

PAYMENT SYSTEMS OVERSIGHT ANNUAL REPORT, 2017



**PAYMENT SYSTEMS DEPARTMENT
BANK OF GHANA**

Executive Summary

The payment system landscape witnessed significant changes on account of the growing role of financial technology firms. The development is attributed to conscious efforts by Government and Bank of Ghana to promote digital payments as alternative to cash; and customers demand for fast, convenient and efficient payments. A survey conducted by the department revealed that there are currently seventy-one (71) FinTechs providing both front and back end services to the banking sector.

The other main developments during the year were legal and regulatory reforms, airtime use for payment of insurance premium, agent registry, mobile money interoperability, migration of magnetic strip cards to EMV standard and support for National Identification Authority. The Bank also through the Payment Systems Department obtained assistance from FSD Africa, United Kingdom DFID funded institution that aims at reducing poverty across sub Saharan Africa by building financial markets that are efficient, inclusive and robust. The primary aim of the programme is to develop the retail credit market, expand financial inclusion and increase access to credit. The programme entails a diagnostic study of the retail credit market and development of a template to collect dataset for monitoring of the credit market.

The value of retail payments (excluding cash) increased by 43.18 percent to GH¢381.43 billion in 2017 from GH¢266.39 billion in 2016. The growth in the value of the retail payment instruments was on account of increase in the value of mobile money services (98.50 percent), and e-zwich (45.34 percent). Mobile money has overtaken cheques as the main non-cash retail payment instrument with 981.6 million volume of transactions, followed by Debit Card (60.4 million), e-zwich (8.4 million), cheques (7.3 million) and Direct Credit Transfer (6.1 million) in 2017. However, in terms of value of transactions undertaken in 2017, cheques continued to maintain its lead with GH¢179.6 billion while mobile money followed closely with GH¢155.8 billion.

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Chapter 1

1.0 Developments in Global Payments

Payments in 2017 remain one of the fastest growing components of the financial services industry. Governments and central banks efforts to engender cashless economies, technological innovation and financial inclusion help to drive growth in non-cash transactions in most emerging markets. Global non cash transaction volumes went up by 11.2 percent to reach USD433.1billion attributed mainly to Emerging Asia growth rate of 43.4 percent and Central Europe, Middle East and Africa (CEMEA) 16.4 percent growth. All payment instruments except cheques transactions volumes increased during the year. The increasing use of electronic payment accounted for the decline in the use of cheques. Payment by cards for example went up faster than other payment instruments on account of its convenience and security.

Financial inclusion measures especially in Emerging Asia and Africa are expected to fuel growth in non-cash transactions on account of deployment of mobile and other forms of digital payments. Mobile technology was therefore identified to play a central role in resolving socio-economic developmental challenges in Africa especially digital and financial inclusion. Financial technology firms (FinTechs) continued to provide services to the financial services industry and were found unlikely to disrupt bank payment business.

Technological innovations such as blockchain technology and Internet of Things were also identified to transform payment landscape on account of importance of data to payments. User experiences globally are also expected to be enhanced and provide growth for payments through proliferation and adoption of alternative payment channels such as contactless and modern techniques of authentication including biometrics. Biometrics is projected to become an important means of identification as countries push for stronger customer authentication.

Developments in the global payments have various implications for the Ghanaian payment systems. The Bank will continue to create the enabling regulatory environment for the growth of non-cash payments through passage of Guidelines on

Electronic Payment Channels, authorization for financial institutions to issue credit and debit cards and facilitation of deployment of point of sales devices. The Bank will also continue to engage the National Identification Authority to promote biometric identification system as a means for identification and support mobile money interoperability that would facilitate movement of funds from mobile wallets to bank accounts.

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Chapter 2

2.0 Developments in the Ghanaian Payment Systems

Key developments in the payment systems landscape during year 2017 are discussed in this section.

2.1 Legal and Regulatory Review

The Payment Systems and Services Bill was submitted to cabinet through the Ministry of Finance for onward transmission to parliament. The Bill made provision for cyber security regulations and adherence to Information and Communication Technology standards to minimize cyber risk. It also requires payment service providers to adhere to the Data Protection Act 2012 (Act 843) and meet prescribed regulatory standards.

2.2 Airtime for Premium Payments

Section 22(3) of the Electronic Money Issuers Guidelines (2015) which prohibits the use of airtime as digital money for digital payment was relaxed. The overall objective of this initiative is to scale up insurance penetration especially among the under privileged.

2.3 Agent Registry

Agent network has become an important element of the payments system landscape. A digital Agent Registry is being developed by the department in collaboration with the Information Technology Department to enhance identification and oversight of agents. The Agent Registry also aims at inter-connecting with the national digital address system to provide unique identification for agents and to facilitate monitoring and tracking of agents on real time basis. The Registry focuses on mapping and capturing data on all agent access points across the country to leverage on the General Packet Radio Services (GPRS) technology.

2.4 Mobile Money Interoperability

An interoperability project aimed at boosting efficiency, accessibility and competition within the mobile money space commenced in 2017. Under the project, disparate

mobile money platforms would be linked to each other through the gh-Link switch of GhIPSS to facilitate funds transfer across mobile money networks. The system would eventually integrate with interbank payment systems infrastructure to create an integrated and interoperable digital retail payments ecosystem, and facilitate seamless funds transfer across payment systems.

Development works for integration with GhIPSS infrastructure was completed. Establishment of network connections between mobile money operators and GhIPSS, and testing and certification of systems were planned for April 2018. The project was planned to be launched on May 10 2018

2.5 Migration to EMV Technology

Significant progress was made towards EMV migration in 2017 following the project launch in November 2016. Most banks have completed the required processes and successfully produced gh-link™ cards based on the EMV technology and standards. Liability shift for non-EMV compliant card transactions was agreed to commence on April 02, 2018. The purpose of the migration from magnetic strip cards to EMV cards is to enhance security in card payments.

2.6 National Identification System

The banking industry, through the initiative of the department, co-operated with the National Identification Authority (NIA) to implement a national identification system that meets the Know Your Customer (KYC) and Customer Due Diligence (CDD) requirements of the banking sector. The identification system is based on biometric technology and would provide continuous verification access to banks at all times. The system is expected to curb or minimize the incidence of identity fraud at point of transactions, enhance security of card-not-present transactions and provide reliable system for profiling the underserved and unbanked for financial services. The NIA system is to provide nationwide coverage and therefore expected to be more suitable for promoting financial inclusion compared with the banking sector Bank Identification Project initiated in 2016. Consequently, the banking sector project was discontinued with the view to supporting the NIA project.

2.7 Financial Technology Companies (FinTechs)

The payment system landscape witnessed significant changes on account of the growing role of financial technology firms. The development is attributed to conscious efforts by Government and the Bank of Ghana to promote digital payments as alternative to cash; and customers demand for fast, convenient and efficient payments. A survey conducted by the department revealed that there are currently seventy-one (71) FinTechs providing both front and back end services to the banking sector.

Banks have partnered financial technology firms to provide innovative financial services to the public in response to the increasing demand for digital payment products. These factors among others necessitated further review of the Payment Systems and Services Bill to provide a strong legal basis for licensing FinTechs that meet the prescribed licensing requirements. The objective is to identify the weak link that FinTech may create in the financial and payment systems with respect to data protection issues and cyber risk for enhanced oversight.

2.8 RegTech Project

The Bank signed an agreement with Bankable Frontier Associates (BFA) to develop RegTech solution to enhance supervision and evidenced based policy development. Consumer complaints and management was identified as key area of supervisory concern and for redress. A Chatbot and Consumer Complaints Clearing house system are being developed for effective consumer complaints resolution. A prototype is expected to be completed in 2018 for pilot study with mobile money operators.

