



Payment Systems Oversight Annual Report:2021

Governor's Foreword



The evolution of the payment systems in Ghana continued in 2021, supported by increased innovation, digitalisation and widespread adoption of technology.

The Bank initiated various policy measures that fostered the encouragement of innovative and affordable digital financial services as an alternative to cash payments. One of these initiatives was the piloting of a general-purpose Central Bank Digital Currency (CBDC), referenced as the “eCedi”, a digital version of Cedi notes and coins. Also, the Bank issued a crowdfunding policy to promote and guide the development and use of crowdfunding products and services for the banking sector. Furthermore, a regulatory and innovation sandbox pilot in collaboration with EMTECH Service LLC was launched in the review year. This is in line with our commitment to evolve an enabling and inclusive regulatory environment that promotes FinTech and supports innovation.

To promote standardisation of cheques and cheque security features, the Bank published a Cheque Printer Accreditation Standard (CPAS) in 2021. The CPAS is a regulatory

and supervisory framework for assessing cheque printers’ compliance with the required standards for accreditation, in line with section 85 of the Payment Systems and Services Act, 2019 (Act 987).

A three-tiered merchant account framework designed to ensure that Small and Medium-sized Enterprises (SMEs) development of tailored accounts to support operational efficiency of SMEs was introduced.

Overall, the payment systems industry witnessed a significant increase in digital payments in 2021. The Ghana Interbank Payment and Settlement System (GhIPSS) reported increases in transactions processed across its major platforms in the review year. GhIPSS Instant Pay (GIP), for instance, recorded a significant increase in total volume to 37.7 million, representing a 453.62 per cent increase over the volume recorded in 2020. In value terms, GIP recorded a total value of GH¢31.4 billion in 2021, representing a 242.83 per cent increase over the value recorded in 2020.

The Automated Clearing House direct credit Near Real-Time (NRT), which was introduced by GhIPSS in 2020, also recorded significant increases in volume and value terms in 2021.

Mobile money volume of transactions increased to 4.25 billion in 2021, representing a 47.1 per cent growth, compared to 2020. Similarly, the total value of transactions increased to GH¢ 978.32 billion in 2021, from GH¢ 571.80 billion in 2020.

The Bank will continue to work collaboratively with all stakeholders to push the frontiers of Ghana’s payment systems to

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new heights, and help to further consolidate the gains made within the ecosystem.

In conclusion, I would like to express my appreciation to the Board of Directors, the Payment Systems Advisory Committee,

Management and Staff of the Bank for their hard work, support and commitment in a rather challenging year.

Dr. Ernest K. Y. Addison
Governor, Bank of Ghana

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Executive Summary

The payment systems landscape continued to deepen in 2021 on account of technological innovations and changing consumer preferences. The Government of Ghana and the central bank continued to consciously promote policies aimed at promoting financial inclusion and innovation in the payment landscape. The Government pursued cash-lite policies through digitalisation of People-to-Government (P2G) payment channels.

Financial Technology (FinTech) companies continued to emerge to provide digital financial services and innovation amid the lingering effects of the Covid-19 pandemic. The formal banking sector did not lag behind, and continued to partner with mobile money operators and FinTechs to develop and deliver innovative financial products and services.

Other significant development during the year was the commencement of the piloting phase of the eCedi, a general-purpose central bank token-based digital currency (retail CBDC) in partnership with Giesecke+Devrient (G+D).

The Bank, in facilitating the modernisation of indigenous financial services such as “susu” with digital tools, issued the crowdfunding policy. Among others, the policy is aimed at promoting innovative digital crowdfunding solutions that comply with data protection and consumer privacy protection regulations,

good governance, accountability and relevant Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) laws.

The Bank in 2021 approved 26 products and services for financial institutions, compared to 32 products and services in 2020.

All the major payment streams (excluding cash) showed significant increases in both volume and value, with the exception of the Ghana Interbank Settlement (GIS) or Real Time Gross Settlement (RTGS) transactions, which recorded a decline in value by 20.98 per cent, but with a marginal increase in volume of transactions by 4.39 per cent. The volume and value of e-zwich™ card transactions also declined by 25.02 per cent and 12.39 per cent respectively, over the 2020 position, while Gh-link™ transactions increased in both volume and value by 10.26 per cent and 29.60 per cent respectively, over the 2020 positions. GhIPSS Instant Pay (GIP), a service which permits payments across financial institutions electronically from a customer’s bank account to a beneficiary bank account, increased significantly in both volume and value. The number of mobile money accounts increased by 25.56 per cent to 48,308,945 at the end of December 2021, from 38,473,734 at end-December 2020. Mobile money continued to

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increase in both volume and value of transactions during the year.

The number of cards issued by banks increased in 2021. Credit card issuance

increased by 9.95 per cent to 36,327, while prepaid and debit cards increased by 45.47 per cent to 834,584 and 2.56 per cent to 4,936,246 respectively.

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CHAPTER 1: GLOBAL DEVELOPMENTS IN THE PAYMENT ECOSYSTEM

1.1 Introduction

In 2021, the payments landscape continued to deepen on account of technological innovations and changing consumer preferences. New digital payment instruments, including privately issued “stablecoins” continued to evolve, and various central banks also continued to explore the adoption of a Central Bank Digital Currency (CBDC) to further deepen payment ecosystems. Payment Service Providers (PSPs), including banks, positioned themselves to drive digitisation of payments. Most countries moved to real-time settlement, creating conditions for non-bank financial institutions, including FinTech and BigTech, to participate in the payment value chain.

Mobile money services enabled individuals and institutions to transfer funds, pay bills and fees. These services have become a convenient means of payment in Ghana.

1.2 Innovations in the Payments and Services Landscape

Some of the major global payment systems innovations that took place in 2021 were as follows:

- **Europe** – In July 2021, the European Central Bank’s Governing Council initiated the process for a new Euro system work stream in order to explore possible technological improvement in the wholesale infrastructure for the European Central Bank (ECB) with the view to provide digital Euro. The digital Euro, when launched by the ECB, would ensure the use of central bank money in a digital form. The digital Euro would also enhance privacy of users.
- **United States of America** – The pandemic propelled a greater proportion of consumers to switch to mobile wallets, digital payments and contactless cards or tap-and-go payment offerings to make purchases. Ninety-one per cent of all respondents or consumers in McKinsey’s 2021 Digital Payment Consumer survey said that at least they made purchases online a few times per month, and nearly one in three shopped online at least a week or more. The survey also showed that more than four in five Americans used some form of digital payment. The use of digital payment in the US continued to grow, including new

innovations like “buy now, pay later” (BNPL) and cryptocurrency.

- **Asia** – Asia is the world leader in cashless transactions, with a predicted average annual growth rate of 16 per cent. China was expected to have the highest penetration rate for proximity in mobile payments in 2021, with more than 80 per cent of all smart phone users making payments through their smart phones. Malaysia and Indonesia recorded more than 60 per cent and 40 per cent growth in electronic money transactions respectively in 2021. Mobile wallet payment in South Korea also surged by 46 per cent. The leading mobile payment service providers in Asia included iD Mobile and Suica Mobile in Japan, Naver Pay and Kakao Pay in South Korea as well as Alipay and Tenpay in China.
- **Africa** – In October 2021, the Central Bank of Nigeria (CBN) launched its Central Bank Digital Currency (CBDC) named the eNaira. In 2021, the Central Bank of Tanzania reported that it was considering launching its own CBDC, while South Africa also reported testing its own CBDC. Although the use of cash is prevalent in Africa, it is expected to gradually decline in favour of digital payment channels, including mobile

money payments. MTN mobile network (Nigeria) was awarded a license to operate as Payment Service Bank (PSB). In Ghana, the increased mobile phone penetration continued to influence the use of digital financial services. The increased mobile phone usage facilitated the delivery of wallet-based savings, insurance and investment products. In addition, financial institutions partnered with mobile money operators and FinTechs to provide electronic payments and digital services.

- **Middle East** – According to a study from a London-based payment systems company, Checkout.com, consumers in United Arab Emirates (UAE), Saudi Arabia, Bahrain, Jordan, Qatar, Kuwait and Pakistan were likely to shop online more frequently over the next year. The growth in mobile phone penetration was expected to support digital payments significantly in the region. The mobile market in the Middle East region was projected to reach various milestones on account of a billion mobile broadband connections by 2021 and more than half of the population subscribing to mobile internet services by 2023. Saudi Arabia’s telecommunications company launched a digital wallet application named STC Pay, which allowed

customers to send money to other users and also make digital payments.

- **Latin America** – Although cash was predominant in Latin America, digital payment started to pick up in 2021, and the number of financial technology companies also continued to increase. In broad terms, Latin America witnessed increased digital payments due to the pandemic. The pandemic has changed the payment landscape in the region and accelerated the development of related technologies. Consumers ditched legacy banks in favour of agile and adaptive service providers. Adoption of digital banking increased across Latin America with the support of FinTech and telecommunication companies. Creating seamless mobile-optimised financial services became vital to engaging and retaining customers in the market place. Solutions, such as the Central Bank of Brazil's PIX payment system became very popular in Brazil on account of consumer preferences.

E-commerce, streaming services and online food deliveries became popular on account of digitalisation. Contactless payments, for instance, have proven to be an essential alternative to the use of cash. Transaction value of digital commerce in the region was estimated to

increase approximately by 73 per cent in 2025 from US\$ 100 billion in 2019.

1.3 Technology

Technology continued to play a critical role in the payment ecosystem. Biometric technology, for instance, became popular with consumer products and provided additional layer of security to mobile payment system. Introduction of biometric technology in authentication of online payments helped to enhance consumer trust. There were moves away from cash to cheques, from cards to online payments and to payments using mobile devices. Businesses that did not accept credit cards some years ago have embraced the changing trends.

