



Payment Systems Oversight Annual Report: 2022

Governor's Foreword



Due to the enabling regulatory environment created by the Bank of Ghana and the Government of Ghana, the Ghanaian payment systems continued to deepen in 2022. The Bank of Ghana implemented policies to engender competition and promote innovation, which led to the introduction of various payment products and services.

Several interventions and strategies were implemented, including the introduction of the Guidelines for the Treatment of Dormant Electronic Money Accounts and Unclaimed Balances (2022), and the use of the Ghana Card as the primary means of identification in the banking industry.

The Bank also continued to promote responsible innovation and competition in the digital financial service ecosystem through the launch of the Regulatory Sandbox, Chatbot, and Central Bank Digital Currency (CBDC) initiatives.

The Bank's Regulatory Sandbox was launched on August 19, 2022, after a successful pilot, during which two licensed entities and one FinTech start-up tested

innovative solutions in the areas of outbound remittance and financial trust kiosk. The pilot provided the opportunity to implement critical updates to the sandbox platform and enhance its functionalities.

In the first quarter of 2022, the Chatbot project being implemented by the Bank in collaboration with Proto and the Africa Digital Financial Inclusion Facility (ADFI) was deployed for piloting on the Bank's website. The Chatbot currently supports interactions in English and Akan, the most widely used local language. Learning from the pilot project would inform further enhancement to the Chatbot and make it more adaptable to the needs of diverse financial consumer groups.

Additionally, the Bank of Ghana's CBDC pilot project was completed in the third quarter of 2022. Offline and online CBDC solutions were successfully tested in rural and urban centres in collaboration with two banks, two payment service providers, and one dedicated electronic money issuer.

In 2022, the payment industry recorded significant growth in all key payment streams. The value of transactions of Ghana Interbank Settlement (GIS) transactions in 2022 increased by 20.24 percent, while the total value of transactions of inter-bank cheques cleared went up by 24.81 percent.

Total volume and value of transactions cleared through the ACH direct credit system increased by 12.94 percent and 26.20 percent, respectively. The total value of ACH direct debit transactions increased by 23.05 percent, while the volume of transactions declined by 2.38 percent.

The gh-link™ platform recorded an increase in both transaction volumes and values. ATM transactions continued to dominate on the gh-link™ platform and constituted 99.25 percent of the transactions.

The number of registered internet banking and mobile banking customers both increased in 2022, by 16.40 percent and 15.38 percent respectively. Similarly, transaction volumes and values for both internet banking and mobile banking recorded an increase of 43.03 percent and 47.34 percent, respectively.

The total volume of mobile money transactions increased to 5.07 billion in 2022, from 4.25 billion in 2021, representing a 19.30 percent growth. Similarly, the total value of transactions went up by 9.60 percent to GH¢

1,072.16 billion in 2022, from GH¢ 978.32 billion in 2021. Active mobile money customers and agents also recorded a growth of 13.55 percent and 14.20 percent respectively. Float balances held by banks increased by 34.10 percent to GH¢ 13.07 billion in 2022, from GH¢ 9.74 billion in 2021.

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 throughout the year 2022.

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

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Executive Summary

The Ghanaian payment and settlement systems continued its deepening trends in 2022, on account of technological innovations which facilitated the adoption of digital payment.

To support increased customer adoption of digital payments, the Bank, as part of its regulatory and supervisory mandate, issued various Guidelines and Directives. The Government also leveraged on the increased adoption of digital payment to pursue its cash-lite agenda through digitalisation of its services.

Key developments in the payment and settlement systems in 2022 included:

- a. Enhanced oversight of Payment Service Providers (PSPs);
- b. Issuance of cheque printer accreditation certificate;
- c. Greater product innovation and development;
- d. Promotion of financial inclusion; and
- e. Increase in non-cash payment streams.

In 2022, the Bank approved twenty-one (21) payment products and services for various financial institutions, compared with a total of twenty-six (26), thirty-two (32) and thirty-seven (37) payment products and services approved in 2021, 2020 and 2019, respectively.

Transactional volumes and values for the various payment streams recorded mixed performances in 2022. The total volume of Ghana Interbank Settlement (GIS) transactions in 2022 declined by 7.57 percent. However, the value of transactions increased by 20.24 percent. Similarly, the volume of inter-bank cheques cleared declined by 3.43 percent, while the total value of transactions increased by 24.81 percent.

Total volume and value of transactions cleared through direct credit system went up by 12.94 percent and 26.20 percent, respectively. The volume of direct debit transactions declined by 2.38 percent but recorded a 23.05 percent increase in transaction value.

The gh-link™ platform recorded an increase in both transaction volumes and values. ATM transactions continued to dominate on the gh-link™ platform and constituted 99.25 percent of the transactions.

The number of registered internet banking and mobile banking customers increased in 2022, by 16.40 percent and 15.38 percent respectively, while transaction volumes and values recorded an increase of 43.03 percent and 47.34 percent, respectively.

The total volume of mobile money transactions went up to 5.07 billion in 2022, from 4.25 billion in 2021, representing a 19.30

percent growth. Additionally, the total value of transactions increased by 9.60 percent, from GH¢ 978.32 billion in 2021, to GH¢ 1,072.16 billion in 2022. The number of active mobile money customers and agents also showed a growth of 13.55 percent and 14.20 percent, respectively.

Float balances, which is the cash representation of the electronic money held by banks, also increased by 34.10 percent to GH¢ 13.07 billion in 2022, from GH¢ 9.74 billion in 2021.

The top three (3) e-money wallet-based transaction types in terms of volume, remained airtime top-up and Global System Mobile Communication (GSM) product purchases, cash-in, and cash-out, which

cumulatively accounted for 60 percent of total volumes. The top three (3) e-money wallet-based transactions in terms of value were cash-out, cash-in, and wallet-to-bank (W2B) transactions.

Total cash-in transaction values, however, declined by 21 percent to GH¢ 130.69 billion in 2022, from GH¢ 165.43 billion in 2021. Cash-in value constituted 12 percent of total transaction value in 2022 compared to 17 percent in 2021. Similarly, the average amount of cash-in decreased to GH¢ 218 in 2022, from GH¢ 263 in 2021, showing a 17 percent decline. Cash-out transactions recorded an increase of 44 percent to GH¢ 139.25 billion, from GH¢ 96.88 billion in 2021.

CHAPTER 1: GLOBAL DEVELOPMENTS IN THE PAYMENT ECOSYSTEM

1.1 Introduction

In 2022, global payments continued to witness migration from cash to electronic and mobile payments. New payment providers emerged, using technology to disrupt traditional networks and business models across retail and wholesale payment chains. Also, during the same period, regulators actively enhanced their regulatory frameworks and supervisory oversight over the payment ecosystem to build resilience and engender consumer trust.

Customers demand for seamless payment services also motivated Payment Service Providers (PSPs) to devise customised payment solutions as convenient means of payment.

1.2 Developments in the Payments and Services Landscape

Some major developments that took place in the global payment systems in 2022 were as follows:

Europe – The European payments market witnessed significant changes in 2022. Payments remained a key enabler of the digital economy, with a greater number of payment solutions made available to consumers and merchants.

In 2022, card payments accounted for almost half of in-store payments for consumers, and more than half of merchants' turnover. European regulators also took various measures to ensure fair competition, security, convenience and innovation.

- **Germany** – Estimates for 2022 showed that the share of cash in German physical stores was over 50 percent. PayPal and Klarna were more popular online payment brands in Germany than the options existing in other European countries.
- In the **United Kingdom (UK)**, digital payments predominantly focused on the use of debit cards and mobile wallets. Use of global payment brands outstripped domestic payment brands. Although the 'Barclaycard' had a relatively high brand awareness of being a digital payment option, a relatively small number of cards remained the main payment stream for users in the UK.
- In 2022, **France's** digital payments were dominated by cards in both POS and online shopping, on account of popularity of Cartes Bancaires ("bank cards" in English). It is a card

scheme co-branded by Visa and Mastercard. More than half of payment cards issued in France were debit cards. Digital wallets became popular in France, most notably in e-commerce. Google Pay was however a more popular contactless (tap to pay) payment method in France than Apple Pay.

- Increased development of e-commerce platforms in **Russia** contributed to an increase in cashless trade. On account of the Russian invasion of Ukraine in 2022, key Western providers of financial services, including Mastercard, Visa, Apple Pay, Samsung Pay, and PayPal, suspended their operations in Russia.

United States of America (USA) – Nearly nine (9) in ten (10) Americans used a digital form of payment and engaged with digital solutions.

In USA, not only did digital-payments penetration increase to 89 percent in 2022, but the share of respondents who reported using two or more forms of digital payments also increased more rapidly from 51 percent in 2021 to 62 percent in 2022. In-app and peer-to-peer (P2P) purchases exhibited the greatest gains.

Similarly, more than two-thirds of Americans were expected to have a digital wallet within two years.

Asia – In 2022, the payments landscape in the Asia-Pacific region continued to experience a wave of innovation, driven by technological advancement, consumers and business’ desire for on-demand banking and payment solutions. Electronic wallets were the most popular payment streams in the region, with credit and debit cards, bank transfers, and cash-on-delivery being the main forms of payment.

- **China**, being the world’s largest e-commerce market, accounted for USD 1.93 trillion of global e-commerce transactions.

Africa – In 2022, e-payments transactions increased in many African countries.

- **Ghana** – Ghana successfully completed the pilot phase of the roll out of its Central Bank Digital Currency (CBDC), the e-Cedi, in 2022.

The Bank of Ghana also provided support and partnered with the Ghana Interbank Payment and Settlement Systems (GhIPSS) and the Ghana Association of Banks (GAB) to

launch a digital wallet, termed “GhanaPay”. The GhanaPay is an application hosted on mobile devices as a digital wallet to facilitate electronic transactions, as well as savings and investments.

- In 2022, **Nigeria** embarked on some regulatory, technological innovations, new business models and investment in the financial sector with the aim of redefining Nigeria’s payments ecosystem. Nigeria promoted an enabling environment for the creation of payment solutions and electronic payments.

It is estimated that 82 percent of Nigerians have a mobile phone and the number of internet subscribers rose to 153 million as of October 2022. This provided the foundation for a booming digital economy.