2.9 Financial Sector Deepening Africa

The Bank through the department obtained the assistance of FSD Africa, United Kingdom DFID funded institution aims at reducing poverty across sub Saharan Africa by building financial markets that are efficient, inclusive and robust. The primary aim of the programme is to develop the retail credit market, expand financial inclusion and increase access to credit. The programme entails a diagnostic study of the retail credit market and development of a template to collect dataset for monitoring of the credit market.

Chapter 3

3.0 Introduction

The section provides information on products and services developed by banks in collaboration with other payment service providers and approved by the Bank during 2017.

3.1 ARB Apex Bank ATMs for Rural and Community Banks (RCBs)

The Bank approved ARB Apex Bank Automated Teller Machines (ATMs) for RCBs. The service is to leverage on existing payment technology to broaden the RCBs' clientele, introduce a secure and reliable platform to improve interoperability among RCBs and enhance market reputation of RCBs. ARB Apex Bank intends to collaborate with GhIPSS to ensure that cards issued by the RCBs are accepted on ATMs deployed by universal banks.

3.2 GTBank Instant Account

The GTBank and SMSGH Solutions (Ghana) Limited with the approval of the Bank of Ghana introduced a new product called "Bank *737#" and Instant Account services. The product is an unstructured supplementary service data (USSD) mobile banking service designed to enable customers with no internet connection to perform basic banking services and it is available only to GTBank customers. However, prospective customers of GTBank may use USSD code to open accounts. It provides services including balance or general enquiry, airtime purchase, inward fund transfers and bill payment. The benefits of the product are to provide customers with convenience and efficient means of performing basic banking transactions on real-time basis and also attract the unbanked population to GTBank thereby promoting financial inclusion.

3.3 "myghpay.com" Online Platform

The GTBank myghpay.com product which received Bank of Ghana's approval is a value added service designed to enable individuals, businesses and institutions make and/or receive payments online with the use of Visa or MasterCard, Gh-link cards, GTBank account and mobile money wallets. The product "myghpay.com" is an integrated and

secured, internet-based online payment and collection platform that provides convenience for the public in making payments to merchants. Transactions undertaken through this product are fast and on real-time basis. It also eliminates cash handling cost and its associated risks.

3.4 Merchant Quick Response (QR) Payment

Ecobank (Ghana) Limited in partnership with MasterCard, Visa International and Mobile Money Operators (MMOs) receive the Bank's approval to deploy an electronic payment solution that enables customers to pay for goods and services using their mobile phones. The product involves the use of a customer's mobile phone to scan a Quick Response (QR) code or Unstructured Supplementary Service Data (USSD) to pay for goods and services. It is to promote a fast, secure, convenient and cost-effective means of payment.

3.5 'Bond4All'

Ecobank's award-winning product, 'TBILL4ALL' was enhanced to include the purchase of Bonds. The product enables the public particularly the unbanked to purchase Government of Ghana domestic fixed income bonds using mobile money wallets.

3.6 Zenith Bank Visa Money Transfer

Zenith Bank Ghana Limited partnered ExpressPay Limited to roll out a Visa Money Transfer product. The product, "Zenith bank Visa Money", is a money transfer service that works through Visa Direct Services platform which enables customers of Zenith Bank to rapidly transfer funds from their Visa debit or prepaid cards to another Visa card.

3.7 'GTWorld' Mobile Banking

GTBank (Ghana) Limited introduced 'GTWorld', which is a mobile banking application that provides a convenience, secure and affordable means for the individual to undertake banking transactions from a mobile phone or tablet. The product is available to all customers of GTBank who have access to a smart phone or tablet with internet connection. Customers of the GTBank may perform banking transactions such

as account balance enquiry, inward fund transfer and bill payments. All payments conducted through the application are made directly from the customer's GTBank account and authenticated using the self-generated four (4) digit PIN.

3.8 Deployment of Point Of Sales Solution

First National Bank had an approval from the Bank to extend its acquiring services to support merchant payments for goods and services at merchant locations using payment cards. This was done through deployment of Point of Sale (POS) solution to facilitate payments for goods and services at merchant locations. Other features of the product include balance enquiries, bill payments, cash back and fund transfers.

3.9 FAB Mobile

FAB Mobile is a mobile money product introduced by the First Atlantic Bank which allows consumers to perform mobile money transactions such as bill payments across all Mobile Money Operators (MMOs) platforms. The product aims at bridging the gap between the banked and the under-banked population while providing convenience.

3.10 Purple pay

The Bank granted approval to First Atlantic Bank to introduce a payment product called Purple Pay. This product runs on MasterCard Payment Gateway Service (MPGS) and allows merchants to receive payments for goods and services from bank issued cards through online channels. The MPGS solution targets businesses across various sectors of the economy and attracts high volume of transactions. It also enables cardholders to pay for goods and services directly on merchant websites without the need to visit a bank branch or an ATM for cash and provides convenience, safety and efficiency for cardholders. Merchants also enjoy the safety of receiving cashless payments into their bank accounts and it reduces risks associated with accumulation of cash at merchant locations.

3.11 GN Mobile Money

GN Bank introduced GN Mobile Money which enables customers to conduct banking transactions using their mobile phones. The product is accessed through a USSD code

and offers flexibility, security and convenience in banking. The main services offered on the platform include balance inquiry, wallet deposits and withdrawals, transfers, bill payments and airtime purchase.

3.12 Societe Generale (SG) 'SG Connect' mobile application

Societe Generale (SG) introduced a mobile application that enables customers of SG to access their bank accounts and undertake transactions using mobile devices. The product allows real time transactions, account to account transfer and bill payments. It aims at curbing congestion at the bank's branches and creating convenience for customers and also meant to provide customers maximum control over their accounts.

3.13 Ecobank Xpress Loan

Ecobank (Ghana) Limited obtained the Bank's approval to partner mobile money operators in Ghana to provide micro loan products using mobile phone. The bank is leveraging on its existing banking infrastructure and electronic products to provide the loans to its customers. The benefits of the product include access to credit in an emergency cases and promotion of a cash-lite economy.

3.14 Agency, Mobile and Internet Banking

Women's World Banking (Ghana) Savings and Loans Company, in its quest to promote financial inclusion and facilitate access to credit particularly for women, introduced agency, mobile and internet banking services. These channels are used to provide existing financial services to customers who are able to perform transactions and access other services through mobile phones.

3.15 Agency Banking and Extension of Banking Channels

Banks now leverage on technology and partner with other institutions to deliver agency banking. These products help to increase financial access points at the same time create convenience and timely service delivery to customers. The Bank supports agency banking concept and therefore granted approval to First Atlantic Bank, Universal Merchant Bank (UMB) and First Allied Savings and Loans Company to offer financial services through selected agents.

3.16 Electronic Savings Products

Universal banks have partnered financial technology companies (Fintechs) and Mobile Money Operators (MMOs) to deliver banking services that are meant to promote access. The Bank granted approval to some universal banks to also link customers' accounts to their mobile money wallets. This innovation provides opportunity for delivery of services such as micro loans and savings. An example of these products is the "Jara Savings" product introduced by Premium Bank which provides savings opportunity to customers. The product allows customers to save and earn interest on their deposits using a mobile money platform. It is targeted at the low to middle income earners with specific focus on market women, office workers, students and artisans.

3.17 Credit, Prepaid and Debit Card Products

During the year under review, approval was granted to Standard Chartered Bank and Barclays Bank to issue credit cards to their customers. The products are to promote non-cash transactions and provide alternative payment channels to customers.

3.18 Mobile Money Agents

Universal Merchant Bank (UMB), Stanbic Bank (Ghana) Limited and ARB Apex Bank were granted approval to serve as mobile money agents. This is to create the convenience for customers and broaden the payment channels.

