercial banks (million Baht)<sup>1</sup>

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>81,715</b>	<b>87,648</b>	<b>92,197</b>	<b>92,918</b>	<b>92,859</b>	<b>81,880</b>
Credit card	31,347	33,210	34,009	36,364	38,393	<b>30,498</b>
ATM/Debit card and e-banking	29,275	31,575	33,350	33,354	33,255	<b>29,655</b>
Money transfer and collection	19,178	21,051	23,227	21,682	19,742	<b>20,567</b>
Cheque-related fee	1,915	1,812	1,611	1,518	1,469	<b>1,160</b>

Source: Bank of Thailand

<sup>1</sup> From 2013, data exclude securities custodian and letter of credit

Table 20: Sources of payment revenues of foreign bank branches (million Baht)<sup>1</sup>

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>3,964</b>	<b>4,153</b>	<b>4,289</b>	<b>4,573</b>	<b>4,955</b>	<b>4,381</b>
Credit card	2,758	2,903	2,935	3,291	3,713	<b>3,189</b>
ATM/Debit card and e-banking	41	42	45	44	44	<b>103</b>
Money transfer and collection	1,063	1,109	1,216	1,154	1,118	<b>1,025</b>
Cheque-related fee	102	99	93	84	80	<b>64</b>

Source: Bank of Thailand

<sup>1</sup> From 2013, data exclude securities custodian and letter of credit

Table 21: Daily averages of BOT payment services – Volume of transactions

	2015	2016	2017	2018	2019	2020
BAHTNET <sup>1</sup>	14,909	16,446	17,310	18,188	19,061	<b>19,317</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>2</sup>	200,415	193,941	183,047	174,136	158,317	<b>129,760</b>
Intra-provincial Cheque in Regional Area <sup>3</sup>	45,484	44,160	42,708	41,682	38,597	<b>32,968</b>
Inter-provincial Cheque <sup>4</sup>	46,431	46,516	43,845	42,467	38,617	<b>33,683</b>
ITMX Bulk Payment	169,674	191,758	211,663	228,792	247,884	<b>397,383</b>

Source: Bank of Thailand

<sup>1</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

<sup>2</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>3</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>4</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.



Table 22: Daily averages of BOT payment services – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
BAHTNET <sup>1</sup>	3,254	3,582	3,648	3,475	3,364	<b>3,900</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>2</sup>	136	135	130	126	123	<b>100</b>
Intra-provincial Cheque in Regional Area <sup>3</sup>	13.9	13.3	13.1	13.0	12.3	<b>10.5</b>
Inter-provincial Cheque <sup>4</sup>	4.1	4.2	4.3	4.3	3.8	<b>3.2</b>
ITMX Bulk Payment	10.4	12.0	12.5	14.0	16.1	<b>17.5</b>

Source: Bank of Thailand

<sup>1</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

<sup>2</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>3</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>4</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

Table 23: Peak day figures of BOT payment services – Volume of transactions

	2015	2016	2017	2018	2019	2020
BAHTNET <sup>1</sup>	29,033	28,827	28,077	36,044	30,433	<b>42,581</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>2</sup>	484,821	445,684	429,714	386,101	313,828	<b>272,614</b>
Intra-provincial Cheque in Regional Area <sup>3</sup>	97,533	83,358	79,595	83,420	69,958	<b>56,273</b>
Inter-provincial Cheque <sup>4</sup>	188,315	190,831	186,206	187,085	146,742	<b>129,930</b>
ITMX Bulk Payment	574,555	615,266	744,926	790,750	705,591	<b>1,885,551</b>

Source: Bank of Thailand

<sup>1</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

<sup>2</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>3</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>4</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

Table 24: Peak day figures of BOT payment services – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
BAHTNET <sup>1</sup>	4,776.2	4,610.3	4,845.0	4,684.5	4,875.3	<b>5,664.3</b>
Intra-provincial Cheque in Bangkok and vicinity <sup>2</sup>	297.5	248.6	212.6	248.9	218.0	<b>160.6</b>
Intra-provincial Cheque in Regional Area <sup>3</sup>	25.1	22.4	22.3	22.2	21.4	<b>16.8</b>
Inter-provincial Cheque <sup>4</sup>	12.6	13.7	13.4	15.8	10.7	<b>9.7</b>
ITMX Bulk Payment	46.4	83.1	47.7	63.4	52.1	<b>68.5</b>

Source: Bank of Thailand

<sup>1</sup> Data include funds transfer, third party funds transfer and Multilateral Funds Transfer.