- **South Africa** – The South African financial services sector has been undergoing some transformation, and in 2022, it witnessed ongoing modernisation and rapid developments in digital technologies, which enhanced service deliveries in sectors, such as banking, telecommunications and retail.

Middle East:

- **Jordan** – The digital payments market experienced a surge in growth in 2022, on account of increased adoption of e-commerce and mobile payments, as well as the rise in contactless payments. Digital wallets and mobile payment applications, such as PayPal, Venmo, and Cash App became popular among consumers, and allowed for the performance of seamless and secure transactions. Additionally, the growth of FinTech startups and integration of blockchain technology into payment systems contributed to the expansion of digital payments.
- **Israel** – Payment methods and payment systems in Israel witnessed regulatory, commercial and technological revolution in 2022. This progressed to a more advanced, significant technological stage, such as the implementation of Europay, Mastercard and Visa (EMV) and Near Field Communication (NFC) protocols, which enabled the deployment of advanced means of card-based payments, particularly digital wallets and contactless payments. Israel’s market migration

to EMV and NFC was driven by the Bank of Israel’s regulatory agenda, which also led to the deployment of nine (9) digital wallets in 2022.

Latin America:

- **Brazil** – Digital payments in Brazil enhanced the country’s increasing use of e-commerce. Brazil experienced a sizable growth in e-commerce use, with telephony and home appliances being the main e-commerce segments. Credit cards became the most popular online payment method in the country, ahead of other options such as digital wallets and cash vouchers – or “boleto”.
- **Colombia** – E-commerce grew and is expected to grow further in the coming years at an average rate of 18.4 percent annually. Credit cards were the most common type of online payment method and represented 51

percent of all purchases. Mastercard was the most popular brand used among the various payment card schemes making up 44 percent of the market while Visa and American Express constituted 33 percent and 1 percent respectively.

1.3 Products

In 2022, the Central Banking Institute estimated that about 90 percent of the world’s central banks pursued Central Bank Digital Currency (CBDC). Some central banks, such as the Federal Reserve Bank of USA and the South African Reserve Bank were among those at the exploratory phase. Card payments (debit, credit, and prepaid cards) continued to serve as the main channels for rendering financial services alongside digital wallets and mobile payment applications such as PayPal, Venmo, and Cash App.

CHAPTER 2: DEVELOPMENTS IN THE GHANAIAN PAYMENT SYSTEMS

2.1 Introduction

Key developments in the payment and settlement systems in Ghana in 2022 included the following:

- Oversight of Payment Service Providers;
- Issuance of cheque printer accreditation certificate;
- Product Innovation and Development;
- Financial Inclusion; and
- Non-Cash Payment Streams.

2.2 Oversight of Payment Service Providers

In 2022, the Bank of Ghana conducted onsite and offsite examinations of the operations and activities of payment service providers, to determine their levels of compliance with the requirements of the Payment Systems and Services Act, 2019 (Act 987) and other Directives, and Guidelines issued by the

Bank. Some of the regulatory concerns identified were:

- No Board sub-committee on payment systems;
- Non-compliance with directives on payment cards captured by ATMs; and
- Inappropriate positioning of cameras at some ATM sites.

2.3 Issuance of Cheque Printer Accreditation Certificate

Camelot Ghana Limited and Checkpoint Ghana Limited were issued with Cheque Printer Accreditation Certificates as accredited cheque printers under the Payment Systems and Services Act, 2019 (Act 987). The accreditation certificates were issued in line with the printers' compliance with the regulatory requirements under section 6 of the Cheque Printer Accreditation Standard.

2.4 Product Innovation and Development

A total of 21 applications for payment products and services submitted by regulated institutions were approved by the Bank in 2022 compared to 26 products and services approved in 2021. The approved products and services included mobile banking services, in-bound remittance services, digital loans, remote account opening services, and agency banking.

2.5 Financial Inclusion

Financial inclusion, which remained a key focus of Ghana's financial and economic development agenda, was largely influenced by significant advancement in digital payments, evolution of financial technology firms and increase in diverse payment products and services.

The Payment Systems Advisory Committee mandated under the Payment Systems and Services Act, 2019 (Act 987) to advise the Bank on regulation and oversight of payment systems in Ghana, met during the year to offer various policy directions to the Bank.

Some of the policy advice the Committee offered focused on the upgrade of the Automated Clearing House (ACH) direct debit platform, the guidelines on the treatment of dormant electronic money accounts and unclaimed balances and increase in transaction limits for mobile money wallets.

2.6 Non-Cash Payment Streams

In the year under review, non-cash payment streams, such as ACH direct credit, gh-link™, GhIPSS Instant Pay (GIP), and mobile money services witnessed increases in transactional values and volumes.

Although non-cash payment streams such as, Ghana Interbank Settlement (GIS), inter-bank cheques cleared, ACH direct debit, and e-zwich witnessed an increase in transaction values, they however declined in transaction volumes.

CHAPTER 3: APPROVED PRODUCTS AND SERVICES

3.1 Introduction

In 2022, the Bank approved twenty-one (21) products and services for various financial institutions compared with a total of twenty-six (26), thirty-two (32) and thirty-seven (37) products and services approved in 2021, 2020 and 2019, respectively. The approved products and services were In-bound Remittance, Mobile Banking Services, Remote Account Opening, Digital Loans and Agency Banking.

The breakdown of the products and services approved by the Bank from 2016 to 2023 is shown in Table 1.

3.2 In-bound Remittance

The difficult economic situation stemming from the occurrence of the Covid-19 pandemic in the preceding years and the economic downturn culminated in a greater number of people relying on inward remittances. In 2022, several regulated financial institutions partnered with various Money Transfer Operators (MTOs) to offer inward remittance services in Ghana. Seven (7) approvals were granted by the Bank of Ghana to banks to engage in such partnerships to offer services such as termination of remittances into bank

accounts, mobile money wallets and pre-paid cards as well as over-the-counter cash pick-up services.

3.3 Mobile Banking Services

The Bank approved mobile banking services for four (4) financial institutions in 2022, as compared to six (6) in 2021. Out of the four (4), one (1) was a completely new mobile banking application and the other three (3) were upgrades or enhancements of the existing mobile banking services.

3.4 Remote Account Opening

Technology has enabled the development of remote account opening services, which allows individuals to open bank accounts remotely from their smartphones using their bank's mobile application or USSD banking feature. In 2022, the Bank granted approval to three (3) banks to offer remote account opening services as compared to one (1) in 2021.

3.5 Digital Loans

In 2022, three (3) banks compared with four (4) financial institutions in 2021 received authorisation to offer digital micro loans that can be accessed using a USSD code or a bank's mobile application channel.

3.6 Agency Banking

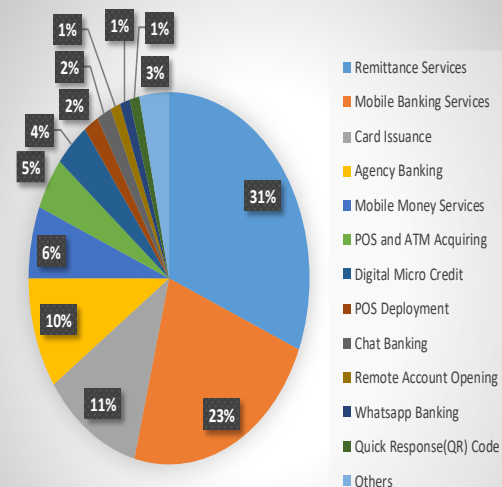
During the year under review, out of the four (4) banks granted approval for agency banking, one bank was granted approval to engage and establish additional ten thousand (10,000) agency outlets. Services such as

balance enquiry, funds transfer, cash deposit and account opening were approved of under these agency banking services.

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Table 1: Total Number of Authorized Products and Services from 2016-2022

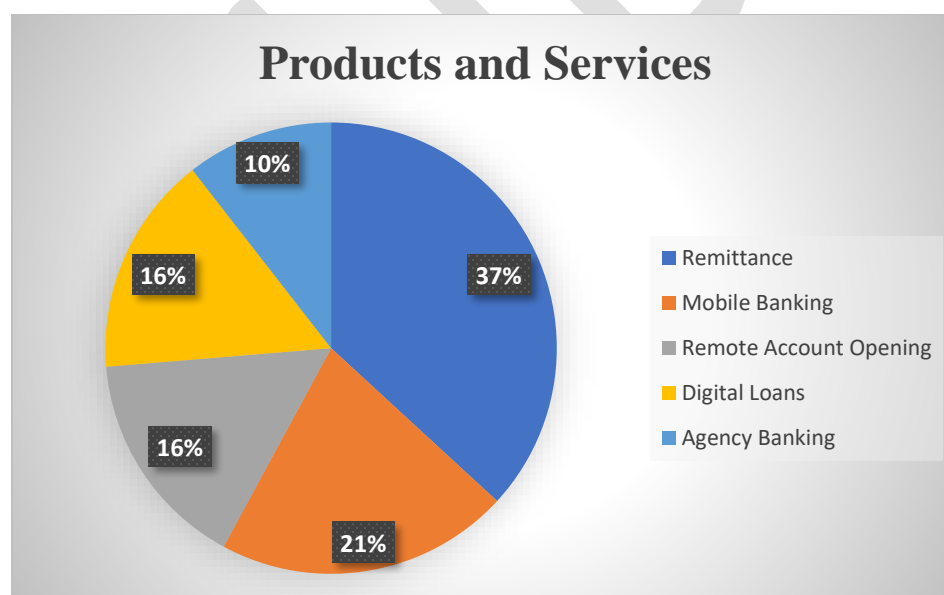
Products/Year	2016	2017	2018	2019	2020	2021	2022	Grand Total
Remittance Services	1	6	13	19	12	4	7	62
Mobile Banking Services	8	11	2	6	7	6	4	44
Card Issuance	4	3	3	4	3	3	0	20
Agency Banking	2	5	4	2	2	2	4	21
Mobile Money Services	0	5	4	2	0	0	0	11
POS and ATM Acquiring	1	3	0	2	0	2	0	8
Digital Micro Credit	0	0	0	1	2	4	3	10
POS Deployment	0	3	0	0	0	0	0	3
Chat Banking	0	0	0	0	2	1	0	3
Cheques Clearing Services	0	0	0	1	0	0	0	1
Aggregation Service	0	1	0	0	0	0	0	1
ATM Deployment	0	1	0	0	0	0	0	1
Digital Micro Pension	0	0	1	0	0	0	0	1
Remote Account Opening	0	0	0	0	1	1	3	5
Whatsapp Banking	0	0	0	0	1	1	0	2
Virtual Card	0	0	0	0	1	0	0	1
Quick Response(QR) Code	0	0	0	0	1	1	0	2
Others	0	0	0	0	0	1	0	1
Grand Total	16	38	27	37	32	26	21	197