The use of mobile payment applications, internet banking and mobile banking increased across the globe. Payments have evolved at a rapid pace with new providers, platforms and new payment tools being launched on a daily basis. The COVID-19 impact has also encouraged digital payment and driven significant growth and adoption of digital payments. The major factors that have contributed to these trends in the payment ecosystem include:

- Technological advancements in the use

of Blockchains and Artificial Intelligence;

- Increased penetration in the use of mobile wallets;
- Supportive Government and Central Banks policies for FinTech innovations;
- Enhanced security; and
- Easy-to-use interface with fast and efficient payment mechanisms.

1.4 Products

In 2021, with the support of regulators, banks and FinTechs introduced various innovations in the digital payment industry. Contactless payments became more prevalent in most countries. Payment institutions leveraged on contactless payment systems, such as Samsung Pay, Apple Pay and Google pay to

make payment convenient for customers. The use of devices with biometric authentication, mobile point of sales (mPOS), banking cards, Unstructured Supplementary Service Data (USSD), United Payment Interface (UPI), Aadhaar Enabled Payment System (AEPS), mobile wallets, smart speakers, mobile and internet banking and the social media payment options also increased significantly during the year.

CHAPTER 2: DEVELOPMENTS IN THE GHANAIAN PAYMENT SYSTEMS

2.1 Introduction

Key developments in the payment and settlement systems included the following:

- Enhancement of Regulatory Framework;
- Oversight of Payment Service Providers;
- Product Innovation and Development;
- Financial Inclusion; and
- Non-Cash Payment Streams.

2.2 Enhancement of Regulatory Framework

The Payment Systems Advisory Committee (PSAC) acted in advisory capacity to the Bank on regulation, oversight, operational and technical standards of payment, clearing and settlement systems in accordance with section 4 (2) of the Payment Systems and Services Act, 2019 (Act 987).

Pursuant to section 5 (1) of the Payment Systems and Services Act, 2019 (Act 987) the PSAC in 2021, organised two meetings. Members of the committee reviewed reports of the various working groups and deliberated on the status of implementation

of the Payment Systems Strategy (2019-2024).

2.3 Oversight of Payment Service Providers

In 2021, the Bank conducted onsite and offsite examination of the operations and activities of the payment service providers, to determine their level of compliance with the requirements of the Payment Systems and Services Act, 2019 (Act 987), and other directives, as well as guidelines issued by the Bank.

2.4 Product Innovation and Development

In 2021, the Bank approved 26 products and services for various financial institutions compared with a total of 32 and 37 products and services approved in 2020 and 2019, respectively. The approved products and services included digital micro savings, cross border banking services, card issuance, agency banking, remittance, digital micro loan, social media banking, mobile banking, acquiring services, ATM services enhancement and sub-agency banking.

2.5 Financial Inclusion

Most countries continued to put in place policy measures and controls to contain the spread of the COVID-19 pandemic.

Although the pandemic presented a number of economic challenges, the Ghanaian economy recorded increases in the adoption of digital financial services.

A major development that took place in 2021 and would going forward advance the agenda of financial inclusion and increase the use of electronic payment channels was the launch of Ghana's Central Bank Digital Currency (CBDC), also known as the eCedi. Bank of Ghana partnered with Giesecke + Devrient (G+D) to pilot a general purpose

CBDC to complement and serve as an alternative to bank notes and coins.

2.6 Non-cash Payment Streams

Non-cash payment streams, such as GhIPSS Instant Pay, mobile money, mobile money interoperability, ACH direct credit and debit, continued to increase in transactional volumes and values in 2021. The ACH Direct Credit Near Real-Time (NRT), which commenced in 2020 and allowed banks to credit beneficiary customer accounts almost immediately funds were received (within 15 minutes), showed significant increase.

CHAPTER 3: APPROVED PRODUCTS AND SERVICES

3.1 Introduction

In 2021, the Bank approved 26 products and services for financial institutions, as compared to 32 in 2020. The approved products and services were mainly in-bound remittances, mobile banking services, card issuance and digital micro loans. Others included agency banking, POS and ATM acquiring services, remote account opening, WhatsApp/chat banking and Quick Response (QR) code. The breakdown of the products and services approved by the Bank from 2016 to 2021 is shown in Table 1.

3.1.1 In-bound Remittance

In the review year, many banks moved away from over-the-counter transactions to termination of funds into mobile money wallets, bank accounts of customers and non-customers.

The period also saw the Bank granting authorisation to four banks to partner Money Transfer Organisations (MTOs) to terminate inward remittances into bank accounts, mobile money wallets or cash pick-up over-the-counter.

3.1.2 Mobile Banking Services

Some financial institutions upgraded and enhanced their payment delivery channels

(digital banking services and USSD banking service), while others introduced new mobile banking services.

The Bank approved mobile banking services for six financial institutions in 2021, as compared to seven in 2020.

3.1.3 Card Issuance

The Bank granted approval to three financial institutions to issue Visa and domestic EMV Gh-Link™ branded cards. One of the financial institutions was granted approval to issue United States Dollar (USD) prepaid cards for only international transactions.

3.1.4 Digital Loans

Four financial institutions received authorisation to offer digital micro loans that can be accessed through the usage of USSD code or mobile application channel.

3.1.5 Agency Banking

Agency banking activities, where banks engaged various retailers as agents to extend banking services to the general public expanded during the year under review. The Bank granted authorisation to two banks to engage sub-agents for money transfer services.

3.1.6 POS/ATM Acquiring Services

Authorisation was granted to two banks to offer Point of Sale/ Automated Teller Machine (POS/ATM) acquiring services, and one bank to offer e-commerce acquiring services, which enabled card holders to facilitate payment transactions from registered merchants through payment portals such as websites and mobile applications.

3.1.7 Remote Account Opening

In 2021, the Bank granted approval to one bank to offer remote account opening. The remote account-opening product allowed individuals to open bank accounts remotely from their smartphones using the bank's mobile application or USSD banking feature. Customers therefore did not have to physically visit the bank's branch to open an account.

3.1.8 WhatsApp/Chat Banking

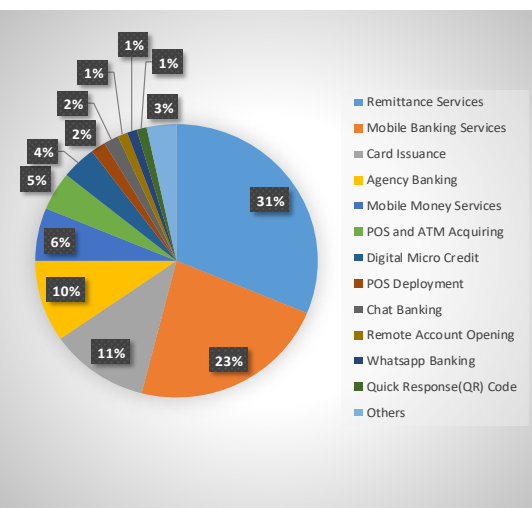
Two banks received authorisation to introduce WhatsApp/chat banking that enabled their customers perform some banking services through social media platforms such as WhatsApp, Facebook and Telegram.

3.1.9 Quick Response (QR) Payment Solution

In the review year, the Bank granted approval to a bank to offer QR payment solution to its customers. This is an alternative form of payment, where individuals are able to scan designated bar codes linked to accounts of vendors, using their mobile banking application to make payments directly into the bank accounts of the vendors.

Table 1: Total Number of Authorized Products and Services from 2016-2021

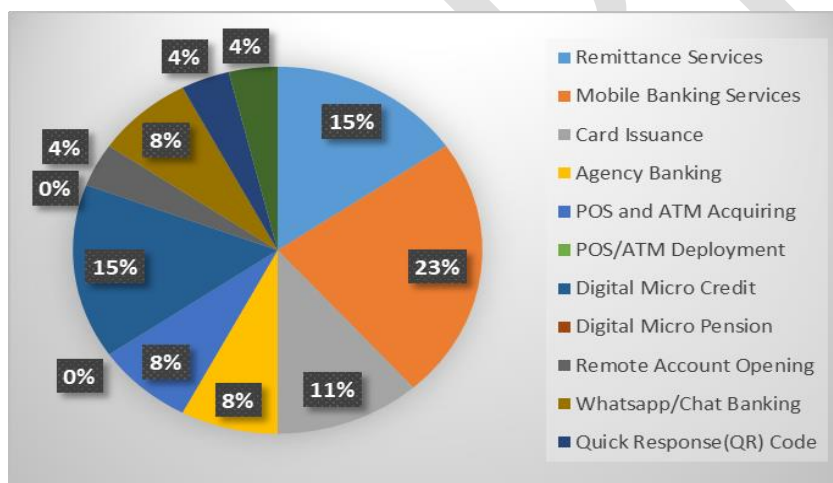
Products/Year	2016	2017	2018	2019	2020	2021	Grand Total
Remittance Services	1	6	13	19	12	4	55
Mobile Banking Services	8	11	2	6	7	6	40
Card Issuance	4	3	3	4	3	3	20
Agency Banking	2	5	4	2	2	2	17
Mobile Money Services	0	5	4	2	0	0	11
POS and ATM Acquiring	1	3	0	2	0	2	8
Digital Micro Credit	0	0	0	1	2	4	7
POS Deployment	0	3	0	0	0	0	3
Chat Banking	0	0	0	0	2	1	3
Cheques Clearing Services	0	0	0	1	0	0	1
Aggregation Service	0	1	0	0	0	0	1
ATM Deployment	0	1	0	0	0	0	1
Digital Micro Pension	0	0	1	0	0	0	1
Remote Account Opening	0	0	0	0	1	1	2
Whatsapp Banking	0	0	0	0	1	1	2
Virtual Card	0	0	0	0	1	0	1
Quick Response(QR) Code	0	0	0	0	1	1	2
Others	0	0	0	0	0	1	1
Grand Total	16	38	27	37	32	26	176



**Others in graph includes Cheque clearing services, Aggregation services, Digital Micro pension, ATM Deployment and virtual card

Source: Bank of Ghana

Chart 1: Approved Products & Services (2021)



Source: Bank of Ghana

CHAPTER 4: PAYMENT SYSTEMS TRANSACTIONS

4.1 Introduction

The Bank has oversight responsibility over the major payment system infrastructures comprising Ghana's Real Time Gross Settlement (RTGS) system, Cheque Codeline Clearing (CCC) system, Ghana Automated Clearing House (GACH) system, National Biometric Smartcard Payment System - e-zwich™, National Switching and Processing System - gh-link™, GhIPSS Instant Pay (GIP), retail payments interoperability system, Ghana's Paper Payment Instrument Accreditation Scheme, and the Mobile Money sub-sector.