3.19 Termination of Inward Remittances into Mobile Money Wallets

Banks have partnered with Mobile Money Operators, Fintechs and Money Transfer Operators to terminate inward remittances directly into mobile money wallets of recipients. Some of these partnerships include Barclays Bank and Earthport Plc United Kingdom (UK), United Bank of Africa (UBA) and Western Union, Zenith Bank and Western Union, Stanbic Bank, Vodafone Cash and Homesend. These partnerships are to promote safe, reliable and convenient means for customers to receive money from abroad to meet the pressing financial obligations.

3.20 Growth in Non-Cash Payment Streams

In 2017, all the major payment streams as indicated in Table 1 showed considerable

growth in both volume and value of transactions compared with 2016 with the exception of Ghana Automated Clearing House (GACH) direct debit. Mobile money financial services experienced exponential growth as compared to other non-cash payment stream on account of expansion in agent network and introduction of innovative products. The growth in mobile money emanated from productive collaboration between mobile money operators and banks.

Cheques continued to be the major non-cash retail payment instrument in terms of values of transactions. However, value of cheques cleared as a percentage of total value of non-cash retail payments dropped from 60.21 per cent in 2016 to 49.33 per cent while value of mobile money grew from 31.02 per cent in 2016 to 42.81 per cent in 2017. The volume of mobile money transactions represented 97.50 per cent of total volume of non-cash retail payments.

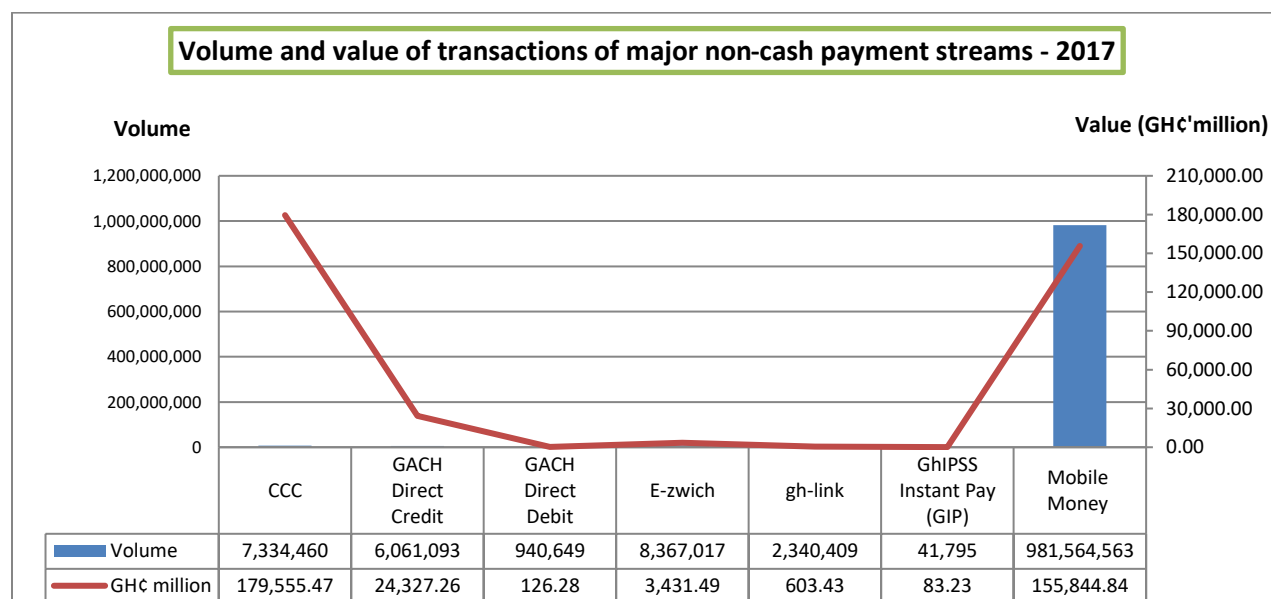
The growth in the non-cash payment space was partly on account of expansion of financial access points, efficiency in the payment systems and enabling regulatory environment.

Table 1 and chart 1 show the annual aggregate volumes and values of payment, clearing and settlement transactions process for 2016 and 2017.

Table 1: Total Transactions of Non-cash Payments Systems

Payment System	2016		2017		Change 2017		% Change 2017	
	Volume	GH¢ million	Volume	GH¢ million	Volume	GH¢ million	Volume	Value
GIS	889,709	1,670,369.46	934,234	2,083,846.27	44,525	413,476.81	5.00	24.75
CCC	7,309,406	152,390.42	7,334,460	179,555.47	25,054	27,165.05	0.34	17.83
GACH Direct Credit	5,242,610	19,245.65	6,061,093	24,327.26	818,483	5,081.61	15.61	26.40
GACH Direct Debit	874,846	127.01	940,649	126.28	65,803	-0.73	7.52	(0.57)
E-zwich	5,365,085	2,362.96	8,367,017	3,431.49	3,001,932	1,068.53	55.95	45.22
gh-link	2,067,498	447.04	2,340,409	603.43	272,911	156.39	13.20	34.98
GhIPSS Instant Pay (GIP)	184	0.42	41,795	83.23	41,611	82.81	22,614.67	19,716.67
Mobile Money	550,218,427	78,508.90	981,564,563	155,844.84	431,346,136	77,335.94	78.40	98.51

Chart 1: Volume and Volume of Transactions for Major Non-cash Payment Streams-2017



Chapter 4

4.0 Developments in Payment Systems Statistics

This chapter highlights development in key payment systems statistics in 2017.

4.1 Key Payment Systems Statistics 2015-2017

The department exercised oversight over the major financial markets infrastructures (FMIs) 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), Ghana's Paper Payment Instrument Accreditation Scheme; and the Mobile Money sub-sector. Tables 2 and 3 below provide the key payment systems statistics of these infrastructure.

Table 2: Comparative Payment System Statistics from 2015 to 2017

category	Indicators	2015	2016	2017	Annual Change 2017 (%)
Basic Statistical data	Total Population Estimate (million)	27.67	28.31	28.92	2.15
	Exchange Rate (GHS/USD\$)-End of Year	3.7948	4.2002	4.4157	5.13
	Nominal Gross Domestic Product (GDP) GH¢'million	136,957.40	168,752.00	204,078.00	20.93
Institutions offering payment services	Licensed Banks (DMBs)	29	33	34	3.03
	Bank Branches	1,173	1,341	1,491	11.19
	Rural and Community Banks	139	141	141	-
	NBFI	62	64	71	10.94
	Micro Finance Institution (MFI)	546	564	566	0.35
	Mobile Money Operators	4	4	3	(25.00)
	Active mobile money agents	56,270	107,415	151,745	41.27
Large Value Payments (RTGS):	Volume	794,282	889,709	934,234	5.00
	Value (GH¢'million)	1,032,544.00	1,670,369.46	2,083,846.27	24.75
	Average Value per Transaction (GH¢)	1,299,971.55	1,877,433.48	2,230,539.96	18.81
	Volume of transactions per day	3,164.47	3,587.54	3,767.07	5.00
Cheque Codeline Clearing (CCC)	Volume	7,146,259	7,309,406	7,334,460	0.34
	Value (GH¢million)	131,189.70	152,390.42	179,555.47	17.83