**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 (2022)



Source: Bank of Ghana

CHAPTER 4: PAYMENT SYSTEMS TRANSACTIONS

4.1 Introduction

The Bank, as part of its mandate, exercises oversight responsibility over payment system infrastructures, comprising the Ghana Interbank Settlement (GIS), which is Ghana's Real Time Gross Settlement (RTGS) system, and retail payment system infrastructures such as the Ghana Automated Clearing House (GACH) system, Cheque Codeline Clearing (CCC) 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

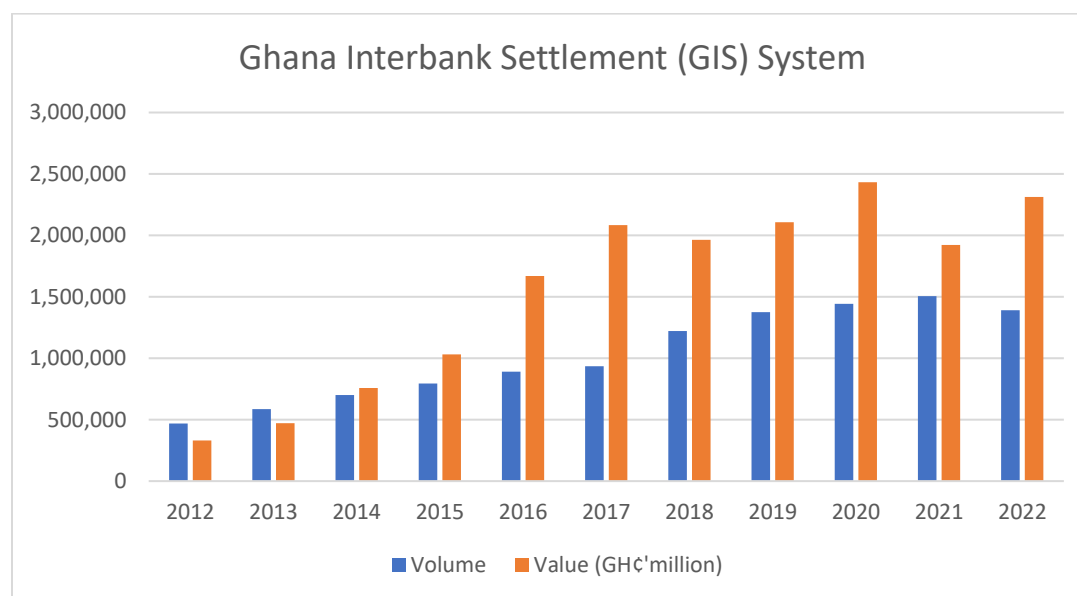
The total volume of Ghana Interbank Settlement (GIS) transactions at end-December 2022 declined by 7.57 percent, from 1,505,523 in 2021 to 1,391,590 in 2022. The total value of transactions however increased by 20.24 per cent to GH¢2,312,063.55 million. In 2022, average value per transaction was GH¢1,661,454.56 compared with GH¢1,277,207.63 in 2021 showing an increase of 30.08 percent. (See Table 2 and Chart 2).

Table 2: Ghana Interbank Settlement Transactions

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Volume	1,221,650	1,376,094	1,442,182	1,505,523	1,391,590	-113,933	-7.57
Value (GH¢'million)	1,963,465.27	2,106,117.85	2,433,537.47	1,922,865.47	2,312,063.55	389,198.08	20.24
Average value per transaction GH¢	1,607,224.06	1,530,504.35	1,687,399.70	1,277,207.63	1,661,454.56	384,246.93	30.08

Source: Bank of Ghana

Chart 2: Ghana Interbank Settlement Transaction



Source: Bank of Ghana

4.3 Cheque Codeline Clearing

In 2022, total volume of inter-bank cheques cleared decreased by 3.43 percent to 5,770,593. However, total value of

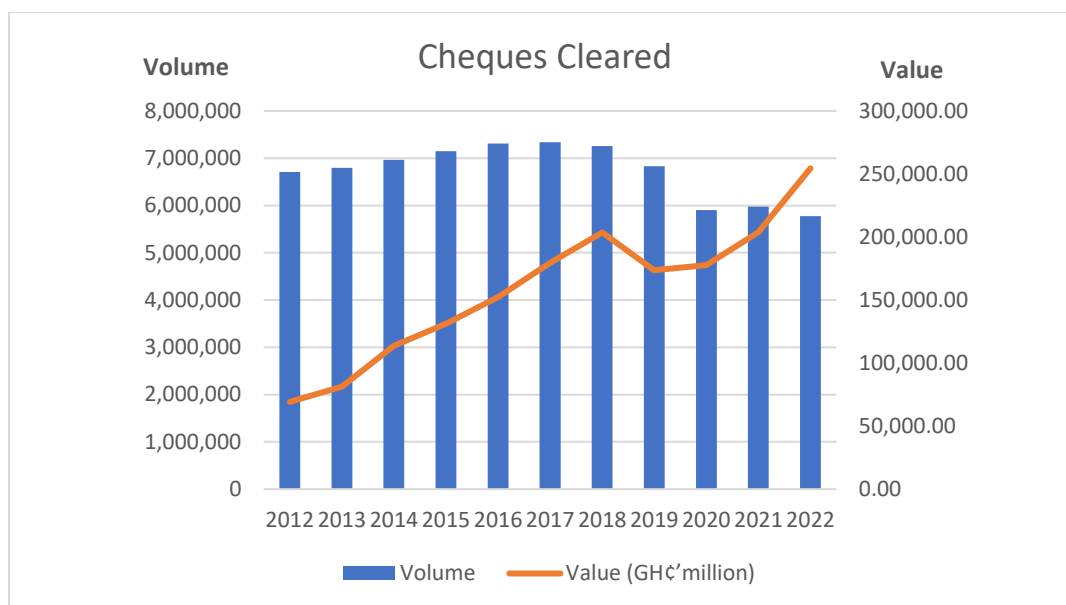
transactions increased by 24.81 percent from GH¢203,853.81 million to GH¢254,438.98 million in 2022. (See Table 3 and Chart 3).

Table 3: Cheque Codeline Clearing

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Volume	7,255,220	6,831,417	5,903,331	5,975,750	5,770,593	-205,157	-3.43
Value (GH¢'million)	203,465.32	173,623.25	177,625.00	203,853.81	254,438.98	50,585.17	24.81
Average value per transaction GH¢	28,043.99	25,415.41	30,088.94	34,113.51	44,092.34	9,978.83	29.25

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

In the year under review, total volume of transactions cleared through the direct credit system increased by 12.94 percent to 9,812,298, from 8,688,154. Total value of direct credit transfers also increased to GH¢76,644.26 million, from GH¢60,730.43 million in 2021, representing a 26.20 percent increase (See Table 4 and Chart 4).

Payment of SSNIT pensions by Bank of Ghana on behalf of the Government continued to be the major contributor to the

growth of direct credit transactions. Express ACH direct credit recorded a growth of 39.85 percent and 29.76 percent in both volume and value of transfers over the 2021 positions of 1,403,720 and GH¢19,580.40 million respectively.

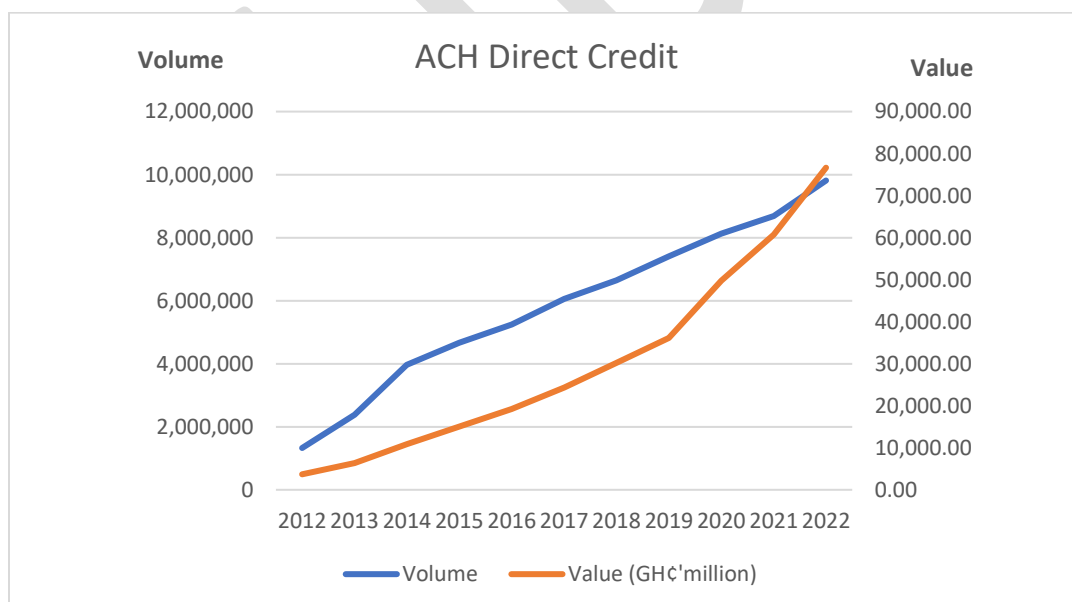
During the year 2022, Near Real Time ACH direct credit volumes and values increased from 559,509 in 2021 to 1,026,159 (83.40 percent) and from GH¢9,627.66 million in 2021 to GH¢26,726.20 million (177.60 percent) in 2022, respectively.