4.2 Ghana Interbank Settlement System

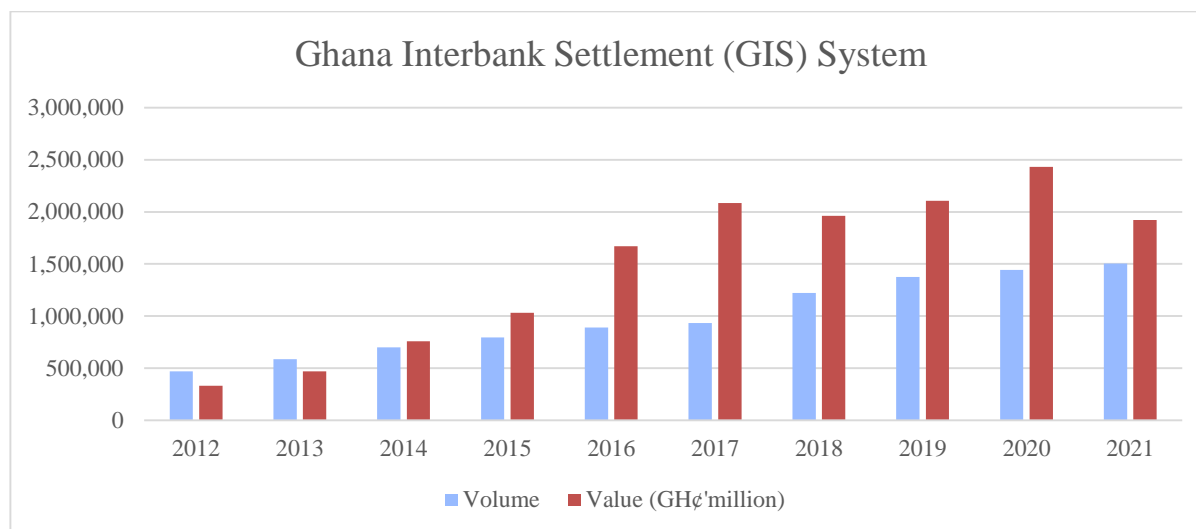
The total volume of Ghana Inter-bank Settlement (GIS) transactions as at the end of December, 2021 stood at 1,505,523, representing a 4.39 per cent increase. Total value of transactions, however, declined by 20.98 per cent, to GH¢1,922,865.47 million. Average value per transaction was GH¢1,277,207.63 at end-December 2021, compared to GH¢1,687,399.70 at end-December 2020. (See Table 2 and Chart 2)

Table 2: Ghana Interbank Settlement Transactions

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Volume	1,221,650	1,376,094	1,442,182	1,505,523	63,341	4.39
Value (GH¢million)	1,963,465.27	2,106,117.85	2,433,537.47	1,922,865.47	(510,672)	(20.98)
Average value per transaction (GH¢)	1,607,224.06	1,530,504.35	1,687,399.70	1,277,207.63	(410,192.07)	(24.31)

Source: Bank of Ghana

Chart 2: Ghana Interbank Settlement Transaction



Source: Bank of Ghana

4.3 Cheque Codeline Clearing

For the review period, the total volume of inter-bank cheques cleared increased marginally by 1.23 per cent to 5,975,750, from 5,903,331 in 2020. The total value of

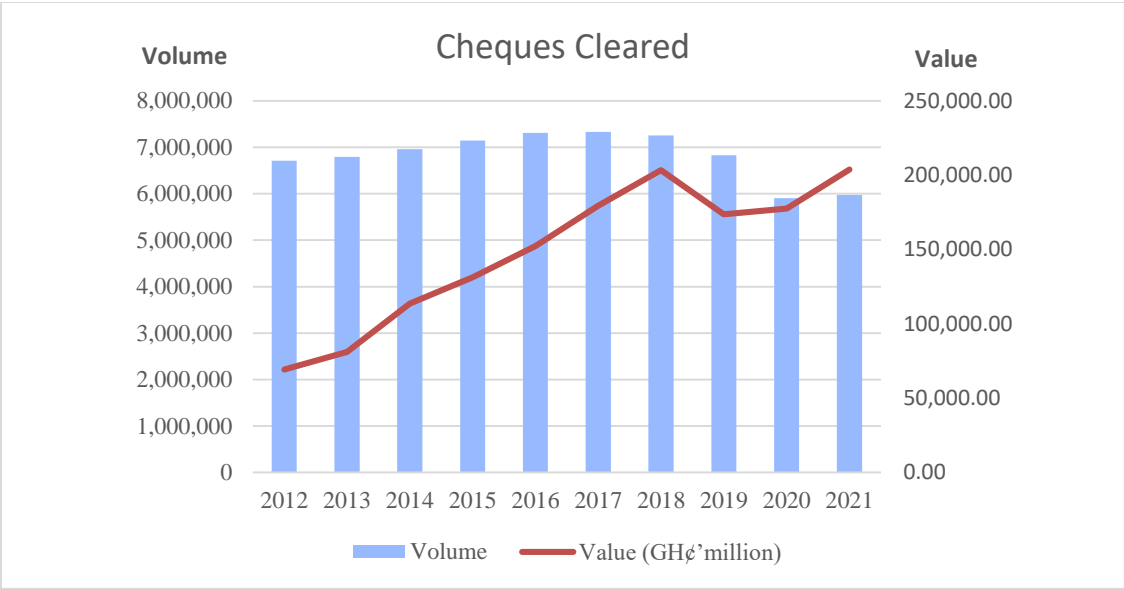
transactions also increased by 14.77 per cent, to GH¢203,853.81 million, from GH¢177,625 million in 2020. (See Table 3 and Chart 3).

Table 3: Cheque Codeline Clearing

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Volume	7,255,220	6,831,417	5,903,331	5,975,750	72,419	1.23
Value (GH¢'million)	203,465.32	173,623.25	177,625.00	203,853.81	26,228.81	14.77
Average value per transaction GH¢	28,043.99	25,415.41	30,088.94	34,113.51	4,024.57	13.37

Source: Bank of Ghana

Chart 3: Cheque Codeline Clearing (CCC)



Source: Bank of Ghana

4.4 Ghana Automated Clearing House

4.4.1 Direct Credit

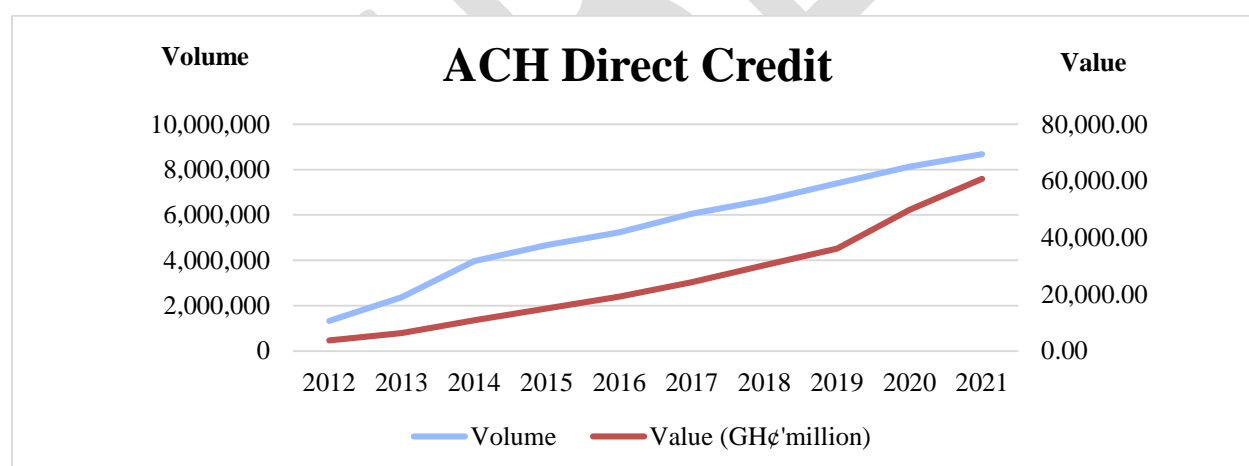
During the review year, the total volume of transactions cleared through the direct credit system increased by 6.84 per cent, to 8,688,154 in 2021, from 8,131,989 in 2020. Total value of direct credit transfers also increased to GH¢60,730.43 million in 2021, from GH¢49,794.26 million in 2020. Payment of Social Security and National Insurance Trust (SSNIT) pensions by Bank of Ghana on behalf of Government

continued to be the major contributor to the growth of direct credit transactions. Express ACH direct credit recorded an increase of 14.16 per cent and 25.94 per cent in both volume and value of transfers over the 2020 positions of 1,403,720 and GH¢15,547.81 million, respectively. ACH Direct Credit Near Real-Time (NRT) volume and value also went up by 412.09 per cent and 615.65 per cent, respectively, in 2021. (See Table 4 and Chart 4)

Table 4: GACH Direct Credit Transactions

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Volume	6,645,126	7,404,059	8,131,989	8,688,154	556,165	6.84
Value (GH¢'million)	30,226.94	36,137.96	49,794.26	60,730.43	10,936.17	21.96
Average value per transaction (GH¢)	4,548.74	4,880.83	6,123.26	6,990.03	866.77	14.15
Express ACH Direct Credit Volume	697,642	1,153,551	1,229,629	1,403,720	174,091	14.16
Express ACH Direct Credit value (GH¢'million)	7,553.15	11,534.13	15,547.81	19,580.40	4,032.59	25.94
ACH Direct Credit Near Real-Time (NRT) Volumes	-	-	109,259	559,509	450,250	412.09
ACH Direct Credit Near Real-Time (NRT) Values (GH¢'million)	-	-	1,345.31	9,627.66	8,282	615.65

Source: Bank of Ghana

Chart 4: GACH Direct Credit Transactions

Source: Bank of Ghana

4.4.2 Direct Debit

In 2021, the total volume of direct debit transactions increased by 3.98 per cent to 860,858, from 827,901 in 2020. The total value of transactions also increased by 43.14 per cent to GH¢1,339.97 million. The

average value per transaction also went up to GH¢1,556.55 in 2021, from GH¢1,130.69 in 2020.