category	Indicators	2015	2016	2017	Annual Change 2017 (%)
	Average Value per Transaction (GH¢)	18,357.81	20,848.54	24,481.08	17.42
	Average Volume of transactions per day	28,471.15	29,473.41	29,574.44	0.34
ACH Direct Credit					
	Volume	4,668,636	5,242,610	6,061,093	15.61
	Value (GH¢'million)	15,075.07	19,245.65	24,327.26	26.40
	Average Value per Transaction (GH¢)	3,229.01	3,671.01	4,013.68	9.33
	Average Volume of transactions per day	18,600.14	21,139.56	24,439.89	15.61
ACH Direct Debit					
	Volume	692,615	874,846	940,649	7.52
	Value (GH¢'million)	70.91	127.01	126.28	(0.57)
	Average Value per Transaction (GH¢)	102.38	145.18	134.25	(7.53)
	Average Volume of transactions per day	2,759.42	3,527.60	3,792.94	7.52
E-Zwich					
	Total Number of Cards Issued	1,369,369	1,878,044	2,364,456	25.90
	Volume of Transactions	2,251,101	5,365,085	8,367,017	55.95
	Value of Transactions (GH¢million)	922.9	2,362.97	3,431.49	45.22
	Average Volume of transactions per day	6,167.40	14,658.70	22,923.33	56.38
Gh_Link™ (National Switch)					
	Volume	1,899,645	2,067,498	2,340,409	13.20
	Value (GH¢'million)	305.14	447.04	603.43	34.98
	Average Value per Transaction (GH¢)	160.63	216.22	257.83	19.24
	Average Volume of transactions per day	5,204.51	5,648.90	6,412.08	13.51
GhIPSS Instant Pay (GIP)					
	Volume		184	41,795	22,614.67
	Value (GH¢'million)		0.42	83.23	19,716.67
	Average Value per Transaction (GH¢)		2,282.61	1,991.39	(12.76)
Mobile Money					
	Total number of mobile voice subscription (Cumulative)	35,008,387	38,305,078	37,445,048	(2.25)
	Registered mobile money accounts (Cumulative)	13,120,367	19,735,098	23,947,437	21.34
	Active mobile money accounts	4,868,569	8,313,283	11,119,376	33.75
	Registered Agents (Cumulative)	79,747	136,769	194,688	42.35
	Active Agents	56,270	107,415	151,745	41.27
	Total volume of mobile money transactions	266,246,537	550,218,427	981,564,563	78.40

category	Indicators	2015	2016	2017	Annual Change 2017 (%)
	Total value of mobile money transactions (GH¢'Million)	35,444.38	78,508.90	155,844.84	98.51
	Balance on Float (GH¢'Million)	547.96	1,257.40	2,321.07	84.59
	Average Volume of transactions per day	729,442.57	1,503,329.04	2,689,217.98	78.88

Development in the payment channels during the year are provided below:

Table 3: Data on Payment Channels and Instruments

Item	Indicators	Half Ending 2015	Year Dec	Year Ending 2016	Year Ending 2017	Change 2017 (%)
ATMs						
	Number of ATMs (cumulative)		912	1,928	2,044	6.02
	Volume of transactions		28,367,033	51,554,833	57,317,491	11.18
	Value of transactions (GH¢)		5,876,478,243	13,135,609,757	18,542,950,793	41.17
POS Terminals						
	Number of Terminals (cumulative)		4,841	6,501	7,356	13.15
	Volume of transaction		1,007,180	6,692,472	7,198,029	7.55
	Value of transaction (GH¢)		403,263,712	2,067,783,504	4,158,052,064	101.09
Internet Banking						
	Number of Customers registered		840,532	962,487	936,965	(2.65)
	Volume of transactions		999,439	2,705,191	2,437,785	(9.88)
	Value of transactions (GH¢)		2,286,702,322	6,779,205,499	9,739,336,941	43.66
Mobile Banking						
	Number of Customers registered		1,449,374	2,175,644	2,110,984	(2.97)
	Volume of transactions		5,440,387	6,821,838	7,036,285	3.14
	Value of transactions (GH¢)		178,588,021	357,383,111	1,501,372,536	320.10
Debit Cards						
	Number of cards issued (cumulative):		4,304,097	5,446,030	5,953,484	9.32
	International Scheme Cards		2,094,329	2,223,383	2,912,256	30.98
	Banks' own proprietary cards		2,209,768	3,222,647	3,041,228	(5.63)
	Volume of transaction		22,852,411	46,456,021	60,382,177	29.98
	Value of transaction (GH¢)		5,213,724,329	13,582,667,448	17,785,179,796	30.94

Item	Indicators	Half Ending 2015	Year Dec 2016	Year Ending 2016	Year Ending 2017	Change 2017 (%)
Credit Cards	Number of cards issued (cumulative):	5,438		9,217	14,698	59.47
	International Scheme Cards	5,438		9,217	14,698	59.47
	Banks' own proprietary cards					
	Volume of transaction	57,801		138,037	185,101	34.10
	Value of transaction (GH¢)	33,728,201		70,085,071	99,989,316	42.67
Prepaid cards						
	Number of cards issued (cumulative)	44,250		58,907	86,017	46.02
	Volume of transactions	143,531		312,143	472,071	51.24
	Value of transactions (GH¢)	51,855,244		103,259,073	255,875,512	147.80

*Data exclude The Construction Bank, The Beige Bank and GHL Bank

4.2 Ghana Interbank Settlement (GIS) System

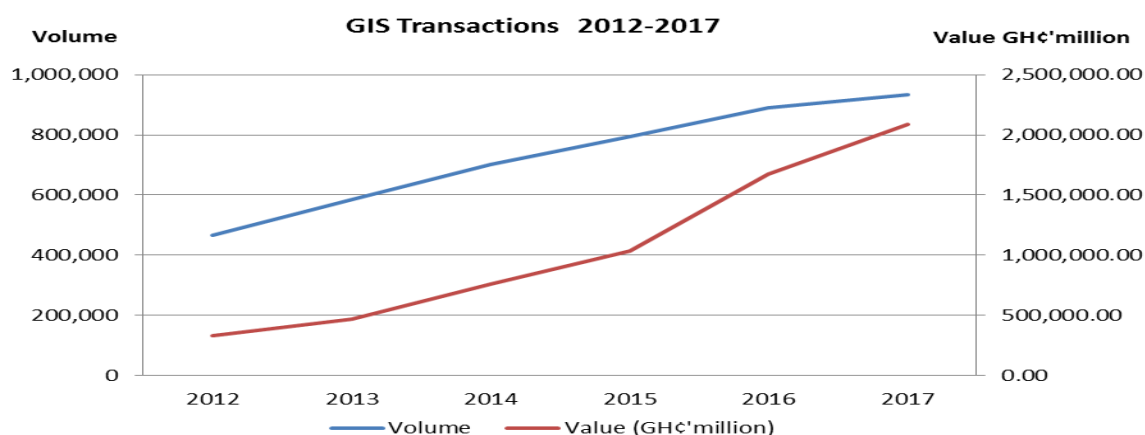
The Ghana Inter-bank Settlement (GIS) system which is Ghana's Real Time Gross Settlement (RTGS) system, continued to provide platform for high value payments.