Table 4: GACH Direct Credit Transactions

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Volume	6,645,126	7,404,059	8,131,989	8,688,154	9,812,298	1,124,144	12.94
Value (GH¢'million)	30,226.94	36,137.96	49,794.26	60,730.43	76,644.26	15,913.837	26.20
Average value per transaction (GH¢)	4,548.74	4,880.83	6,123.26	6,990.03	7,811.04	821.01	11.75
Express ACH Direct Credit Volume	697,642	1,153,551	1,229,629	1,403,720	1,963,121	559,401	39.85
Express ACH Direct Credit value (GH¢'million)	7,553.15	11,534.13	15,547.81	19,580.40	25,408.25	5,827.85	29.76
ACH Direct Credit Near Real-Time (NRT) Volumes	-	-	109,259	559,509	1,026,159	466,650	83.40
ACH Direct Credit Near Real-Time (NRT) Values (GH¢'million)	-	-	1,345.31	9,627.66	26,726.16	17,098.50	177.60

Source: Bank of Ghana

Chart 4: GACH Direct Credit Transactions



Source: Bank of Ghana

4.4.2 Direct Debit

In 2022, total volume of direct debit transactions declined by 20,489 (2.38 percent) from 860,858 in 2021. The total value of transactions, however, increased by

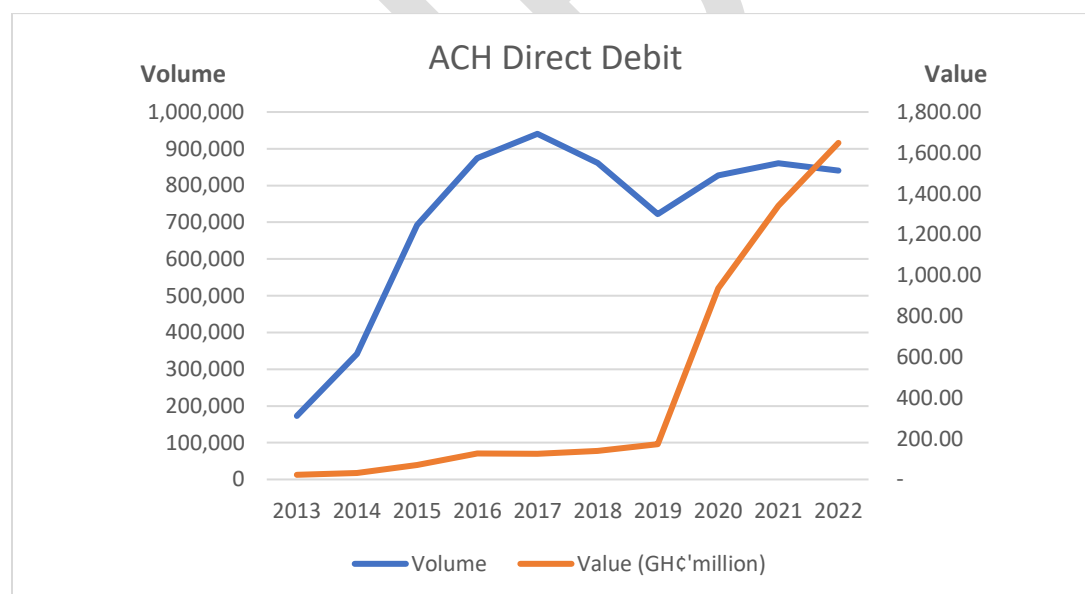
GH¢308.87 million to GH¢1,648.84 million (23.05 percent). Average value per transaction also increased from GH¢1,556.55 in 2021 to GH¢1,962.04 in 2022. (See Table 5 and Chart 5).

Table 5: GACH Direct Debit Transactions

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Volume	861,169	722,337	827,901	860,858	840,369	(20,489)	(2.38)
Value (GH¢'million)	139.15	173.10	936.10	1,339.97	1,648.84	308.87	23.05
Average value per transaction GH¢	161.58	239.64	1,130.69	1,556.55	1,962.04	405.39	26.04

Source: Bank of Ghana

Chart 5: GACH Direct Debit Transactions



Source: Bank of Ghana

4.5 E-zwich Transactions

During the period under review, the number of e-zwich card holders increased by 4.52 percent to 3,625,543 from 3,468,894 in

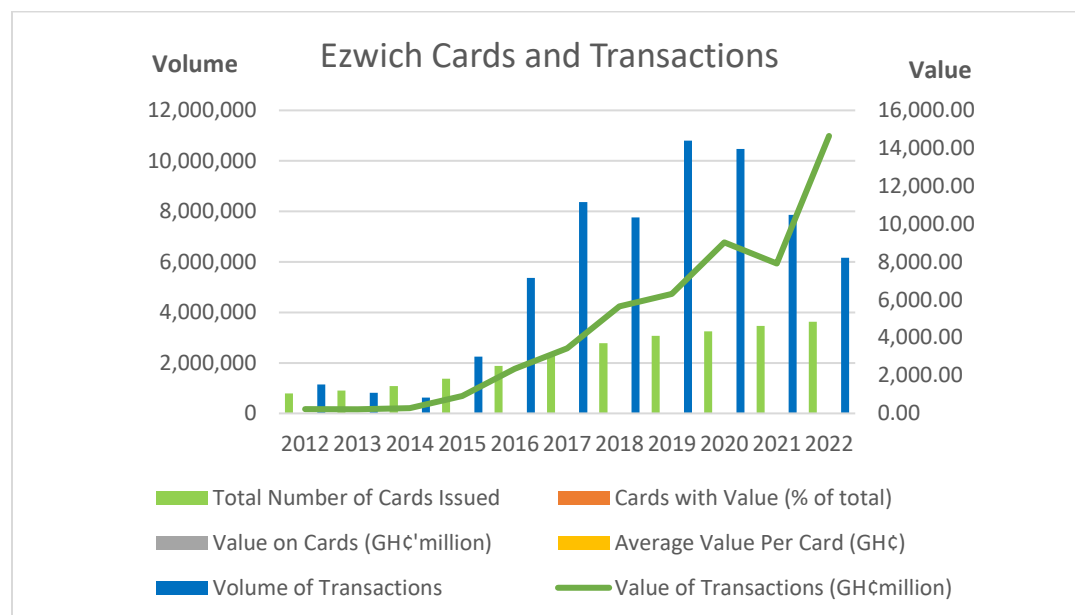
2021. The total volume of e-zwich transactions however declined by 21.60 percent to 6,159,465, while total value of transactions also increased by 85.10 percent to GH¢14,648.54 million. (See Table 6 and Chart 6).

Table 6: E-zwich Transactions

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Total Number of Cards Issued	2,774,799	3,072,965	3,252,493	3,468,894	3,625,543	156,649	4.52
Cards with Value (% of total)	53.24	71.67	67.14	67.42	64.51	(2.91)	(4.32)
Value on Cards (GH¢'million)	123.19	202.91	180.80	192.36	198.20	5.84	3.04
Average Value Per Card (GH¢)	83.38	92.13	82.79	82.75	80.90	(1.85)	(2.24)
Volume of Transactions	7,759,354	10,796,560	10,477,601	7,856,107	6,159,465	(1,696,642)	(21.60)
Value of Transactions (GH¢'million)	5,651.14	6,308.37	9,033.25	7,913.80	14,648.54	6,734.74	85.10

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 volume of 1,018,456 transactions with a value of GH¢551.30 million compared with a total volume of 889,266 with a value of

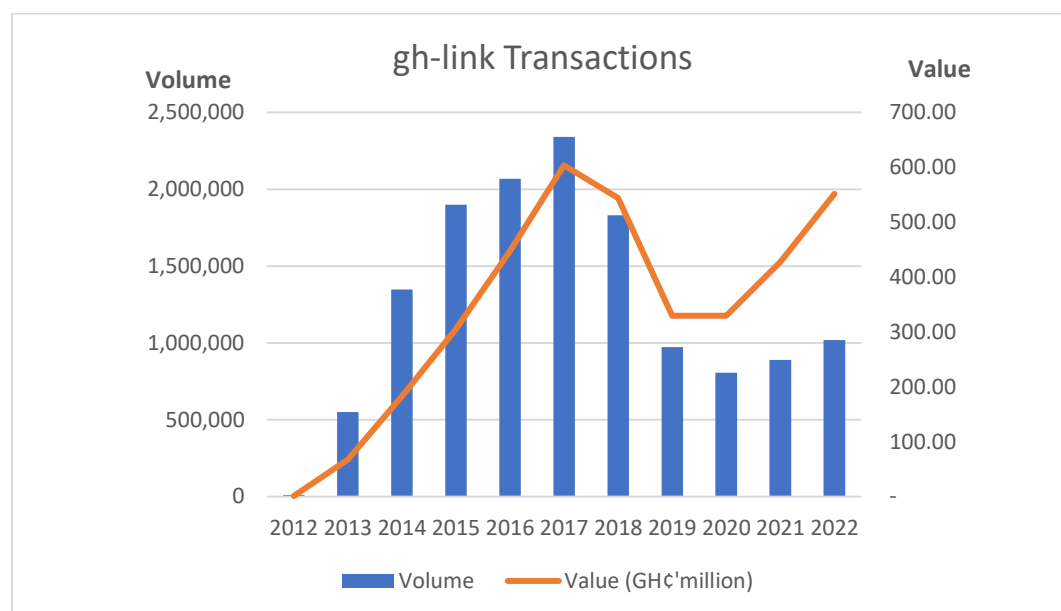
GH¢427.30 million in 2021. ATM transactions continued to dominate on the gh-link™ platform and constituted 99.25 percent of the transactions. (See Table 7 and Chart 7).