Despite the growth in the volume and value of transactions, significant volume of direct

debits was returned unpaid on account of insufficient funds, invalid account number or mandate, wrong presentation, stopped

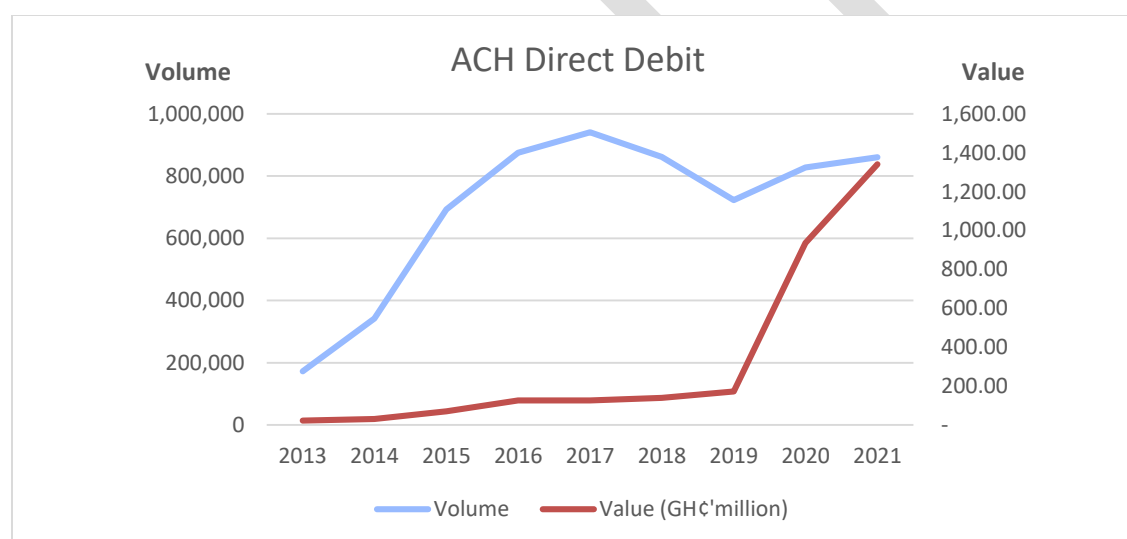
payment and blocked customer account. (See Table 5 and Chart 5).

Table 5: GACH Direct Debit Transactions

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Volume	861,169	722,337	827,901	860,858	32,957	3.98
Value (GH¢'million)	139.15	173.10	936.10	1,339.97	403.87	43.14
Average value per transaction (GH¢)	161.58	239.64	1,130.69	1,556.55	425.86	37.66

Source: Bank of Ghana

Chart 5: GACH Direct Debit Transactions



Source: Bank of Ghana

4.5 E-zwich Transactions

The number of e-zwich™ cards issued in 2021 increased to 3,468,894, from 3,252,493 in 2020. Total volume and value of e-zwich transactions, however, declined by 25.02 per cent to 7,856,107 and 12.39 per cent to

GH¢7,913.80 million, respectively. (See Table 6 and Chart 6).

The Government continued to use the e-zwich™ platform to pay caterers of the National School Feeding Programme, beneficiaries of the Livelihood Empowerment Against Poverty (LEAP),

Youth Employment Agency (YEA), Nurses and Teacher Trainees allowances, Students Loans Trust Fund and personnel of the

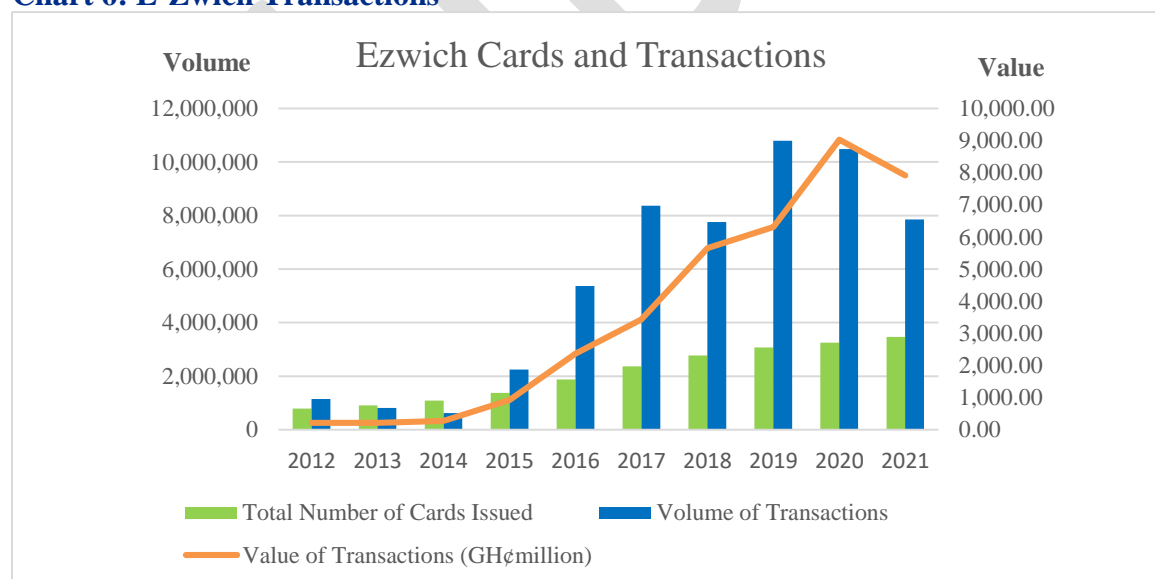
National Service Scheme as a means of ensuring efficiency in payments and promoting a cash-lite society.

Table 6: E-zwich Transactions

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Total Number of Cards Issued	2,774,799	3,072,965	3,252,493	3,468,894	216,401	6.65
Cards with Value (% of total)	53.24	71.67	67.14	67.42	0.28	0.42
Value on Cards (GH¢'million)	123.19	202.91	180.80	192.36	11.56	6.39
Average Value Per Card (GH¢)	83.38	92.13	82.79	82.75	(0.04)	(0.05)
Volume of Transactions	7,759,354	10,796,560	10,477,601	7,856,107	(2,621,494)	(25.02)
Value of Transactions (GH¢'million)	5,651.14	6,308.37	9,033.25	7,913.80	(1,119.45)	(12.39)

Source: Bank of Ghana

Chart 6: E-Zwich Transactions



Source: Bank of Ghana

4.6 Gh-Link™ (National Switch)

The Gh-link™ platform recorded a total of 889,266 transactions with a value of GH¢427.30 million during the review year, compared with 806,486 and

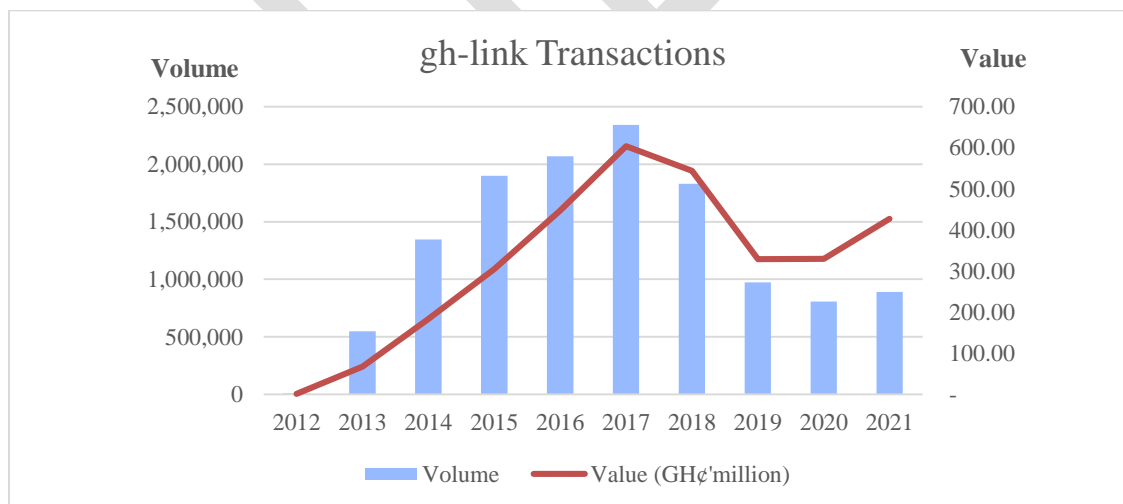
GH¢329.70 million in 2020 respectively. ATM transactions continued to dominate on the Gh-link™ platform and formed more than 99.00 per cent of the total transactions. (See Table 7 and Chart 7)

Table 7: Gh-Link™ Transaction

Indicators	2018	2019	2020	2021	2021 change	2021 Growth (%)
Volume	1,830,182	972,746	806,486	889,266	82,780	10.26
Value (GH¢'million)	543.74	329.23	329.70	427.30	97.60	29.60
Average value per transaction GH¢	297.10	338.45	408.81	480.51	71.70	17.54

Source: Bank of Ghana

Chart 7: Gh-Link™ Transactions



Source: Bank of Ghana

4.7 GhIPSS Instant Pay

GhIPSS Instant Pay (GIP) volume of transactions increased to 37,672,319 in 2021, from 6,804,754 in 2020.