The total volume of GIS transactions of 934,234 in 2017 showed an increase of 5 percent over the 2016 position of 889,709. Total value of GIS transactions increased by 24.75 percent to GH¢2,083,846.27 million in 2017. The average value per transaction was GH¢2.23 million in 2017 compared with GH¢1.88 million in 2016 (See Table 4 and Chart 2 for details)

Table 4: Ghana Interbank Settlement Transactions (RTGS)

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Volume	699,956	794,282	889,709	934,234	44,525	5.00
Value (GH¢'million)	758,312.16	1,032,544.00	1,670,369.46	2,083,846.27	413,477	24.75
Average value per transaction GH¢	1,083,371.18	1,299,971.55	1,877,433.48	2,230,539.96	353,106	18.81

Chart 2: Ghana Interbank Settlement Transaction (RTGS)



4.3 Cheque Codeline Clearing (CCC)

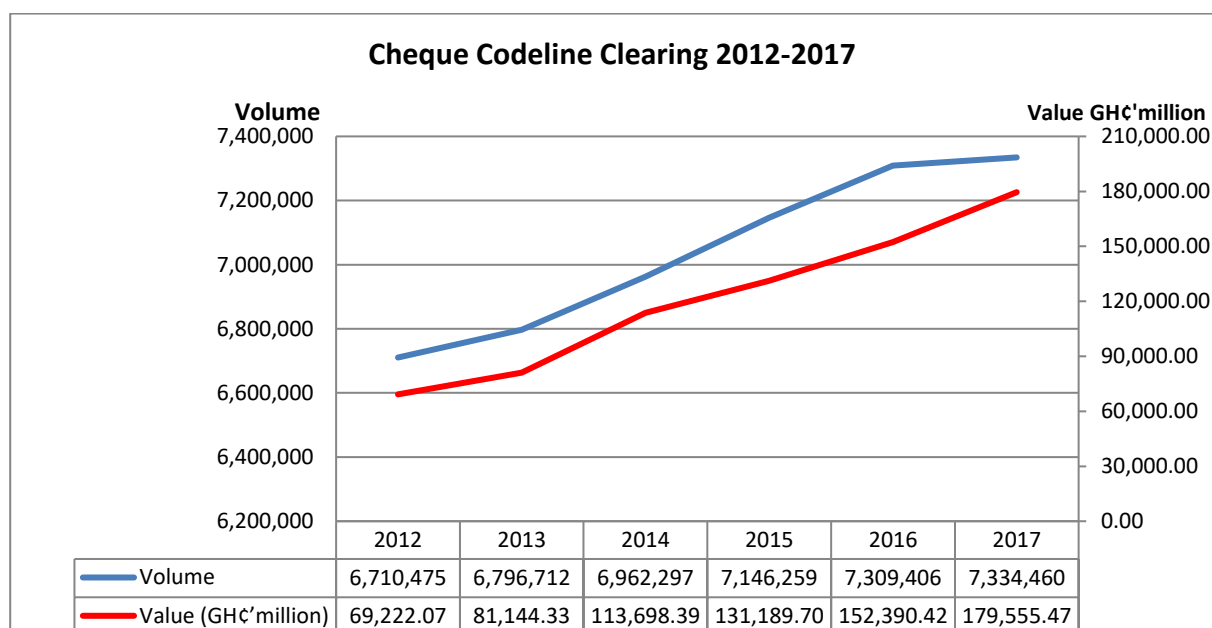
Cheque Codeline Clearing an electronic system for clearing cheques using the cheque image and codeline data continued to engender efficiency and timeliness in clearing and settlement of cheques.

The total volume of inter-bank cheques cleared during 2017 went up marginally to 7,334,460 from 7,309,406. Value of cheques cleared increased by 17.83 percent to GH¢179,555.47 million. The marginal increase in volume of inter-bank cheques was largely on account of adoption of other digital payment options such as mobile money, e-zwich, debit cards and GhIPSS Instant Pay (see Table 5 and Chart 3)

Table 5: Cheque Codeline Clearing

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Volume	6,962,297	7,146,259	7,309,406	7,334,460	25,054	0.34
Value (GH¢'million)	113,698.39	131,189.70	152,390.42	179,555.47	27,165.05	17.83
Average value per transaction GH¢	16,330.59	18,357.81	20,848.54	24,481.08	3,632.54	17.42

Chart 3: Cheque Codeline Clearing (CCC)



4.4 Ghana Automated Clearing House (GACH)

4.4.1 Direct Credit

The GACH direct credit enables individuals and corporate bodies to make payments by electronic transfer directly into bank account of the beneficiary. Direct credit is usually used for payment of salaries, pensions, welfare benefits, commissions, supplier payments, dividend, refunds, interest payments and government payments.

Total volume of transactions effected through direct credit channel in 2017 was 6,061,093, indicating an increase of 15.61 percent over the 2016 position of 5,242,610. Similarly, total value of direct credit transfers increased from GH¢19,245.65 million in 2016 to GH¢24,327.26 million in 2017. Payment of SSNIT pensions by the Bank of Ghana on behalf of Government continued as the main contributor to the growth in direct credit transactions (see Table 6 and Chart 4).

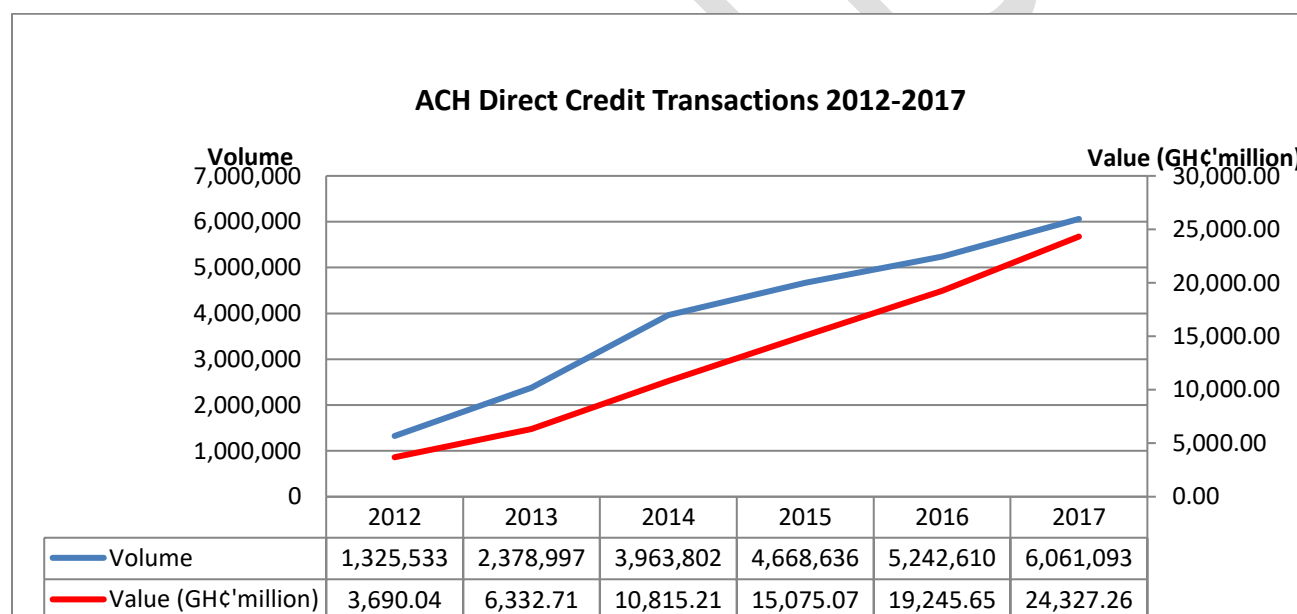
Express Automated Clearing House (ACH) direct credit a medium of clearing that ensures funds are cleared on the same day recorded a significant growth of 72.34

percent over 2016 position of 279,959. The growth in Express ACH is an indication that bank customers prefer to have instant access to their funds.

Table 6: GACH Direct Credit Transactions

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Volume	3,963,802	4,668,636	5,242,610	6,061,093	818,483	15.61
Value (GH¢'million)	10,815.21	15,075.07	19,245.65	24,327.26	5,082	26.40
Average value per transaction GH¢	2,728.49	3,229.01	3,671.01	4,013.68	342.67	9.33

Chart 4: GACH Direct Credit Transactions



4.4.2 Direct Debit

Direct Debits are debit-pull instruments used for recurring payments such as utility bills, insurance premiums, loan re-payments, rent and subscriptions.