Table 7: Gh-Link™ Transaction

Indicators	2018	2019	2020	2021	2022	2022 change	2022 Growth (%)
Volume	1,830,182	972,746	806,486	889,266	1,018,456	129,190	14.53
Value (GH¢'million)	543.74	329.23	329.70	427.30	551.30	124.00	29.02
Average value per transaction GH¢	297.10	338.45	408.81	480.51	541.31	60.80	12.65

Source: Bank of Ghana

Chart 7: Gh-Link™ Transactions



Source: Bank of Ghana

4.7 GhIPSS Instant Pay

In 2022, GhIPSS Instant Pay (GIP) recorded a total volume of 76,483,008 transactions with a value of GH¢58,698.07 million compared with 37,672,319 and

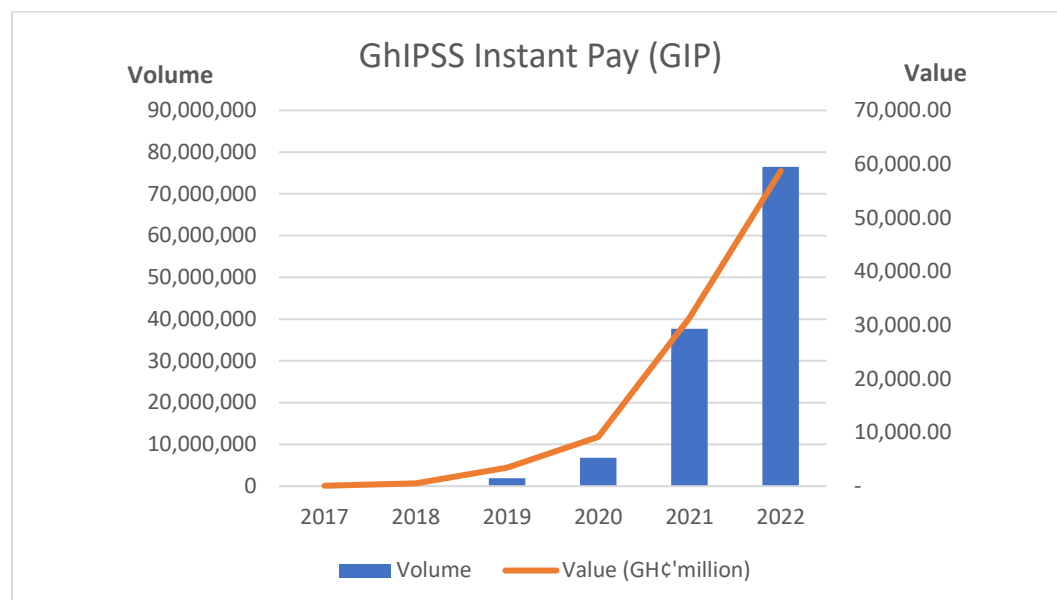
GH¢31,357.40 million respectively in 2021. This showed an increase of 103.02 percent in volumes of transactions and 87.19 percent in values of transactions in 2022. (See Table 8 and Chart 8).

Table 8: GIP Transactions

Indicators	2020	2021	2022	2022 change	2022 Growth (%)
Volume	6,804,754	37,672,319	76,483,008	38,810,689	103.02
Value (GH¢'million)	9,146.76	31,357.40	58,698.07	27,340.67	87.19

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 increased by 16.40 percent from 970,435 in 2021 to 1,129,387 in 2022. Similarly, the number of registered mobile banking customers increased by 15.38 percent from 5,845,960 in 2021 to 6,745,337 in 2022.

The value of internet banking transactions showed an increase of 43.03 percent to GH¢80.43 billion in 2022 compared with the 2021 position of GH¢56.23 billion. Mobile banking transaction value was GH¢38.47 billion in 2022 compared with GH¢26.11 billion in 2021 and represented a growth of 47.34 percent. (See Table 9).

Table 9: Internet and Mobile Banking

		2019	2020	2021	2022	Growth (%)
Internet Banking	Number of registered Customers	1,106,270	1,019,073	970,435	1,129,387	16.40
	Volume of transactions	4,651,290	7,055,793	9,077,471	10,334,353	13.85
	Value of transactions (GH¢)	12,014,728,578	24,208,653,517	56,237,587,415	80,438,220,592	43.03
	Average volume of transactions per day	12,743	19,330	24,869	28,313	13.85
Mobile Banking	Number of registered customers	4,245,479	4,767,719	5,845,960	6,745,337	15.38
	Volume of transactions	18,770,721	34,842,318	55,096,423	65,322,898	18.56
	Value of transactions (GH¢)	6,687,332,884	12,940,760,028	26,112,324,108	38,474,504,827	47.34
	Average volume of transactions per day	51,427	95,458	150,949	178,966	18.56

Source: Bank of Ghana

4.9 Automated Teller Machines (ATMs) and Point of Sale (POS) Devices

The cumulative number of ATMs deployed by banks declined by 0.97 percent from

2,278 in 2021 to 2,256 at end-December 2022. The number of POS devices went up by 6.13 percent from 12,643 at end-December 2021 to 13,418 in December 2022, (See Table 10).

Table 10: Automated Teller Machines and Point of Sale Devices

	2019	2020	2021	2022	2022 Change	2022 Growth (%)
Automated Teller Machines (ATMs)	2,123	2,237	2,278	2,256	(22)	(0.97)
Point of Sales (POS) terminals	8,802	10,489	12,643	13,418	775	6.13

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 end-December 2022 was 5,147,066 showing an increase of 4.27 percent over 4,936,246 cards in December 2021.

International scheme cards of 3,896,513 constituted 75.70 percent of the total issued debit cards compared with banks proprietary cards of 1,250,553 which constituted 24.30 percent of the total issued debit cards. The international scheme cards issued increased by 6.83 percent while banks proprietary

cards decreased by 2.98 percent in 2022. (See Table 11).

4.10.2 Credit Cards

The number of credit cards issued as at end-December 2022 increased by 34 percent from 36,237 cards in 2021 to 48,557 cards in 2022. 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 by 49.20 percent from 779,512 in 2021 to 1,163,339 at end-December 2022 (See Table 11).

Table 11: Electronic Payment Cards

Type	2019	2020	2021	2022	Growth (%)
Debit Cards:	4,427,848	4,813,063	4,936,246	5,147,066	4.27
Banks own Proprietary Cards	1,586,800	1,644,455	1,288,961	1,250,553	(2.98)
International Scheme Cards	2,841,048	3,168,608	3,647,285	3,896,513	6.83
Credit Cards:	29,050	33,039	36,237	48,557	34.00
Banks own Proprietary Cards	-	-	-	-	
International Scheme Cards	29,050	33,039	36,237	48,557	34.00
Prepaid Cards:	372,586	573,703	779,512	1,163,369	49.20
Banks own Proprietary Cards	17	56	451	30	(93.35)
International Scheme Cards	372,569	573,647	779,512	1,163,339	49.34

Source: Bank of Ghana

CHAPTER 5: DEVELOPMENTS IN THE GHANAIAN FINTECH ECOSYSTEM

5.1 Introduction

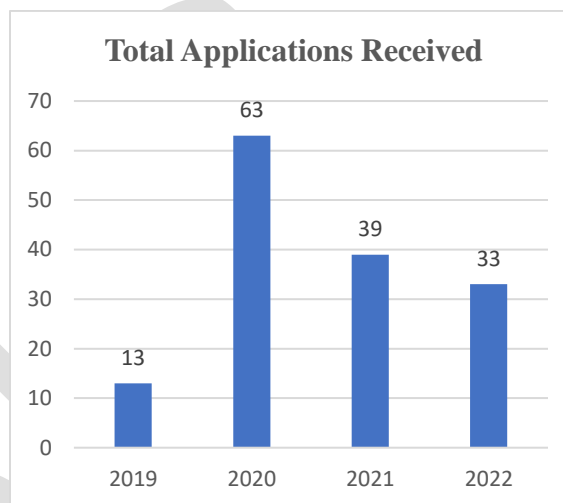
The FinTech space continued to evolve in the year 2022 as the Bank issued various directives and guidelines to cope with the growth and dynamics of fintech solutions provided by licensed institutions operating in the industry.

These directives and guidelines along with the Payment Systems and Services Act, 2019 (Act 987) and the subsequent publication of the various licence categories continued to boost confidence in the fintech industry and enhanced the regulatory regime of Ghana's payment system.

5.1.1 Total Applications Received

The year 2022 marked the second year since the introduction of the Payment Service Providers (PSP) license and thirty-three (33) applications for various PSP licences were received compared to 39 and 63 in 2021 and 2020 respectively. Hence, application for various PSP licenses declined by 15.40 percent in 2022. The decline was anticipated and may further continue in the ensuing years to an optimal number of entities expected to operate within the Ghanaian fintech industry. (See Chart 9).

Chart 9: Total Applications Received (2019 – 2022)



Source: Bank of Ghana

Table 12 shows that approximately 50 percent of the applications were in the Enhanced Payment Service Provider license category.

Table 12: Licensing Categories of Applications Received

Application Type	Number Received
DEMI	2
PSP Enhanced	16
PSP Medium	4
PSP Standard	6
PFTSP	5
Total	33

5.1.2 Status of Applications

Out of the thirty-three (33) applications received in 2022, five (5) were processed and approved by the Bank whilst seven (7) were declined for reasons in line with the Payment Systems and Services Act, 2019 (Act 987). The remaining twenty-one (21) applications were at various stages of the application review process.

Figure 1: Licensed Entities



5.1.3 Licensed Financial Technology (Fintech) Companies

The total number of licensed Financial Technology Companies as at end-December 2022 was forty-six (46). This was made up of four (4) Dedicated Electronic Money Issuers (DEMIs), thirty-four (34) Payment Service Providers (PSP) in the Enhanced licence category, four (4) in the PSP Medium category, and two (2) each in the PSP Standard and Payment and Financial Technology Service Providers (PFTSP) categories. (See Table 13)

Yup Ghana Limited which was licensed by the Bank as a DEMI seized operations in 2022.

Table 13: Breakdown of Licensed Institutions

Application Type	Number Received
DEMI	4
PSP Enhanced	34
PSP Medium	4
PSP Standard	2
PFTSP	2
Total	46

5.2 Fintech Industry Performance:

5.2.1 Mobile Money Services

The total volume of mobile money transactions increased from 4.25 billion in 2021 to 5.07 billion in 2022, representing a 19.30 percent growth. Similarly, the total value of transactions grew by 9.60 percent. It increased from GH¢ 978,324 million in 2021 to GH¢ 1,072,157 million in 2022. Active mobile money customers increased to 20,380,716 from 17,948,480 in 2021 while the number of active mobile money agents increased to 505,122 in 2022, from 442,375 in 2021.

Float balances held by banks also increased by 34.1 percent from GH¢ 9,744 million in 2021 to GH¢ 13,071 million in 2022. (See Table 14).