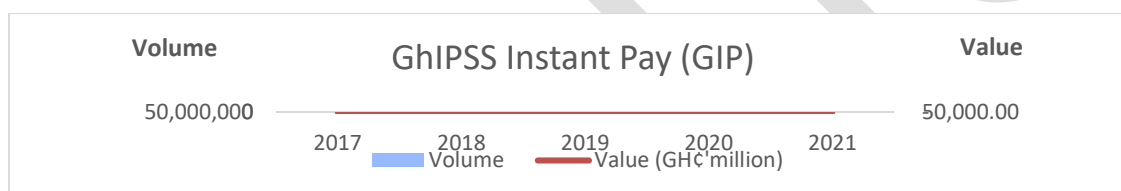
Total value of GIP transactions also went up to GH¢31,357.40 million, from GH¢9,146.76 million in 2020. (See Table 8 and Chart 8)

Table 8: GIP Transactions

Indicators	2020	2021	2021 Change	2021 Growth (%)
Volume	6,804,754	37,672,319	30,867,565	453.62
Value (GH¢'Million)	9,146.76	31,357.40	22,210.64	242.83

Source: Bank of Ghana

Chart 8: GIP Transactions



Source: Bank of Ghana

4.8 Internet and Mobile Banking

The number of registered internet banking customers declined by 4.77 per cent, to 970,435 in 2021, compared to 2020. Registered mobile banking customers also decreased to 4,062,731 in 2021, from 4,767,719 in 2020.

The value of internet banking transactions, however, increased significantly by 132.30 percent to GH¢56.24 billion in 2021. Mobile Banking transaction value was GH¢26.11 billion in 2021 compared with GH¢12.94 billion in 2020 representing a growth of 101.78 per cent. (See Table 9)

Table 9: Internet and Mobile Banking

		2019	2020	2021	Growth (%)
Internet Banking	Number of registered Customers	1,106,270	1,019,073	970,435	-4.77
	Volume of transactions	4,651,290	7,055,793	9,077,471	28.65
	Value of transactions (GH¢)	12,014,728,578	24,208,653,517	56,237,587,415	132.30
	Average volume of transactions per day	12,743	19,330	24,870	28.66
Mobile Banking	Number of registered customers	4,245,479	4,767,719	4,062,731	-14.79
	Volume of transactions	18,770,721	34,842,318	55,096,423	58.13
	Value of transactions (GH¢)	6,687,332,884	12,940,760,028	26,112,324,108	101.78
	Average volume of transactions per day	51,427	95,458	150,949	58.13

Source: Bank of Ghana

4.9 Automated Teller Machines and Points of Sales

The number of ATMs deployed by banks as at end-December 2021 was 2,278 representing an increase of 1.83 per cent over the 2020 position.

The number of POS terminals deployed also went up by 20.54 per cent to 12,643 in December 2021, from 10,489 at end-December 2020 (See Table 10).

Table 10: Automated Teller Machines and Points of Sales

	2019	2020	2021	(abs) Change 2021	2021 Growth (%)
Automated Teller Machines (ATMs)	2,123	2,237	2,278	41	1.83
Point of Sales (POS) terminals	8,802	10,489	12,643	2,154	20.54

Source: Bank of Ghana

4.10 Electronic Payment Cards (Debit, Credit and Prepaid Cards)

4.10.1 Debit Cards

The total number of debit cards issued by banks as at December 2021 was 4,936,246, an increase of 2.56 per cent over the position in 2020.

International scheme cards at end-December 2021, was 3,647,285, and represented 73.89 per cent of the total issued debit cards, compared with banks proprietary cards of 1,288,961, which constituted 26.11 per cent of the total issued debit cards. The international scheme cards increased by 2.56 per cent, while banks own proprietary cards decreased by 21.62 per cent in 2021. (See Table 11).

4.10.2 Credit Cards

The number of credit cards issued as at the end of December 2021 increased to 36,237 cards in 2021, from 33,039 cards in December 2020. The increase in the number of credit cards issued was on account of additional banks authorised by the Bank of Ghana to issue credit cards. All the credit cards issued were international scheme cards (See Table 11).

4.10.3 Prepaid Cards

The total number of prepaid cards issued increased to 834,584, at the end of December 2021, from 573,703 in 2020 (See Table 11).

Table 11: Electronic Payments Cards

Type	2019	2020	2021	Growth (%)
Debit Cards:	4,427,848	4,813,063	4,936,246	2.56
Banks own Proprietary Cards	1,586,800	1,644,455	1,288,961	-21.62
International Scheme Cards	2,841,048	3,168,608	3,647,285	15.11
Credit Cards:	29,050	33,039	36,237	9.68
Banks own Proprietary Cards	-	-	-	-
International Scheme Cards	29,050	33,039	36,237	9.68
Prepaid Cards:	372,586	573,703	834,584	45.47
Banks own Proprietary Cards	17	56	451	705.36
International Scheme Cards	372,569	573,647	834,133	45.41

Source: Bank of Ghana

CHAPTER 5: DEVELOPMENTS IN THE GHANAIAN FINTECH ECOSYSTEM

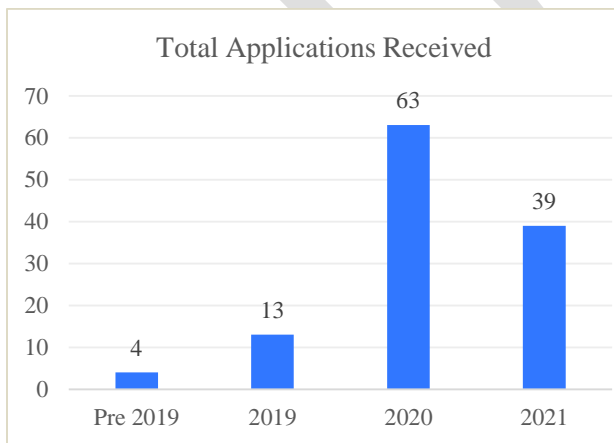
5.1 Introduction

The passage of the Payment Systems and Services Act, 2019 (Act 987) and the subsequent publication of the various licence categories, with the permissible activities and requirements, has led to an increase in applications for authorisation of payment products and services.

5.1.1 Total Number of Applications

In 2021, 39 applications for licensing of products and services were received, as compared to 63 in 2020 and 13 in 2019.

Chart 9: Total Number of Applications Received Since Establishment



Source: Bank of Ghana

5.1.2 Status of Applications

Out of the 39 applications received in 2021, 31 were processed and approved by the Bank. Table 12 depicts the various applications received and their statuses since the Act was passed.

Table 12: Applications received since the Office was established

Status of Application	Number
Stalled	0
Rejected	26
Declined	10
On-Going	39
Viable	0
Recommended Approval	0
Recommended Decline	0
Recommended Rejection	0
Withdrawn	3
Completed	0
Approved	41
Total	119

Figure 1: Licensed Entities



5.1.3 Licensed Financial Technology companies

In total, 41 Financial Technology Companies have been licensed by the Bank. Out of this, 29 are in the Payment Service Provider (PSP) Enhanced licence category, while five are under the Dedicated Electronic Money Issuer (DEMI) category, four in the PSP Medium category, and two in the PSP Standard category. One institution was licensed by the Bank in the Payment and Financial Technology Service Providers (PFTSP) category. (See Table 13)

Table 13: Breakdown of Licensed Institutions

Licensed Category	Number of Approved Entities
Payment Service Provider Enhanced	29
Payment Service Provider Dedicated Electronic Money Issuer	5
Payment Service Provider Medium	4
Payment Service Provider Standard	2
Payment and Financial Technology Service Provider	1
Total	41

Source: Bank of Ghana

5.2 Fintech Industry Performance and visibility tools

5.2.1 Mobile Money Services

Total number of active mobile money customers increased by 2.4 per cent year-on-year. Similarly, active mobile money agents grew by 29 per cent year-on-year. The total volume of mobile money transactions increased to 4.25 billion in 2021, from 2.89 billion in 2020. Similarly, the total value of transactions increased to GH¢ 978.32 billion in 2021, from GH¢ 571.80 billion in 2020.