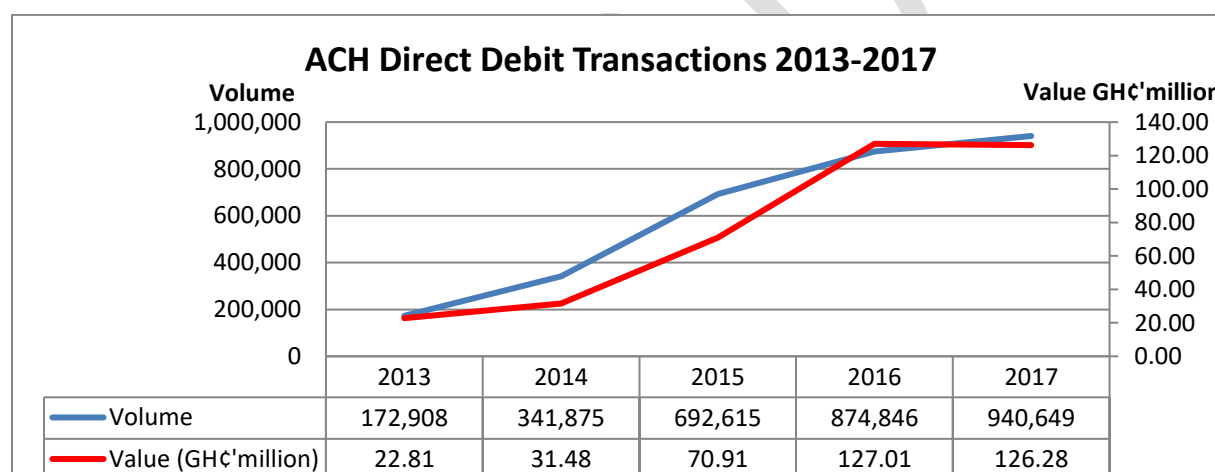
Total volume of direct debit transactions increased by 65,803 or 7.52 percent from 874,846 in 2016 to 940,649 in 2017. However, the value of transaction decreased by GH¢0.73 million or 0.57 percent to GH¢126.28 million. The average value per

transaction in 2017 also decreased to GH¢134.25 compared with GH¢145.18 in 2016 (see Table 7 and Chart 5).

Table 7: GACH Direct Debit Transactions

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Volume	341,875	692,615	874,846	940,649	65,803	7.52
Value (GH¢'million)	31.48	70.91	127.01	126.28	(0.73)	(0.57)
Average value per transaction GH¢	92.08	102.38	145.18	134.25	(10.93)	(7.53)

Chart 5: GACH Direct Debit Transactions



4.5 E-Zwich Transactions

E-zwich is an interoperable biometric smart card payment system which offers a suite of electronic payments and banking services accessible from a Point of Sales (POS) terminals or an ATM. These services include payments at merchants' point of sale (purchases), withdrawal of cash, deposit onto the card and transfer of funds. The e-zwich system continues to facilitate payments to cocoa farmers, nurses and teachers and national service personnel's salaries.

The number of e-zwich card holders of 2,364,456 in December 2017 showed an increase of 25.90 percent over 2016 position of 1,878,044. Total volume of e-zwich transactions increased by 55.95 percent; from 5,365,085 in 2016 to 8,367,017 in 2017. Similarly, total value of transactions in 2017 grew by 45.22 percent to GH¢3,431.49 million (see Table 8 and Chart 6).

The increasing trend in e-zwich transactions could be attributed to Government's use of the system to pay caterers of 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 means of ensuring efficiency in payments and eliminating waste in public expenditure.

The volumes and values of e-zwich cash withdrawals exceeded other e-zwich products or services such as purchases, cash deposits and money transfers (see Charts 7 and 8). This trend suggests that cardholders prefer withdrawing cash from ATMs and POS terminals to pay for goods and services instead of using the system to transfer monetary value to merchants and beneficiaries to discharge financial obligations. The cardholders' preference for cash could be attributed to inadequate merchant e-zwich point of sales devices and lack of awareness of other e-zwich payment options.

Table 8: E-zwich Transactions

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Total Number of Cards Issued	1,084,121	1,369,369	1,878,044	2,364,456	486,412	25.90
Cards with Value (% of total)	38.72	44.8	48.5	50.71	2.21	4.56
Value on Cards (GH¢'million)	8.76	29.02	53.57	74.43	20.86	38.94
Average Value Per Card (GH¢)	20.9	47.3	58.79	62.07	3.28	5.58
Volume of Transactions	625,167	2,251,101	5,365,085	8,367,017	3,001,932	55.95
Value of Transactions (GH¢'million)	272.7	922.9	2,362.96	3,431.49	1,068.53	45.22