Table 14: DEMI Statistics (2021 - 2022)

Key Performance Indicator (KPI)	2021	2022	Growth (Abs)	Growth (%)
Registered e-money customers (Cumulative) (Thousands)	48,308.94	55,288.50	6,979.56	14.45
Active e-money customers (Thousands)	17,948.48	20,380.72	2,432.24	13.55
Registered Agents (Cumulative) (Thousands)	579.67	699.59	119.92	20.69
Active Agents (Thousands)	442.38	505.12	62.74	14.18
Total value of e-money transactions (GHS' Millions)	978,324	1,072,157	93,833	9.6
Total volume of e-money transactions (Millions)	4,246	5,068	821	19.3
Balance on Float (GHS' Millions)	9,744	13,071	3,327	34.1

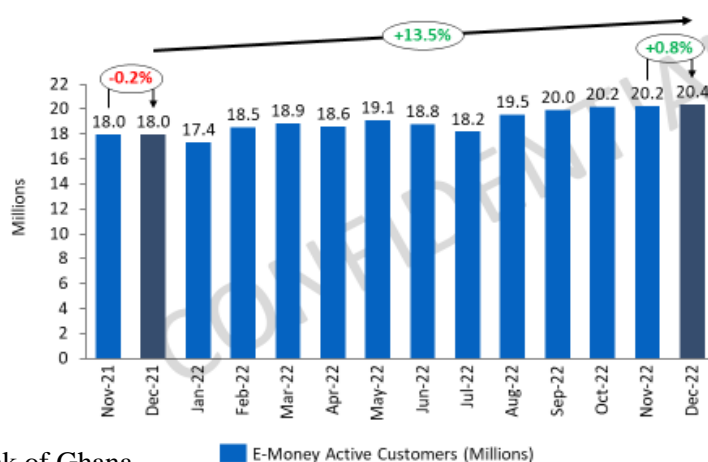
Source: Bank of Ghana

Table 15: Quarterly DEMI Statistics (2021 - 2022)

Key Performance Indicator (KPI)	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Registered e-money customers (Cumulative) (Thousands)	41,869	44,321	46,912	48,309	49,926	51,049	53,280	55,289
Active e-money customers (Thousands)	17,811	18,303	19,433	17,948	18,881	18,839	19,946	20,381
Percentage of e-money customers active (%)	43	41	41	37	38	37	37	37
Registered Agents (Cumulative) (Thousands)	476	512	552	580	602	625	661	700
Active Agents (Thousands)	375	403	427	442	458	462	477	505
Percentage of agents active (%)	79	79	77	76	76	74	72	72
Total value of e-money transactions (GHS' Millions)	217,240	259,489	252,648	248,946	243,453	236,465	253,045	339,193
Total volume of e-money transactions (Millions)	932	1,006	1,118	1,190	1,151	1,163	1,294	1,461
Value per transaction	233.11	257.84	225.94	209.26	211.59	203.37	195.61	232.24
Balance on Float (GHS' Millions)	7,482	7,961	8,763	9,744	9,480	9,315	9,799	13,071

Source: Bank of Ghana

Chart 10: Active E-money Customer Account



Source: Bank of Ghana

5.2.2 E-money Transaction Analysis and Trends

The 2022 quarterly mobile money transactions in both volumes and values exceeded that of 2021, except in the second quarter of 2022 where transaction values declined by 8.90 percent as compared to the second quarter of 2021 which coincided with the period of the implementation of the Electronic Transfer Levy Act, 2022 (Act 1075). (see Table 15).

The top three (3) e-money wallet-based transaction types in terms of volume, remained airtime top-up and GSM product purchases, cash-in, and cash-out, which cumulatively accounted for 60 percent of total volumes.

The top three (3) wallet transactions in terms of value were cash-out, cash-in, and wallet-to-bank (W2B) transactions, which cumulatively accounted for 34 percent of total value of transactions for 2022.

Total cash-in transaction values however decreased by 21 percent from GH¢ 165.43 billion in 2021 to GH¢ 130.69 billion in 2022. Cash-in values contributed 12 percent of total transaction value in 2022 compared to 17 percent over the same period last year. Similarly, the average amount of cash-in decreased from GH¢ 263 in 2021 to GH¢ 218 in 2022, which represented a 17 percent decline.

Cash-out transactions recorded an increase in the review period. It increased by 44

percent from GH¢ 96.88 billion in 2021 to GH¢ 139.25 billion in 2022. Its contribution to total transaction values increased from 10 percent in 2021 to 13 percent in 2022. This reflected in an increase in average cash-out value by 29 percent from GH¢ 179 in 2021 to GH¢ 230 in 2022.

Persons-to-business (P2B) transaction values decreased by 63.20 percent from GH¢ 124.39 billion in 2021 to GH¢ 45.76 billion in 2022. On average, P2B transaction value decreased by 62 percent from GH¢ 587 in 2021 to GH¢ 221 in 2022. Similarly, its contribution to total value of transactions decreased from 13 percent in 2021 to 4 percent in 2022.

5.2.3 Float Account Trends

The total float account balances increased by approximately 39 percent from GH¢ 9.6 billion in January 2022 to GH¢ 13.3 billion in December 2022. This represents an average month on month growth rate of approximately 3 percent. The fourth quarter

of 2022 recorded the most significant average growth rate in float of 10 percent and resulted in float balances of GH¢ 10.5 billion in October, GH¢ 11 billion in November and GH¢ 13.3 billion in December.

5.2.4 Mobile Money Interoperability (MMI)

Mobile Money Interoperability (MMI) transactions recorded 14 percent and 28 percent growth in volume and value respectively in 2022 compared with 2021.

Wallet-to-Wallet (W2W) transactions were the dominant transaction type in 2022, accounting for 82 percent of total transaction value for the year with Wallet-to-Account transactions accounting for the remaining 18 percent.

The average MMI transaction value increased by 12 percent in 2022 from GH¢ 170 in 2021 to GH¢ 191 in 2022. (See Table 16).

Table 16: Mobile Money Interoperability (MMI)

Item	2021	2022	YoY Growth (%)
Transaction Value (GHS)			
Wallet to Wallet	17,502,777,549	21,711,114,139	24
Wallet to Account	3,163,691,474	4,695,379,193	48
Wallet to e-zwich	6,370,493	10,746,510	69
Total Transaction Value	20,672,839,516	26,417,239,842	28
Transaction Volume			
Wallet to Wallet	119,270,301	135,563,994	14
Wallet to Account	2,288,500	2,953,007	29
Wallet to e-zwich	29,824	55,809	87
Total Transaction Volume	121,588,625	138,572,810	14

5.3 Oversight and Supervision

The Bank of Ghana continued to promote the integrity and resilience of the fintech ecosystem through offsite surveillance and onsite examination of Payment Service Providers (PSPs). In line with the risk-based supervision framework, Dedicated Electronic Money Issuers (DEMI)s which are of systemic importance within the fintech space were subjected to enhanced surveillance of at least one onsite examination in addition to offsite surveillance. Furthermore, thematic reviews were carried out with special focus on corporate governance, dormant accounts, and business continuity practices. Based on the outcome of the examinations on the thematic review of the dormant accounts and unclaimed balances, the Bank issued the

guidelines on dormant accounts to provide further clarity to section 33 of the Payment Systems and Services Act, 2019 (Act 987). Onsite examinations were carried out at other lower categories of PSPs on a risk-based rotational program and complemented offsite surveillance.

In general, the Ghanaian FinTech ecosystem demonstrated resilience and robustness during the year on account of satisfactory compliance with relevant laws, policies, directives and standards.

5.3.1 On-site Examination

On-site examinations were conducted on DEMIs and PSPs to assess compliance with regulatory requirements and the compliance regime. Issues of dormant account, controls in the creation of electronic money,

AML/CFT, customer onboarding, market conduct, cyber risk management, fraud management and business continuity were given special attention. The overall assessment of the FinTech industry's compliance was satisfactory.

5.3.2 Offsite Surveillance

The Bank leveraged on its suite of SupTech tools, namely; ORASS and the Supervisory Intelligence Platform (SIP) in the execution of offsite surveillance of the FinTech ecosystem. The tools enabled the Bank to receive dumps of granular data from service providers as well as conduct detailed analysis on the data. Valuable insights were gained into dormant accounts which led to an industrywide thematic review of dormant account practices and policies for effective compliance with the relevant section of Act 987. Furthermore, online surveillance tools assisted the Bank to identify unapproved as well as fraudulent digital financial products and services. This enabled the Bank to carry out the necessary regulatory and legal actions against perpetrators in collaboration with the relevant law enforcement agencies.

5.3.3 Enforcement of Dormant Account Guidelines

To promote the effective management of dormant electronic money accounts in compliance with Section 33 of Act 987, the

Bank issued the “Guidelines on the Treatment of Dormant Electronic Money Accounts and Unclaimed Balances, 2022”. The Bank enforced the Guidelines for the treatment of dormant accounts and reclaiming of funds on dormant electronic accounts.

5.3.4 Float Management Assessment

Mobile money float accounts with partner banks were operated in accordance with the fund isolation requirements under Section 37 of Act 987 and related directives. Analysis of prudential returns from banks and DEMIs and observations during onsite examinations indicated that, mobile money float account holdings were diversified across multiple banks. This complied with portfolio diversification and prudential limits aimed at safeguarding the mobile money ecosystem.

5.3.5 Enforcement of Know Your Customer (KYC) and Merchant Accounts

Compliance with the risk-based electronic merchant account onboarding policy contained in NOTICE NO. BG/GOV/SEC/202/15 on Merchant Account Categorization was satisfactory. New businesses were onboarded in line with the policy. Similarly, substantial progress was made towards regularising the KYC details

of merchant acquired prior to issuance of the Merchant Account Categorisation policy.

5.3.6 Agent Surveillance

Mobile money agents are critical points of access to financial services and therefore one of the major channels for the promotion of financial inclusion. In view of the criticality of agent network integrity in the digital financial ecosystem, agent surveillance exercise was carried out across the country to ascertain the principal's compliance to section 88 of Act 987 which stipulates the responsibilities of the principals to their agents.

5.4 Corporate Governance

Corporate governance practices in the FinTech ecosystem improved significantly on account of training programs organised for PSPs. To further enhance corporate governance practices in the FinTech space, the Bank commenced drafting a corporate governance directive tailored to the needs of the Ghanaian FinTech industry.