Person-to-Business (P2B) and Person-to-Person (P2P) transactions grew significantly, and accounted for 22 per cent (GH¢91.82 billion) and 8 per cent (GH¢32.68 billion), respectively, of the growth in value of transactions in 2021. This development was in contrast to the contribution of 9 per cent (GH¢24.14 billion) and 7 per cent (GH¢17.20 billion) in 2020. (See Table 14 and 15)

Table 14: DEMI Statistics (2020 & 2021)

Key Performance Indicator (KPI)	2020	2021	Growth (Abs)	Growth (%)
Registered e-money customers (Cumulative) Thousands	39,080	48,309	9,229	23.6
Active e-money customers (Thousands)	17,535	17,948	414	2.4
Active/Registered Customer Ratio (%)	44.9	37.2	-7.7	-17.2
Registered Agents (Cumulative)	439,824	579,672	139,848	31.8
Active Agents	344,261	442,375	98,114	28.5
Total Value of e-money transactions (Millions)	571,795	978,324	406,529	71.7
Total Volume of e-money transactions (Millions)	2,887	4,246	1,359	47.1
Value per transaction	198	230	32	16.3
Balance on Float	7,039	9,744	2,706	38.4

Source: Bank of Ghana

Table 15: Quarterly DEMI Statistics (2020 & 2021)

Key Performance Indicator (KPI)	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021
Registered e-money cumulative (Thousands)	34,530	33,396	37,405	39,080	41,869	44,321	46,912	48,309
Active e-money customers (Thousands)	14,959	15,622	17,174	17,535	17,811	18,303	19,433	17,948
Active/Registered Customer Ratio (%)	43.3	46.8	45.9	44.9	42.5	41.3	41.4	37.2
Registered Agents (Cumulative)	336,072	355,376	417,799	439,824	476,205	512,048	551,586	579,672
Active Agents	241,999	265,176	332,354	344,261	374,704	402,730	426,706	442,375
Total Transaction Value (Millions)	94,108	120,031	169,435	188,221	217,240	259,489	252,648	248,946
Total Transaction Volume (Millions)	588	622	800	877	932	1,006	1,118	1,190
Value Per Transactions (Calc)	160.05	193.13	211.76	214.51	233.11	257.84	225.94	209.26
Balance on Float (Millions)	3,914	4,856	6,104	7,039	7,482	7,961	8,763	9,744

Source: Bank of Ghana

5.2.2 E-money Transaction Analysis and Trends

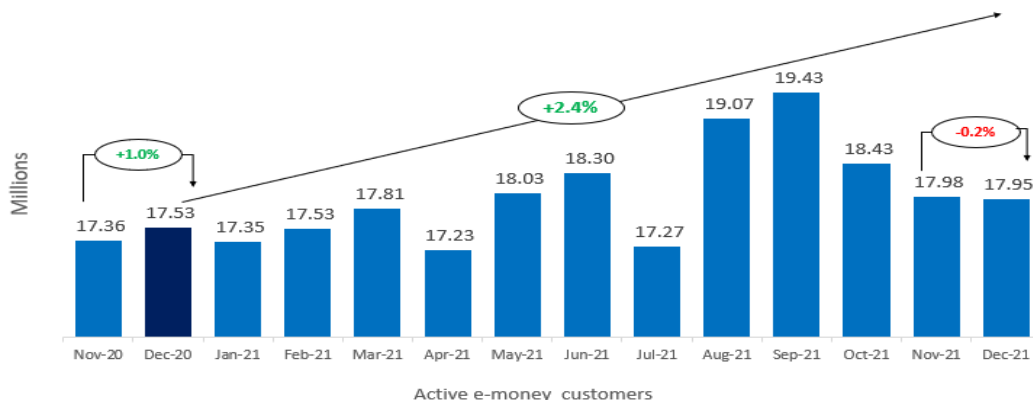
In the review year, electronic money circulation increased on account of higher cash-in of electronic money. The top three e-money wallet-based transaction types, in terms of volume, remained airtime top-up, cash-in and cash-out. The top three in terms of value were cash-in, P2B payments and cash-outs. The average mobile money transaction value increased by 16.3 per cent to GH¢230 in 2021, from GH¢198 in 2020.

Total Cash-in values increased by 64.5 per cent to GH¢164.80 billion in 2021, from

GH¢100.17 billion in 2020. This resulted in a 29.1 per cent increase in average cash-in value to GH¢264 in 2021, from GH¢204 in 2020. Cash-in values constituted 12.1 per cent of total transaction volumes in 2021, compared to 16.3 per cent in 2020.

Total value of cash-out transactions increased by 23.7 per cent to GH¢96.50 billion in 2021, from GH¢78.01 billion in 2020. Similarly, the average cash-out value increased by 18.0 per cent to GH¢179 in 2021, from GH¢152 in 2020.

Chart 10: Active E-money Customer Account

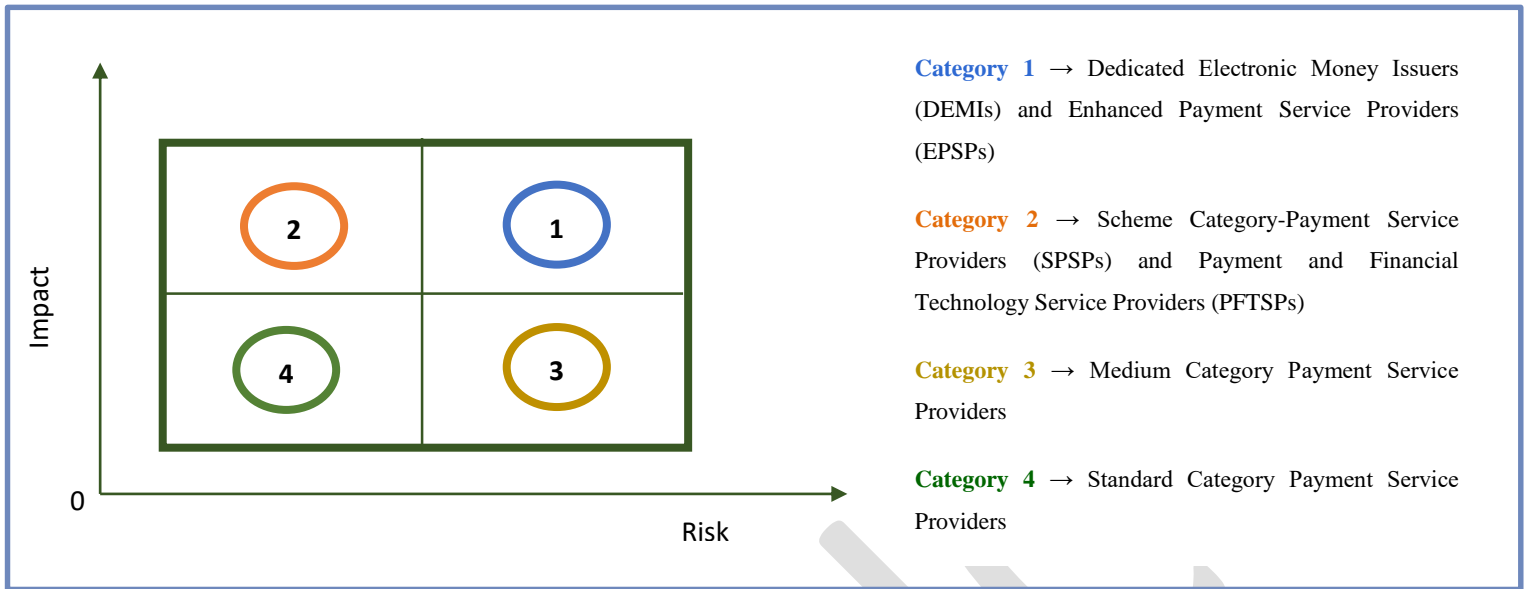


Source: Bank of Ghana

5.3 Oversight & Supervision

The Bank developed a Supervisory Roadmap as part of its effort to operationalise the Supervisory Framework for Payment Service Providers. The roadmap took account of the reliance on FinTechs in the use of digital technology within the

payment ecosystem and the need to use similar tools, such as Supervisory Technology (SupTech), for effective supervision. It identified the risks within the digital financial ecosystem, and ranked their impact on the entire ecosystem in a Risk Matrix as shown below:



High supervisory efforts and resources were devoted to the institutions in Category 1, given their high inherent risk and high impact on the industry, followed by Categories 2, 3 and 4.

5.3.1 Readiness Assessment and Post-Licensing Examinations

The Bank undertook readiness assessment examination on a number of institutions as part of the licensing application review process. Also, licensing examinations were conducted on PSPs that had been granted provisional licences by the Bank. The main objective of these examinations was to assess the adequacy of the physical location, security, controls, information technology systems, the operational set-up, staffing assessment and corporate governance of these entities.

Readiness Assessment was conducted on two entities, Paystack Ghana Limited and Critical Ideas Limited.

In all, 26 PSPs were assessed.

5.3.2 Significant Findings from Readiness Assessment

The following were the key observations from the readiness assessments conducted:

- **Corporate Governance**

Most of the PSPs had no Board Charter in place to guide their activities and the functions of the directors. Also, there was no evidence of Board meetings and oversight on some of these entities. In some instances, the Board (as constituted and shared with the Bank) had not been functional to undertake their fiduciary duties on the institutions at the time of the visit.

- **Business Continuity**

Some inconsistencies were noted in key management personnel at post, and the names actually submitted to the Bank as part of the licensing application. Also, some institutions shared critical roles with their group companies. Most of these roles were held by employees who lived in other countries other than Ghana. Staff of the entities had little or no training pertaining to areas such as AML/CFT, provisions of the Payment Systems and Services Act 987, the Bank's Consumer Recourse Mechanism Guidelines 2017, and cyber security and information security management. Internal control structures of some companies were also inadequate.

5.3.3 Float Management

In line with the liquid asset and funds isolation requirements of section 36 and 37, respectively, of the Payment Systems and Services Act, 2019 (Act 987), the Bank undertook a compliance audit of float management by holding banks for the period between January 2020 and December 2020 to assess compliance in respect of the following:

1. Maintenance of float account balances within the regulatory limits of 25 per cent and 40 per cent of the net worth of holding banks; and
2. Investment of excess balances beyond the above-limits in 91-Day Treasury Bills.

The examination revealed that electronic money float account balances had become important sources of deposit for banks. On average, electronic money float account balances constituted 35 per cent of total net worth of float holding banks.