<sup>2</sup> ICAS was implemented to replaced ECS on 4 February 2012.

<sup>3</sup> Provincial Cheque Clearing migrated to ICAS since 15 November 2012 and implemented nationwide in December 2013.

<sup>4</sup> Inter-provincial Cheques cleared via ICAS since 16 May 2013.

Table 25: Use of mobile banking

	2015	2016	2017	2018	2019	2020
No. of agreements	13,918,815	20,883,147	31,779,042	46,004,931	60,084,598	<b>68,696,872</b>
Volume of transactions	263,922,502	584,983,180	1,228,270,303	2,727,906,573	4,635,781,425	<b>7,656,734,543</b>
Value of transactions (billion Baht)	2,800	5,361	8,997	16,828	23,191	<b>29,614</b>

Source: Bank of Thailand

Table 26: Use of internet banking

	2015	2016	2017	2018	2019	2020
No. of agreements	11,901,117	15,095,696	19,899,583	23,861,834	29,404,921	<b>34,946,211</b>
Volume of transactions <sup>1</sup>	186,236,816	240,461,111	248,478,233	418,783,675	973,946,373	<b>2,241,923,360</b>
Value of transactions (billion Baht)	23,630	29,706	23,513	27,177	31,078	<b>37,322</b>

Source: Bank of Thailand

<sup>1</sup> Enquiry transactions were excluded.

Table 27: Interbank funds transfer – Volume of transactions (in thousands)

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>235,636</b>	<b>298,975</b>	<b>463,248</b>	<b>1,177,194</b>	<b>2,502,335</b>	<b>5,067,477</b>
ATM	147,916	141,648	123,009	92,165	60,832	<b>43,915</b>
Counter	9,791	9,702	8,781	6,802	5,296	<b>3,590</b>
Internet banking and mobile banking	77,928	147,624	331,458	1,078,227	2,436,207	<b>5,019,972</b>

Source: Bank of Thailand

Table 28: Interbank funds transfer – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>1,819</b>	<b>2,184</b>	<b>3,042</b>	<b>6,870</b>	<b>13,394</b>	<b>20,712</b>
ATM	975	910	789	609	413	<b>294</b>
Counter	189	183	171	145	125	<b>99</b>
Internet banking and mobile banking	656	1,091	2,082	6,116	12,856	<b>20,319</b>

Source: Bank of Thailand

Table 29: Bill payment at counters – Volume of transactions (in thousands)

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>429,287</b>	<b>479,106</b>	<b>510,820</b>	<b>475,062</b>	<b>382,739</b>	<b>305,676</b>
<b>Total bill payment at bank counters</b>	<b>107,262</b>	<b>113,367</b>	<b>120,891</b>	<b>104,171</b>	<b>69,002</b>	<b>57,047</b>
Cash	101,594	104,354	107,590	88,578	63,508	<b>51,679</b>
Cheque	2,321	3,007	3,624	3,627	3,221	<b>2,905</b>
Others	3,348	6,006	9,677	11,967	2,272	<b>2,463</b>
<b>Total bill payment at non-bank counters</b>	<b>322,025</b>	<b>365,739</b>	<b>389,929</b>	<b>370,891</b>	<b>313,737</b>	<b>248,629</b>
Cash	318,340	362,038	385,640	367,768	311,211	<b>246,867</b>
Cheque	361	358	362	377	370	<b>331</b>
Others	3,324	3,342	3,927	2,746	2,156	<b>1,430</b>

Source: Bank of Thailand

Table 30: Bill payment at counters – Value of transactions (billion Baht)

	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>7,704</b>	<b>7,461</b>	<b>7,906</b>	<b>6,994</b>	<b>5,537</b>	<b>4,792</b>
<b>Total bill payment at bank counters</b>	<b>6,886</b>	<b>6,608</b>	<b>7,010</b>	<b>6,123</b>	<b>4,716</b>	<b>4,137</b>
Cash	2,696	2,802	3,077	2,856	2,180	<b>1,860</b>
Cheque	2,629	2,705	2,970	2,324	1,570	<b>1,404</b>
Others	1,561	1,102	963	943	966	<b>874</b>
<b>Total bill payment at non-bank counters</b>	<b>818</b>	<b>853</b>	<b>896</b>	<b>871</b>	<b>821</b>	<b>655</b>
Cash	810	845	887	863	814	<b>649</b>
Cheque	3	4	4	5	4	<b>3</b>
Others	4	4	5	4	3	<b>2</b>

Source: Bank of Thailand



Table 31: Use of e-Money <sup>1</sup>						
	2015	2016	2017	2018	2019	2020
No. of cards/accounts	31,070,380	39,181,287	53,171,877	91,747,747	89,340,646	<b>107,767,305</b>
Volume of transactions	883,352,315	1,076,300,313	1,272,235,125	1,511,010,671	1,965,696,357	<b>2,136,397,113</b>
Value of transactions (million Baht)	67,617	90,946	126,172	204,038	279,305	<b>309,551</b>

Source: Bank of Thailand

<sup>1</sup> Data exclude top-up cards.