Chart 6: E-Zwich Transactions

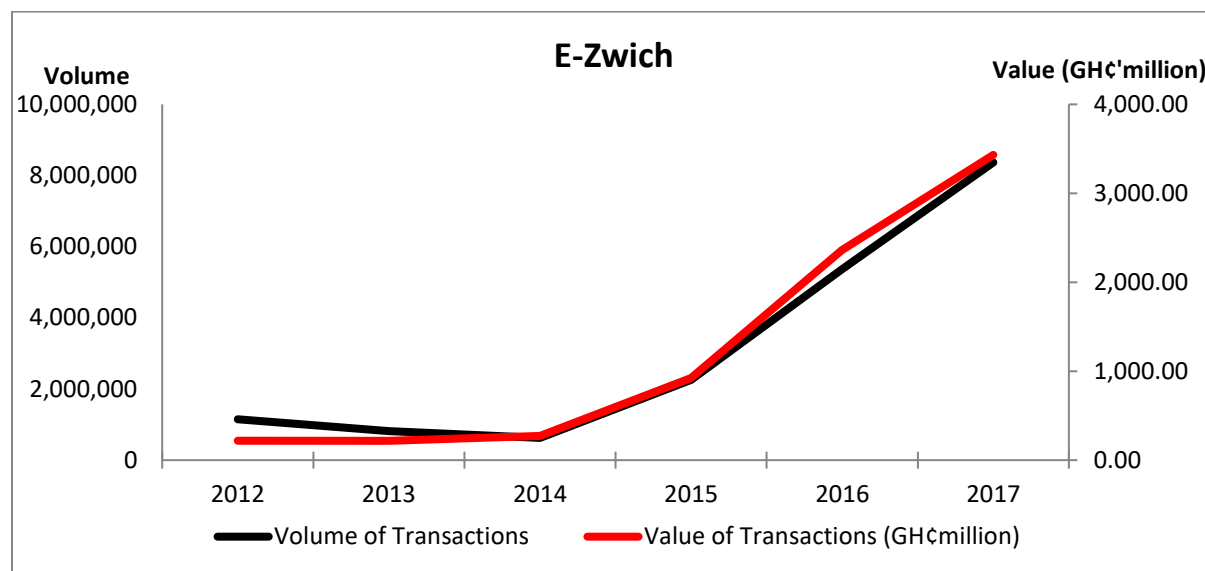


Chart 7: E-zwich product performance-Value

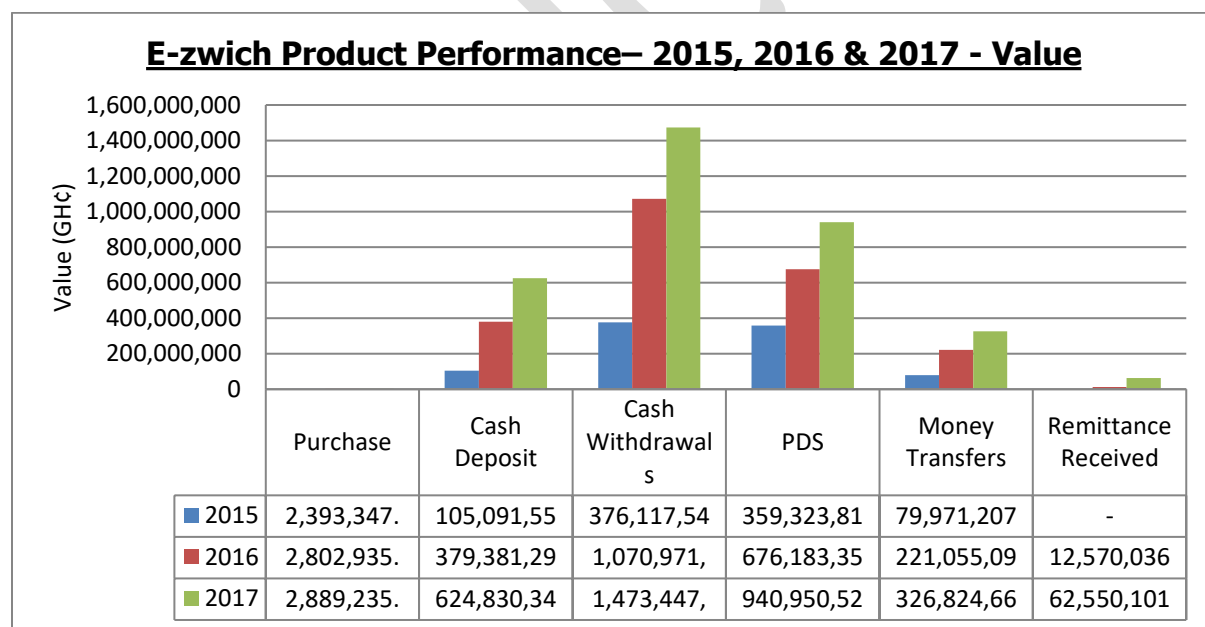
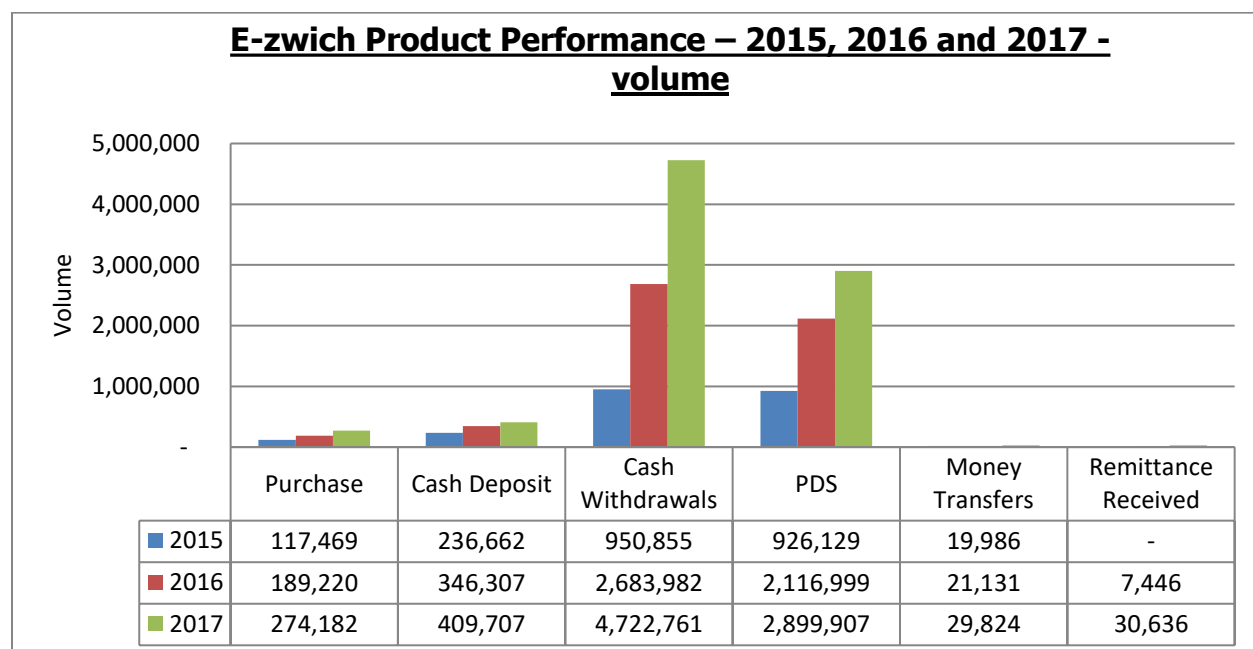


Chart 8: E-zwich product performance -Volume



4.6 Gh-Link™ (National Switch)

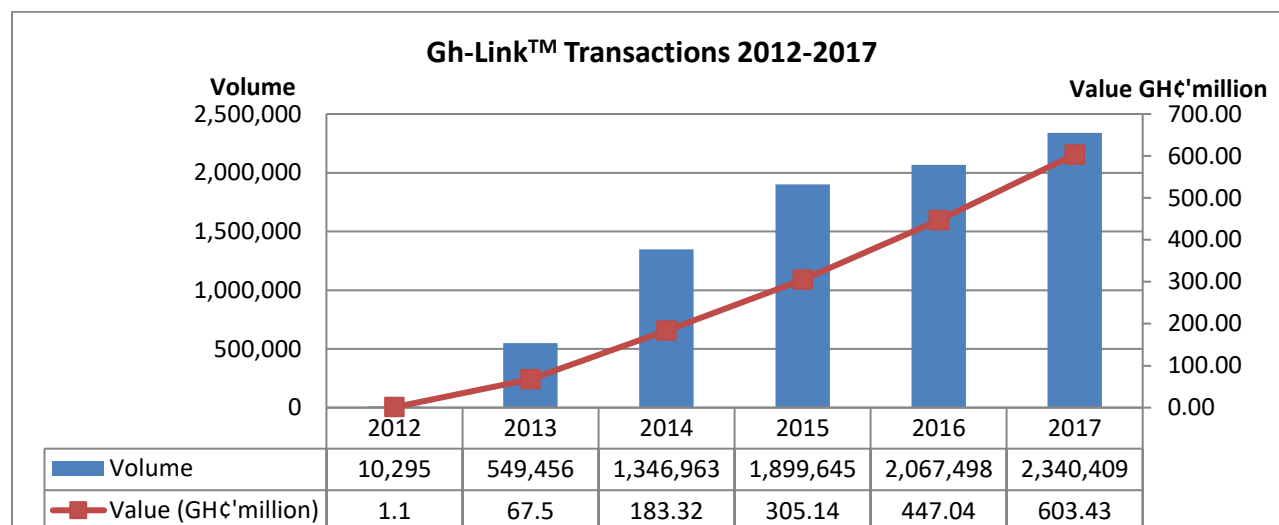
Gh-link™ as an interbank switching and processing system interconnects financial institutions and allows domestic cardholders to transact on any ATM or point of sales of member institutions.

The gh-link™ recorded 2,340,409 total volume of transactions in 2017 with a value of GH¢603.43 million compared with 2,067,498 with a value of GH¢447.04 million in 2016. (see Table 9 and Chart 9). While ATM withdrawal was the main driver of gh-link transactions, POS transactions recorded significant growth of 53.17 percent, from 1,121 transactions in 2016 to 1,717 in 2017.