5.4 Bank of Ghana FinTech Projects

In 2021, the Bank implemented the following FinTech projects:

- Bank of Ghana-EMTECH Regulatory and Innovation Sandbox Pilot; and
- Bank of Ghana-FSDA Regulatory Sandbox Programme.

5.4.1 Bank of Ghana-EMTECH Regulatory and Innovation Sandbox Pilot

The Bank launched a regulatory and innovation sandbox pilot developed in collaboration with EMTECH Service LLC ("EMTECH").

The purpose of the project was to allow Banks, Specialised Deposit-Taking Institutions, PSPs, unregulated entities and persons who met published sandbox

eligibility criteria to test innovative services, products and business models under regulatory supervision in a controlled environment.

5.4.2 Bank of Ghana-FSDA Regulatory Sandbox Programme

In July 2020, the Bank commenced work with Financial Sector Deepening Africa (FSDA) in the development of a Sandbox programme. This programme was intended as a permanent Bank of Ghana tool for innovation and is distinct from the pilot developed in collaboration with EMTECH.

FSDA has contracted the Cambridge Centre for Alternative Finance (CCAF) to assess the Bank's Regulatory and Innovation Sandbox Framework, and is expected to further assist with post-pilot implementation of the sandbox. The CCAF completed the assessment in May 2021, and a report was submitted in the form of a project charter for the consideration of the Bank.

5.5 Central Bank Digital Currency (CBDC) Project Update

The Bank of Ghana, in November 2019 announced, as part of its commitment to financial digitisation, its plan to explore a Central Bank Digital Currency (CBDC) and subsequently commenced preparations towards its implementation.

Management of the Bank granted approval for the formation of a CBDC Steering Committee (project team) and subsequently, a Technical Committee, comprising representatives from various relevant departments of the Bank, including the FinTech and Innovation Office, Payment Systems, Risk, Information Technology, Currency Management, Legal and Research departments to ensure a successful implementation of the CBDC pilot. Gieseke+Devrient (G+D) was also selected as the CBDC partner.

A Terms of Reference (ToR) document, as well as an action plan of the project, was developed.

CHAPTER 6: PAYMENT SYSTEMS RISK AND OVERSIGHT

6.0 Enhancement of Regulatory Framework

The Bank promoted a Payment Systems and Services Act, 2019 (Act 987) to enhance safe and secure digital payments. Laws, regulations and guidelines had also been introduced in various central banks to provide a legal basis for the evolving payment systems environments. Some of the regulatory framework introduced by the Bank to enhance the evolving payment systems environment included the Cheque Printer Accreditation Standard, the Payment Systems Advisory Committee, etc.

6.1 Cheque Printer Accreditation Standard

In 2021, the Bank published the Cheque Printer Accreditation Standard to promote standardisation of cheques and cheque security features. The Standard is a regulatory and supervisory framework for assessment of cheque printers' compliance with the required standards for accreditation in line with section 85 of the Payment Systems and Services Act, 2019 (Act 987).

6.2 Payment Systems Advisory Committee Activities

The Payment Systems Advisory Committee (PSAC) acted in advisory capacity to the

Bank on regulation, oversight, operational and technical standards of payment, clearing and settlement systems in line with section 4 (2) of the Payment Systems and Services Act, 2019 (Act 987).

Pursuant to section 5 (1) of the Payment Systems and Services Act, 2019 (Act 987), the PSAC in 2021, organised two meetings that reviewed reports of the various working groups. The Committee also deliberated on the status of implementation of the Payment Systems Strategy (2019-2024).

6.3 Oversight of Payment Service Providers

In 2021, the Bank conducted, onsite and offsite examination of the operations and activities of the PSPs, to determine their level of compliance with the requirements of the Payment Systems and Services Act, 2019 (Act 987), and other Directives, as well as, Guidelines issued by the Bank for the regulation of PSPs.

6.4 Examination of Licensed Financial Institutions

Five banks were examined in 2021. The objective of the examination was to review the banks' systems and controls to determine the adequacy of their payment system

corporate governance framework, information security, risk management, business continuity planning, operational controls, business strategy, human resource management and internal audit processes over payment service products.

6.5 Examination of Accredited Cheque Printers (Camelot Ghana Limited & Checkpoint Ghana Limited)

Accredited Cheque Printers are the institutions certified under the Payment Systems and Services Act, 2019 (Act 987) to print cheques. Two Accredited Cheque Printers were examined in 2021.

The focus of examination of the Accredited Cheque Printers was to determine the printer's compliance with the requirements of the Payment Systems and Services Act, 2019 (Act 987) and the Cheque Printer Accreditation Standard.

6.6 Examination of Ghana Interbank Payment and Settlement Systems (GhIPSS)

GhIPSS, as a designated payment service provider, and the operator of the National Switch, the Automated Clearing House (ACH), Cheque Codeline Clearing System (CCC), Interoperability system, e-zwich™

biometric system, as well as Gh-Link™ system, is classified as a Systemically Important Payment System (SIPS).

The main focus of the examination of GhIPSS was to determine the adequacy of controls in the management of the payment and clearing infrastructure. The examination also was a supervisory tool to assess GhIPSS' level of compliance with the requirements of the Payment Systems and Services Act, 2019 (Act 987), Guidelines and Directives issued by the Bank, as well as, its own documented operational policies and procedures.

6.7 Assessment of Systemically Important Payment Systems against the Principles of Financial Market Infrastructures

In 2021, pursuant to sections 40 (1) (2) and 50 (1) of the Payment Systems and Services Act, 2019 (Act 987), the Bank conducted an assessment of the operations of GhIPSS and GIS, in line with the Principles for Financial Market Infrastructures (PFMI). The objective of the assessment was to determine the extent of observance and implementation of the relevant PFMI principles.

PUBLIC

CHAPTER 7: FINANCIAL INCLUSION IN GHANA

7.1 Innovations and Developments in Financial Inclusion

Electronic payment channels, such as mobile money, allowed the unbanked and underserved in the country to experience flexible and convenient payment services. To this end, the Bank recorded a spur in the adoption of digital financial services, in spite of the negative impact of the COVID-19 pandemic on the economy.

7.2 Central Bank Digital Currency (CBDC)

One of the major developments in the Ghanaian payment systems landscape that would advance the agenda of financial inclusion and increase the use of electronic payment channels was the launch of the eCedi (see section 5.5).

7.3 Financial Inclusion Policy Interventions

In line with Government's agenda of building a highly digitised economy to accelerate economic development and drive inclusive growth, the Bank implemented a number of policies and strategies to address identified policy gaps. Among these policy interventions and strategies were:

- Review of Mobile Money Interoperability (MMI) Pricing Structure;
- Policy on Crowd Funding;
- Launch of Regulatory Sandbox Pilot;
- Merchant Account Categorisation
- Guidelines for inward remittance services by payment service providers; and
- Guidelines for domestic processing of payment card transactions with payment cards issued in Ghana.

7.3.1 Review of Mobile Money Interoperability Pricing Structure

Recommendations by the Payment Systems Advisory Committee resulted in the following changes to the Mobile Money Interoperability (MMI) pricing structure:

- The total cost of promotion and switching of 0.2 per cent (0.05% + 0.15%) is borne by the receiving institution;
- Settlement within the business day or cycle has been increased to ensure net funds are transferred to the receiving institutions in time to improve liquidity;
- The fee component set aside for promotion has been reduced from 0.1 per cent to 0.05 per cent;

- The total cost to the sender has also been reduced from 1.5 per cent to 1 per cent of the amount sent, with maximum limit of GH¢10. The charge or fee paid by the customer is retained by the sending institution.

7.3.2 Policy on Crowdfunding

The Bank in facilitating the modernisation of indigenous financial services such as “susu” with digital tools issued a Crowdfunding Policy aimed at promoting innovative digital crowdfunding solutions that comply with data protection and customer privacy regulations, good governance and accountability, relevant Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) norms, liquidation procedures and the protection of contributors’ interest. This policy is expected to encourage clubs, associations, market women and farmers to work with entities approved and licensed by the Bank of Ghana in provision of refined “susu” services without the need for much physical contact and also with oversight to guarantee the safety of resources of participants.

7.3.3 Launch of Regulatory Sandbox Pilot

The Bank cooperated with EMTECH Services LLC to pilot a regulatory and innovation sandbox, as part of its aim to build an enabling and inclusive regulatory

framework that promotes financial technology businesses and supports innovation in the field (see Section 5.4). The sandbox provides the regulator with data on usefulness, safety and viability of innovations and also plays a pivotal role in driving financial inclusion through the promotion of innovative digital finance services with preference given to products and services that target financial inclusion of women.

7.3.4 Merchant Account Categorisation

The Bank has established a new account categorisation for merchant payments, which is aimed at ensuring that Small and Medium Enterprises (SMEs) that do not meet the stipulated merchant requirements stated under the Payment Systems and Services Act, 2019 (Act 987), get the opportunity to access a merchant account tailored to their needs. This three-tiered merchant account framework would promote a more inclusive acceptance of digital payments.

7.3.5 Guidelines for Inward Remittance

Services by Payment Service

Providers.

Guidelines were issued in fulfillment of the Bank’s commitment to creating an enabling environment for remittance services without risking the stability of the financial system. The Guidelines were issued to guide the operations of Dedicated

Electronic Money Issuers (DEMI) and Enhanced Payment Service Providers (EPSPs) that intended to partner with Money Transfer Operators to terminate inward remittances.

7.3.6 Guidelines for Domestic Processing of payment card transactions with payment cards issued in Ghana.

The Guidelines were issued with the objective of providing a framework for the licensing and regulation of Payment Card processing as well as providing an enabling environment for its usage in Ghana. These Guidelines cover the domestic processing of Payment Card Transactions with Payment Cards issued in Ghana and the licensing of Card processing entities.