Table 32: Fraud through specific payment channels and payment instruments <sup>1</sup> (million Baht)						
	2015	2016	2017	2018	2019	2020
<b>Total fraud</b>	<b>2,321</b>	<b>593</b>	<b>753</b>	<b>896</b>	<b>1,204</b>	<b>732</b>
Payment channels <sup>2</sup>	2,018	224	377	519	674	<b>237</b>
Payment instruments <sup>3</sup>	303	369	376	377	530	<b>495</b>

Source: Bank of Thailand

<sup>1</sup> Data collect from banks, some special financial institutions and some credit card companies.

<sup>2</sup> Fraud through specific payment channels include phone banking, mobile banking, internet banking, pass book and other channels.

<sup>3</sup> Fraud via specific payment instruments include cheque, credit card, ATM card, debit card, prepaid card and other cards.

## Notes of statistical tables

Symbols used in tables	Explanation
"_"	No data
"nav."	Data not available
"neg."	Negligible in value compared to all other
"0"	Zero or near zero in value

Table 1

- Gross Domestic Product expressed in current price

Table 6-7

- Using the average foreign exchange rate

- Data on cheque includes both in-house and interbank cheques and is compiled from all commercial banks as well as Specialized Financial Institutions

- Data on volume of credit card transactions includes bank cards, affinity cards, non-bank cards/affinity cards, and foreign credit cards used in Thailand

- Data on credit card spending includes information on non-bank credit cards

- Data on e-Money excludes pre-paid card for mobile phones

- Direct credit refers to pre-authorized in-house direct credit funds transfers

- Direct debit refers to pre-authorized in-house direct debit funds transfers

- BAHTNET data consists of data relating to interbank funds transfers, third party funds transfers and multilateral funds transfers

Table 8

- Average value of monthly transactions by debit cards and credit cards via EFTPOS terminals within and outside the country

Table 11

- Excludes data on the number of accounts and outstanding amounts held by Bank of Thailand's regional offices

Table 12-13

- BAHTNET data includes data relating to interbank funds transfers, third-party funds transfer and multilateral funds transfer

Table 14-15

- Equity securities settlements are processed via scripless book-entry system only

Table 17

- Include ATMs and CDMs

- Data on the number of EFTPOS terminals represents information consolidated from commercial banks and some credit card companies

Table 18

- Data on the number of credit cards includes non-bank credit cards

Table 21-24

- BAHTNET data includes data relating to interbank funds transfers, third-party funds transfer and multilateral funds transfer

Table 26

- Excluding enquiry transactions

Table 31

- Electronic money data does not include data on top up of mobile cards

## Payment Systems Report Published annually

This Payment Systems Report  
is available on  
the Bank of Thailand's website  
(<https://www.bot.or.th>)

The Payment Systems Policy  
and Financial Technology Group  
of the Bank of Thailand is responsible  
for the explanations and viewpoints  
expressed in this report.  
Due acknowledgment is appreciated  
for the use of texts or figures  
in any topic or section of this report,  
in other publications.

Enquiries can be addressed to  
Payment Development and Analysis Team,  
Payment Systems Policy Department, Bank of Thailand  
Telephone: +66 2283-6548, +66 2356 7068, +66 2356 7782  
Facsimile: +66 2282 7717  
Email: [PSAnalysis@bot.or.th](mailto:PSAnalysis@bot.or.th)



BANK OF THAILAND



BANK OF THAILAND

BANK OF THAILAND

273 Samsen Road, Watsamphraya Phra Nakhon District Bangkok, 10200

Tel. 0-2283-5353 [www.bot.or.th](http://www.bot.or.th)



Bank of Thailand Channel  
Hotline1213 Channel



[www.bot.or.th](http://www.bot.or.th)



@bankofthailand



bankofthailand  
Hotline 1213



BOT Payment  
Annual Report  
2563/2020