5.5 Business Continuity

In ensuring that regulated entities thrive, the Bank focuses on business continuity as one of the critical thematic areas of review in its oversight and supervision framework. The processes, systems and policies of a regulated entity are examined to review

lapses that may pose a threat to the future survival of the entity.

5.6 Bank of Ghana Fintech Projects

The Bank continued to promote responsible innovation in the digital financial service ecosystem through continuous work on the following projects:

- a. Regulatory Sandbox;
- b. Chatbot;
- c. Central Bank Digital Currency (CBDC); and
- d. FinTech industry engagements.

5.6.1 Regulatory Sandbox

The Bank's Regulatory Sandbox was launched on August 19, 2022 after a successful pilot during which two (2) licensed entities and one (1) FinTech start-up tested various innovative solutions in the areas of outbound remittance and a financial trust kiosk.

The pilot afforded opportunity for the implementation of critical updates to the sandbox platform for enhanced functionalities and robustness in areas such as dashboard, workflow, audit trail, comments and decisions, time stamp, online review and analysis and report generation. The following documents were developed for the sandbox governance;

- a Regulatory Sandbox (operations) framework;
- a Regulatory Sandbox governance framework;
- a user guide; and
- an FAQ manual

5.6.2 ChatBot Project

The consumer complaint Chatbot project being implemented by the Bank in collaboration with Proto and ADFI was deployed for piloting on the Bank of Ghana website in the first quarter of 2022. The Chatbot currently supports interactions in English and Akan, the most widely used Ghanaian language. Learning from the pilot will inform further enhancements to make the platform more suitable to the needs of diverse financial consumer groups.

5.6.3 Central Bank Digital Currency (CBDC) Project

The Bank of Ghana's Central Bank Digital Currency (CBDC) pilot project was completed in the third quarter of 2022. Offline and online CBDC solutions were successfully tested in rural and urban centres in collaboration with five (5) Financial Service Providers (FSPs) which included two (2) banks, two (2) Payment Service Providers (PSPs), and one (1) Dedicated Electronic Money Issuer (DEMI). The pilot

was characterised by the following key activities:

a. Baseline Survey

The survey provided a deeper understanding of the payment habits and the associated challenges of the sampled pilot participants of 2,253 comprising individuals and merchants. The outcome of the survey assisted in shaping the CBDC solution design to reflect the needs and aspirations of users of payment products and services.

b. Field Testing of CBDC

The offline CBDC solution was tested in off-grid locations while the online solution was tested in urban and peri-urban centres. A total of 2,750 participants made up of individuals and merchants took part in the field pilot. The tested use cases included payment at merchant point of sale, online payment for goods and services and funds transfer.

c. Focus Group Discussions

Focus group discussions conducted during the pilot enabled the Bank to obtain valuable feedback on user experience and further assisted in the enhancements of the project implementation. Initial challenges were identified and remedied in time, which contributed to the success of the project.

d. Endline Survey

A post-pilot survey was carried out to gain insight into user experiences and to solicit views and recommendations for improvements required before mainstreaming the solution. Broadly, the solution garnered positive feedback with recommendations for robustness, resilience and safety of the solution as well as affordability.

5.7 FinTech Industry Engagements and Collaborations:

5.7.1 FinTech Startups

The Bank of Ghana in partnership with GIZ provided targeted training and mentorship to Stanbic Bank NextGen Accelerator FinTech innovation hub. The one (1) day program covered the payments regulatory environment, corporate governance best practice for FinTechs, compliance and risk management.

5.7.2 Ghana Israel FinTech Festival

The Bank of Ghana and the Israel Embassy in Ghana co-hosted the first Ghana and Israel FinTech Festival. The event brought together FinTechs in Ghana and Israel, allowing them to share experiences, ideas and expertise in issues critical to the growing digital financial service industry such as cyber security, artificial intelligence and machine learning, AML/CFT and fraud monitoring tools.

5.7.3 Business Sans Borders

Under the Business sans Borders (BSB) project being implemented by the Bank of Ghana and the Monetary Authority of Singapore (MAS), the Ghana Integrated Financial Ecosystem (GIFE) program was launched on June 14, 2022. GIFE utilises open digital infrastructures to assist Ghanaian MSMEs in financial education, financial trust-building, trade discovery, and financing. GIFE will also digitally link banks' financing guarantees for Ghanaian MSMEs with the digital infrastructure to grow trade.

GIFE is built on the following 5 key Pillars:

- Pillar 1 - Financial Empowerment for Ghanaian Businesses;
- Pillar 2 - Expanded business opportunities through Digital Hubs;
- Pillar 3 - Connected Digital Financing and Guarantees via a Financial Trust Corridor (FTC);
- Pillar 4 - Reputation Building; and
- Pillar 5 - Capital and Equity Growth.

The project focuses on three (3) key horizontals, including women-led businesses, youth-led businesses, and Environment, Social and Governance (ESG)/Green businesses.

5.7.3.1 Update on Ghana Integrated Financial Ecosystem (GIFE)

A total of 756 Ghanaian SMEs were onboarded to the SME Financial Empowerment Programme (SFE) under the GIFE, of which 489 successfully completed the fundamental, intermediate and advance financial and digital literacy programmes.

5.7.3.2 Green FinTechs

The Environment, Social and Governance (ESG) component of the GIFE also received a boost as the Bank of Ghana and MAS worked with industry to develop digital utilities for efficient flow of ESG data. The tools are expected to support financial institutions and business entities to mobilise capital for sustainable projects, monitor commitments to ESG and measure impact.

5.8 CBDC Diary Study

The Bank, in partnership with the Consultative Group to Assist the Poor (CGAP), contracted Decodis (a social research company) to assess the potential impact of CBDC on financial inclusion. A diary study, involving eighty-two (82) individuals and two (2) merchants, was carried out over a period of three (3) weeks. The study, which was limited to participants in the pilot, provided perceptive information about CBDC user journey, habits, usage scenarios, attitudes and motivations, and perceptions about payments in general and CBDC in particular.

CHAPTER 6: PAYMENT SYSTEMS RISK AND OVERSIGHT

6.1 Enhancement of Regulatory Framework

In 2022, the Bank continued its oversight functions to ensure compliance with the Payment Systems and Services Act, 2019 (Act 987) and other directives issued by the Bank, to enhance safe and secure digital payments. The Bank also introduced some regulations and guidelines to strengthen the legal basis for the evolving payment systems environment, such as the Guidelines on the Treatment of Dormant Electronic Money Accounts and Unclaimed Balances.

6.2 Issuance of Cheque Printer Accreditation Certificate

Camelot Ghana Limited and Checkpoint Ghana Limited were issued with Cheque Printer Accreditation Certificates, as accredited cheque printers, under Act 987. The accreditation certificates were issued in line with the printer's compliance with the regulatory requirements under section 6 of the Cheque Printer Accreditation Standard.

6.3 Payment Systems Advisory Committee Activities

The Payment Systems Advisory Committee (PSAC) continued to play its advisory role to

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

Pursuant to section 5 (1) of Act 987, the PSAC in 2022, held two (2) 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) and the pilot of the Bank's digital currency (eCedi).

6.4 Oversight of Payment Service Providers

In 2022, the Bank conducted onsite and offsite examination of the operations and activities of PSPs to determine their level of compliance with the requirements of Act 987, other Directives, as well as Guidelines issued by the Bank of Ghana.

6.5 Examination of Licensed Financial Institutions

In 2022, ten (10) universal banks' payment systems operations were examined. The objective of the examination was to review the banks' payment systems and controls to determine the adequacy of 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.

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

Accredited Cheque Printers are institutions certified under the Payment Systems and Services Act, 2019 (Act 987) to print cheques. Two Accredited Cheque Printers; Camelot Ghana Limited and Checkpoint Ghana Limited were examined in 2022.

The primary objective of the examination was to determine the extent of the printers' compliance with Act 987 and the Cheque Printer Accreditation Standard.

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

GhIPSS is a designated payment service provider, and the operator of the national

Switch. GhIPSS, as a Systemically Important Payment System (SIPS) operates the major retail payment system infrastructures comprising Ghana Automated Clearing House (GACH), Cheque Codeline Clearing (CCC) system, retail payment interoperability system, Biometric Smartcard Payment System - e-zwich™ and National Switching and Processing System - Gh-Link™ system.

The 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 served as 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.

CHAPTER 7: FINANCIAL INCLUSION IN GHANA

7.1 Innovations and Developments in Financial Inclusion

Financial inclusion remained a key focus of Ghana's financial and economic development agenda. The Bank of Ghana remained focused on ensuring that its overall strategy was aligned with these developments with a view of enhancing financial inclusion and providing supervisory and regulatory support to partners in the payment ecosystem in order to deliver value to consumers.

7.2 Financial Inclusion Policy Interventions

The Bank of Ghana continued to identify and implement policies to close the policy gap with the aim of increasing financial inclusion by targeting areas such as cost reduction, financial literacy, consumer protection and ensuring the safety and security of the payment space.

To address the policy gaps, the Bank implemented a number of interventions and strategies. Among these policy interventions and strategies were:

- Use of Ghana Card as primary means of identification for financial transactions;
- Guidelines on the Treatment of Dormant Electronic Money Accounts and Unclaimed Balances, 2022;
- Upgrade of the ACH direct debit platform;
- Increase in the Limits on Mobile Money Wallets; and
- Launch of GhanaPay.

7.2.1 Use of Ghana Card as Primary Means of Identification for Financial Transactions

The Bank of Ghana directed that from July 1, 2022 the Ghana card should be used as the principal means of identification for Know Your Customer (KYC) for all financial transactions. This policy direction was aimed at curbing cyber risk and money laundering while encouraging financial inclusion.

7.2.2 Guidelines on the Treatment of Dormant Electronic Money Accounts and Unclaimed Balances, 2022

The Bank issued a guideline to guide Payment Service Providers (PSPs) and Dedicated Electronic Money Issuers (DEMIIs) on the treatment of dormant accounts and unclaimed balances of customers. The guideline served as a reference point to guide the operators of electronic money accounts on how to deal with accounts of customers which have been declared dormant. The guideline defined dormant accounts and provided the procedures for declaring an account as dormant.