7.4 Financial Inclusion Commitment under MAYA Declaration

Bank of Ghana, as a member of the Alliance for Financial Inclusion (AFI), made new commitments under the Maya Declaration, a global initiative for responsible and sustainable financial inclusion that aims to reduce poverty and ensure financial stability for the benefit of all. The Commitments were as follows:

- Full-scale implementation of a web-based data collection portal, Online Regulatory Analytic Surveillance

System (ORASS), to collect sex disaggregated data from regulated financial institutions by 2022, among others;

- Design and launch a web-based application to receive data on the sustainable banking principles by 2022;
- Develop directives to outline and streamline resolution procedures for captured cards by 2021;
- Enhance consumer protection and redress systems by 2022; and
- Develop USSD feature on Agent Registry to enhance consumer participation by 2022.

7.5 Implementation of Pan African Payment and Settlement Systems

Though developments have been made in the Ghanaian payments landscape, Africa as a continent is also on the brink of revolution with regards to its payment and settlement systems. The Pan African Payment and Settlement Systems (PAPSS) is a Financial Market Infrastructure which will enable instant, cross-border payments in local currencies between African markets. It is estimated that the platform, specifically designed for the continent, could annually reduce payment transaction costs by \$5 billion when fully implemented. African Export-Import bank (Afreximbank) is the main settlement

agent in partnership with African Central Banks.

The implementation of the PAPSS infrastructure is taking place in collaboration with the African Continental Free Trade Area (AfCFTA) Secretariat with the endorsement of the African Union (AU). The PAPSS is currently being piloted in six West African Countries with full implementation by 2022.

These exciting new ventures in the payment systems landscape both in Ghana and the continent at large are paving the way for increased digitisation and financial inclusion in 2022.

7.6 Organisation of Association of African Central Banks Payment Conference

The Bank hosted the 2021 Association of African Central Banks (AACB) Annual Payment Conference on the theme “The role of Integrated Payment Systems for Intra African Trade”. The objective of the conference was to create a platform for central bank representatives to discuss issues related to African payment systems integration to support the African Continental Free Trade Area.

Appendix

Table 17: Comparative Payment System Statistics from 2018 to 2021

category	Indicators	2018	2019	2020	2021	Annual Change 2021 (%)
Basic Statistical data	Total Population Estimate (million)	29.61	30.20	31.07	30.80	-0.87
	Exchange Rate (GHS/USD\$)-End of Year	4.8200	5.5337	5.7631	6.0061	4.22
	Nominal Gross Domestic Product (GDP) GH¢'million	308,587.40	356,544.27	391,940.73	459,130.92	17.14
Institutions offering payment services	Licensed Banks (DMBs)	23	23	23	23	-
	Bank Branches	1,557	1,179	1,177	1,186	0.76
	Rural and Community Banks	144	144	145	145	-
	Savings & Loans and NBF/SDIs	567	542	542	542	-
	Micro Finance Institution (MFI)	566	180	180	180	-
	Mobile Money Operators	3	3	3	3	-
	Active mobile money agents	180,664	226,298	328,329	442,375	34.74
Large Value Payments (RTGS):	Volume	1,221,650	1,376,094	1,442,182	1,505,523	4.39
	Value (GH¢'million)	1,963,465.27	2,106,117.85	2,433,537.47	1,922,865.47	-20.98
	Average Value per Transaction (GH¢)	1,607,224.06	1,530,504.35	1,687,399.70	1,277,207.63	-24.31
	Volume of transactions per day	4,926.01	5,548.77	5,815.25	6,070.66	4.39
Cheque Codeline Clearing (CCC)	Volume	7,255,220	6,831,417	5,903,331	5,975,750	1.23
	Value (GH¢million)	203,465.32	173,623.25	177,625	203,854	14.77
	Average Value per Transaction (GH¢)	28,043.99	25,415.41	30,088.94	34,113.54	13.38
	Average Volume of transactions per day	29,254.92	27,546.04	23,803.75	24,095.77	1.23
ACH Direct Credit	Volume	6,645,126	7,404,059	8,131,989	8,688,154	6.84
	Value (GH¢'million)	30,226.94	36,137.96	49,794.26	60,730.43	21.96
	Average Value per Transaction (GH¢)	4,548.74	4,880.83	6,123.26	6,990.03	14.16
	Average Volume of transactions per day	26,794.86	29,855.08	32,790.28	35,032.88	6.84
ACH Direct Debit	Volume	861,169	722,337	827,901	860,858	3.98
	Value (GH¢'million)	139.15	173.10	936.10	1,339.97	43.14
	Average Value per Transaction (GH¢)	161.58	239.64	1,130.69	1,556.55	37.66

category	Indicators	2018	2019	2020	2021	Annual Change 2021 (%)
	Average Volume of transactions per day	3,472.46	2,912.65	3,338.31	3,471.20	3.98
E-Zwich	Total Number of Cards Issued	2,774,799	3,072,965	3,252,493	3,468,894	6.65
	Volume of Transactions	7,759,354	10,796,560	10,477,601	7,856,107	-25.02
	Value of Transactions (GH¢million)	5,651.14	6,308.37	9,033.25	7,913.80	-12.39
	Average Volume of transactions per day	21,258.50	29,579.62	28,705.76	21,523.58	-25.02
Gh_Link™ (National Switch)	Volume	1,830,182	972,746	806,486	889,266	10.26
	Value (GH¢'million)	543.74	329.23	329.70	427.30	29.60
	Average Value per Transaction (GH¢)	297.10	338.45	408.81	480.51	17.54
	Average Volume of transactions per day	5,014.20	2,665.06	2,209.55	2,436.35	10.26
GhIPSS Instant Pay (GIP)	Volume	143,879	1,905,267	6,804,754	37,672,319	453.62
	Value (GH¢'million)	534.04	3,456.89	9,146.76	31,357.40	242.83
	Average Value per Transaction (GH¢)	3,711.76	1,814.39	1,344.17	832.37	-38.08
Mobile Money	Total number of mobile voice subscription (Cumulative)	40,934,875	40,173,115	40,173,115	41,777,355	3.99
	Registered mobile money accounts (Cumulative)	32,554,346	32,470,793	38,473,734	48,308,975	25.56
	Active mobile money accounts	13,056,978	14,459,352	17,142,677	17,948,480	4.70
	Registered Agents (Cumulative)	396,599	306,346	423,892	579,672	36.75
	Active Agents	180,664	226,298	328,329	442,375	34.77
	Total volume of mobile money transactions	1,454,470,801	2,009,989,300	2,859,624,191	4,246,799,232	48.51
	Total value of mobile money transactions (GH¢'Million)	223,207.23	309,352.25	564,155.90	978,323.79	73.41
	Balance on Float (GH¢'Million)	2,633.93	3,633.83	6,980.03	9,744.38	39.60
	Average Volume of transactions per day	3,984,851	5,506,820	7,834,586	11,635,033	48.51

Source: Bank of Ghana

Table 18: Data on Payment Channels and Instruments

Item	Indicators	Year Ending 2018	Year Ending 2019	Year Ending 2020	Year Ending 2021	Percent Change (2021)
ATMs	Number of ATMs (cumulative)	2,139	2,123	2,237	2,278	1.83
	Volume of transactions	57,763,558	55,709,252	56,603,211	52,146,614	-7.87
	Value of transactions (GH¢)	21,796,487,291	26,392,440,332	32,148,026,396	35,687,433,783	11.01
POS Terminals	Number of Terminals (cumulative)	8,253	8,802	10,489	12,643	20.54
	Volume of transaction	10,218,088	14,251,259	15,159,237	12,511,893	-17.46
	Value of transaction (GH¢)	8,261,737,489	8,104,491,560	11,271,897,541	10,098,188,684	-10.41
Internet Banking	Number of Customers registered	815,904	1,106,270	1,019,073	970,435	-4.77
	Volume of transactions	3,205,878	4,651,290	7,055,793	9,077,471	28.65
	Value of transactions (GH¢)	6,267,223,830	12,014,728,578	24,208,653,517	56,237,587,415	132.30
Mobile Banking	Number of Customers registered	3,891,269	4,245,479	4,767,719	4,062,731	-14.79
	Volume of transactions	14,805,878	18,770,721	34,842,318	55,096,423	58.13
	Value of transactions (GH¢)	5,658,399,344	6,687,332,884	12,940,760,028	26,112,324,108	101.78
Debit Cards	Number of cards issued (cumulative):	4,754,514	4,427,848	4,813,063	4,936,246	2.56
	International Scheme Cards	3,142,223	2,841,048	3,168,608	3,647,285	15.11
	Banks own proprietary cards	1,612,291	1,586,800	1,644,455	1,288,961	-21.62
	Volume of transaction	60,118,182	56,068,367	58,596,924	61,236,956	4.51
	Value of transaction (GH¢)	21,804,830,666	27,758,120,613	37,903,559,526	47,483,659,668	25.27
Credit Cards	Number of cards issued (cumulative):	23,102	29,050	33,039	36,327	9.95
	International Scheme Cards	23,102	29,050	33,039	36,327	9.95
	Banks' own proprietary cards	-	-	-	-	-
	Volume of transaction	324,841	465,906	460,876	524,418	13.79
	Value of transaction (GH¢)	171,702,441	232,609,683	235,013,808	295,575,606	25.77
Prepaid cards	Number of cards issued (cumulative)	216,592	372,586	573,703	834,584	45.47
	Volume of transactions	590,139	489,672	382,678	583,438	52.46
	Value of transactions (GH¢)	326,055,976	358,649,962	311,321,972	554,697,561	78.17

Source: Bank of Ghana