The guideline also provided comfort for the general public, and boosted the confidence of consumers concerning the safety of their funds even during dormancy of their accounts.

7.2.3 Increase in the Limits on Mobile Money Wallets

To facilitate the adoption of digital payments and to enhance financial inclusion, the Bank revised the limits on mobile money wallets, to enable customers to have higher value on their wallets.

In this regard, Minimum KYC Accounts which initially had a limit of ₵1,000 was upgraded to ₵2,000, Medium KYC

Accounts with a limit of ₵5,000 was increased to ₵10,000 and Enhanced KYC Account with a ₵10,000 threshold was reviewed to ₵15,000.

These measures aim to boost transactions on the mobile money platforms, and encourage more people to adopt digital payments as a best alternative to cash payments, ultimately boosting financial inclusion.

7.2.4 Launch of GhanaPay

The Bank of Ghana provided support and partnered with the Ghana Interbank Payment and Settlement Systems (GhIPSS) and the Ghana Association of Banks (GAB) to launch a digital wallet for the banks, called the “GhanaPay”. The GhanaPay is an application hosted on mobile devices as a digital wallet to facilitate electronic transactions as well as savings and investments.

This initiative is geared towards creating an environment for onboarding customers of banks and providing an alternative to the well-established traditional banking set up, and increase the acceptance of digital payments.

7.3 Peer Learning and Study Visit

The Bank also shared the success it has chalked in the payment ecosystem by hosting a number of Central banks and

institutions to exchange experiences, best practices, and lessons gained in the development of an effective enabling payment ecosystem. The Bank largely undertook this in cooperation with some important partners, including The Ghana Interbank Payment and Settlement Systems (GhIPSS), and the commercial banks.

As part of adhering to the COVID-19 standards, guests were hosted in a hybrid style that enabled both in-person and online involvements.

Appendix

Table 17: Comparative Payment System Statistics from 2018 to 2022

Category	Indicators	2018	2019	2020	2021	2022	Annual Change 2022 (%)
Basic Statistical data	Total Population Estimate (million)	29.61	30.20	31.07	30.80	30.83	-
	Exchange Rate (GHS/USD\$)-End of Year	4.8200	5.5337	5.7631	6.0061	8.5803	-
	Nominal Gross Domestic Product (GDP) GH¢'million	308,587.40	356,544.27	391,940.73	459,130.92	615,761.00	-
Institutions offering payment services	Licensed Banks (DMBs)	23	23	23	23	24	4.35
	Bank Branches	1,557	1,179	1,177	1,186	1,190	0.34
	Rural and Community Banks	144	144	145	145	147	1.38
	NBFI & SDIs	774	366	366	365	366	0.27
	Micro Finance Institution (MFI)	566	180	180	180	177	-1.67
	Mobile Money Operators	3	3	3	3	3	-
	Active mobile money agents	180,664	226,298	328,329	442,375	505,122	14.18
Large Value Payments (RTGS):	Volume	1,221,650	1,376,094	1,442,182	1,505,523	1,391,590	-7.57
	Value (GH¢'million)	1,963,465.27	2,106,117.85	2,433,537.47	1,922,865.47	2,312,063.56	20.24
	Average Value per Transaction (GH¢)	1,607,224.06	1,530,504.35	1,687,399.70	1,277,207.63	1,661,454.57	30.08
	Volume of transactions per day	4,926.01	5,548.77	5,815.25	6,070.66	5,611.25	-7.57
Cheque Codeline Clearing (CCC)	Volume	7,255,220	6,831,417	5,903,331	5,975,750	5,770,593	-3.43
	Value (GH¢million)	203,465.32	173,623.25	177,625	203,854	254,439	24.81
	Average Value per Transaction (GH¢)	28,043.99	25,415.41	30,088.94	34,113.54	44,092.34	29.25
	Average Volume of transactions per day	29,254.92	27,546.04	23,803.75	24,095.77	23,268.52	-3.43
ACH Direct Credit	Volume	6,645,126	7,404,059	8,131,989	8,688,154	9,812,298	12.94
	Value (GH¢'million)	30,226.94	36,137.96	49,794.26	60,730.43	76,644.26	26.20
	Average Value per Transaction (GH¢)	4,548.74	4,880.83	6,123.26	6,990.03	7,811.04	11.75
	Average Volume of transactions per day	26,794.86	29,855.08	32,790.28	35,032.88	39,565.72	12.94
ACH Direct Debit	Volume	861,169	722,337	827,901	860,858	840,369	-2.38
	Value (GH¢'million)	139.15	173.10	936.10	1,339.97	1,648.84	23.05

Category	Indicators	2018	2019	2020	2021	2022	Annual Change 2022 (%)
	Average Value per Transaction (GH¢)	161.58	239.64	1,130.69	1,556.55	1,962.04	26.05
	Average Volume of transactions per day	3,472.46	2,912.65	3,338.31	3,471.20	3,388.58	-2.38
E-zwich	Total Number of Cards Issued	2,774,799	3,072,965	3,252,493	3,468,894	3,625,543	4.52
	Volume of Transactions	7,759,354	10,796,560	10,477,601	7,856,107	6,159,465	-21.60
	Value of Transactions (GH¢million)	5,651.14	6,308.37	9,033.25	7,913.80	14,648.54	85.10
	Average Volume of transactions per day	21,258.50	29,579.62	28,705.76	21,523.58	16,875.25	-21.60
Gh_Link™ (National Switch)	Volume	1,830,182	972,746	806,486	889,266	1,018,456	14.53
	Value (GH¢'million)	543.74	329.23	329.70	427.30	551.30	29.02
	Average Value per Transaction (GH¢)	297.10	338.45	408.81	480.51	541.30	12.65
	Average Volume of transactions per day	5,014.20	2,665.06	2,209.55	2,436.35	2,790.29	14.53
GhIPSS Instant Pay (GIP)	Volume	143,879	1,905,267	6,804,754	37,672,319	76,483,008	103.02
	Value (GH¢'million)	534.04	3,456.89	9,146.76	31,357.40	58,698.07	87.19
	Average Value per Transaction (GH¢)	3,711.76	1,814.39	1,344.17	832.37	767.47	-7.80
Mobile Money	Total number of mobile voice subscription (Cumulative)	40,934,875	40,173,115	40,173,115	41,777,355	39,736,755	-4.88
	Registered mobile money accounts (Cumulative)	32,554,346	32,470,793	38,473,734	48,308,975	55,288,500	14.45
	Active mobile money accounts	13,056,978	14,459,352	17,142,677	17,948,480	20,380,716	13.55
	Registered Agents (Cumulative)	396,599	306,346	423,892	579,672	699,592	20.69
	Active Agents	180,664	226,298	328,329	442,375	505,122	14.18
	Total volume of mobile money transactions	1,454,470,801	2,009,989,300	2,859,624,191	4,246,799,232	5,067,513,712	19.33
	Total value of mobile money transactions (GH¢'Million)	223,207.23	309,352.25	564,155.90	978,323.79	1,072,157.00	9.60
	Balance on Float (GH¢'Million)	2,633.93	3,633.83	6,980.03	9,744.38	13,071.43	34.14
	Average Volume of transactions per day	3,984,851	5,506,820	7,834,586	11,635,033	13,883,599	19.33

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	Year Ending 2022	Percent Change (2022)
ATMs	Number of ATMs (cumulative)	2,139	2,123	2,237	2,278	2,256	-0.97
	Volume of transactions	57,763,558	55,709,252	56,603,211	52,146,614	53,840,588	3.25
	Value of transactions (GH¢)	21,796,487,291	26,392,440,332	32,148,026,396	35,687,433,783	47,631,482,852	33.47
POS Terminals	Number of Terminals (cumulative)	8,253	8,802	10,489	12,643	13,418	6.13
	Volume of transaction	10,218,088	14,251,259	15,159,237	12,511,893	12,283,651	-1.82
	Value of transaction (GH¢)	8,261,737,489	8,104,491,560	11,271,897,541	10,098,188,684	18,312,827,514	81.35
Internet Banking	Number of Customers registered	815,904	1,106,270	1,019,073	970,435	1,129,387	16.40
	Volume of transactions	3,205,878	4,651,290	7,055,793	9,077,471	10,334,353	13.85
	Value of transactions (GH¢)	6,267,223,830	12,014,728,578	24,208,653,517	56,237,587,415	80,438,220,592	43.03
Mobile Banking	Number of Customers registered	3,891,269	4,245,479	4,767,719	4,062,731	4,809,103	18.37
	Volume of transactions	14,805,878	18,770,721	34,842,318	55,096,423	65,322,898	18.56
	Value of transactions (GH¢)	5,658,399,344	6,687,332,884	12,940,760,028	26,112,324,108	38,474,504,827	47.34
Debit Cards	Number of cards issued (cumulative):	4,754,514	4,427,848	4,813,063	4,936,246	5,147,066	4.27
	International Scheme Cards	3,142,223	2,841,048	3,168,608	3,647,285	3,896,513	6.83
	Banks own proprietary cards	1,612,291	1,586,800	1,644,455	1,288,961	1,250,553	-2.98
	Volume of transaction	60,118,182	56,068,367	58,596,924	61,236,956	66,147,757	8.02
	Value of transaction (GH¢)	21,804,830,666	27,758,120,613	37,903,559,526	47,483,659,668	197,459,245,588	315.85
Credit Cards	Number of cards issued (cumulative):	23,102	29,050	33,039	36,327	48,557	33.67
	International Scheme Cards	23,102	29,050	33,039	36,327	48,557	33.67
	Banks' own proprietary cards	-	-	-	-	-	-
	Volume of transaction	324,841	465,906	460,876	524,418	974,151	85.76
	Value of transaction (GH¢)	171,702,441	232,609,683	235,013,808	295,575,606	802,057,785	171.35
Prepaid cards	Number of cards issued (cumulative)	216,592	372,586	573,703	834,584	1,163,339	39.39
	Volume of transactions	590,139	489,672	382,678	583,438	2,837,175	386.29
	Value of transactions (GH¢)	326,055,976	358,649,962	311,321,972	554,697,561	1,771,350,947	219.34

Source: Bank of Ghana