Table 9: Gh-Link™ Transaction

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Volume	1,346,963	1,899,645	2,067,498	2,340,409	272,911	13.20
Value (GH¢'million)	183.32	305.14	447.04	603.43	156.39	34.98
Average value per transaction GH¢	136.1	160.63	216.22	257.83	41.61	19.25

Chart 9: Gh-Link™ Transactions



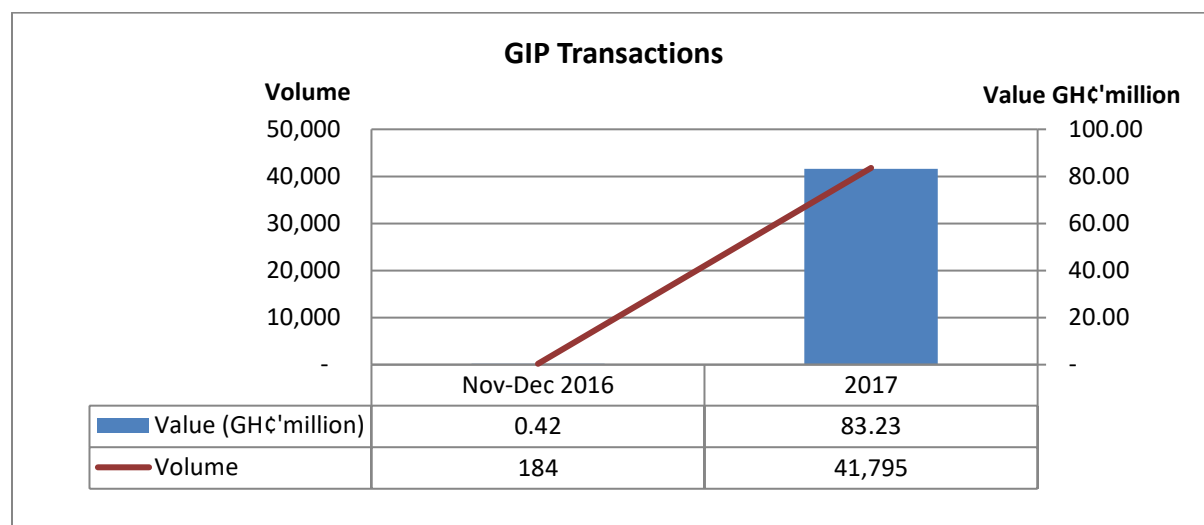
4.7 GhIPSS Instant Pay (GIP)

GhIPSS Instant Pay (GIP) which is on gh-link Platform allows payments to be sent across financial institutions electronically from a sender's bank account to a beneficiary bank account instantly. A total of 41,795 GIP transactions with a value of GH¢ 83.23 million were effected in 2017, compared with 184 transactions with value of GH¢ 0.42 million in 2016. (see Table 10 and Chart 10) The growth in GIP transactions was mainly on account of third-party-payment gateways transactions and transactions from international remittance companies. The membership on the GIP platform comprises 28 Sending Institutions (including 3 remittance companies and 3 third party companies) and 24 Receiving Institutions (made up of 22 Universal banks and 2 savings and loans companies)

Table 10: GIP Transactions

Indicators	Nov-Dec 2016	2017
Volume	184	41,795
Value (GH¢'million)	0.42	83.23

Chart 10: GIP Transactions



4.8 Mobile Money Services

The mobile money ecosystem continued to grow since the passage of the Electronic-money Issuers and Agents Guidelines in July 2015. Three (3) Mobile Money Operators made up of MTN Mobile Financial Service, AirtelTigo Money, and Vodafone Cash offered mobile money services during the year under review on account of Airtel and Tigo merger in November 2017.

The number of registered mobile money accounts as at end-December, 2017 was 23,947,437 showing a growth rate of 21.34 percent over the 2016 position of 19,735,098. Similarly, the number of active mobile money accounts increased by 33.75 percent from 8,313,283 in 2016 to 11,119,376. The active registered agents of the three (3) mobile money operators (MMOs) in 2017 stood at 151,745 and showed a growth rate of 41.27 percent over the previous year's position of 107,415. Total value of mobile money transactions of GH¢155,844.84 million in 2017 showed a 98.51 percent increase over the 2016 position of GH¢78,508.90 million (see Table 11 and Chart 11).

The total float balances which refer to the cash component held in banks to cover mobile money in circulation increased by 84.59 percent from GH¢1,257.40 million in December 2016 to GH¢2,321.07 million in 2017. (see Table 11 and Chart 12).

Total interest paid on float balances to holders of mobile money wallets in 2017 in line with paragraph 10(5) of the Electronic Money Issuers Guidelines (2015) was GH¢57.68

million; representing growth of approximately 132.67 percent compared to the 2016 position of GH¢24.79 million.

The growth in mobile money sub-sector could be attributed to efficiency and convenience of the service, expansion in agent networks, introduction of innovative products and services and creation of enabling regulatory environment.

Table 11: Mobile Money Services

Indicators	2014	2015	2016	2017	2017 change	2017 Growth (%)
Total number of mobile voice subscription (Cumulative) ¹	30,360,771	35,008,387	38,305,078	37,445,048*	(860,030)	(2.25)
Registered mobile money accounts (Cumulative)	7,167,542	13,120,367	19,735,098	23,947,437	4,212,339	21.34
Active mobile money accounts ²	2,526,588	4,868,569	8,313,283	11,119,376	2,806,093	33.75
Registered Agents (Cumulative)	26,889	79,747	136,769	194,688	57,919	42.35
Active Agents ³	20,722	56,270	107,415	151,745	44,330	41.27
Total volume of transactions	113,179,738	266,246,537	550,218,427	981,564,563	431,346,136	78.40
Total value of transactions (GH¢'million)	12,123.89	35,444.38	78,508.90	155,844.84	77,335.94	98.51
Balance on Float (GH¢'million)	223.33	547.96	1,257.40	2,321.07	1,063.67	84.59

*Total Mobile Voice Subscription figure is as at September, 2017 (NCA)

¹ Source: National Communications Authority (NCA)

² The number of accounts which transacted at least once in the 90 days prior to reporting

³ The number of agents who transacted at least once in the 30 days prior to reporting

Chart 11: Mobile Money Transactions

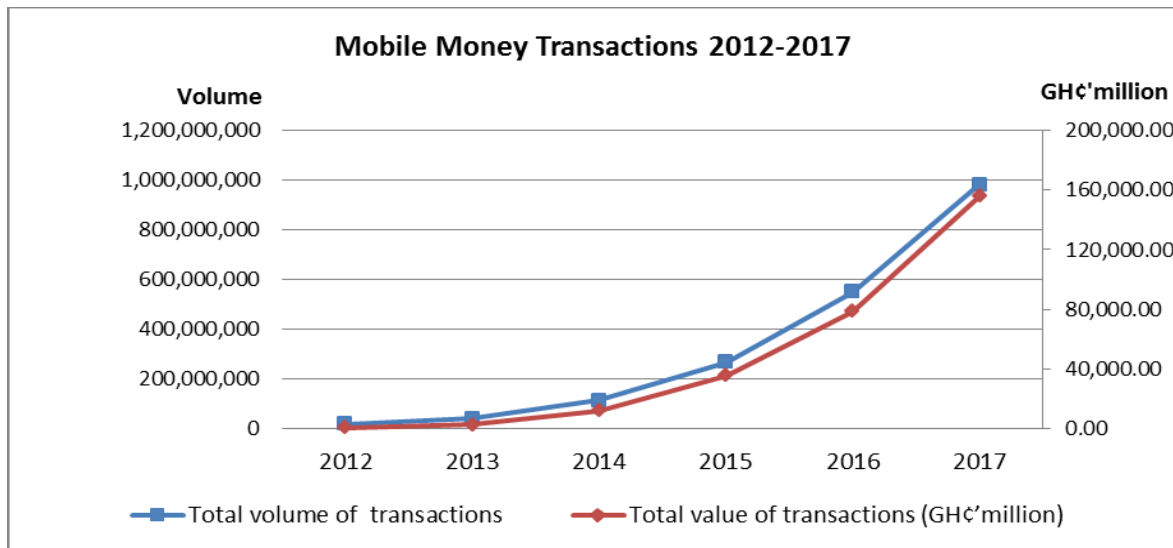
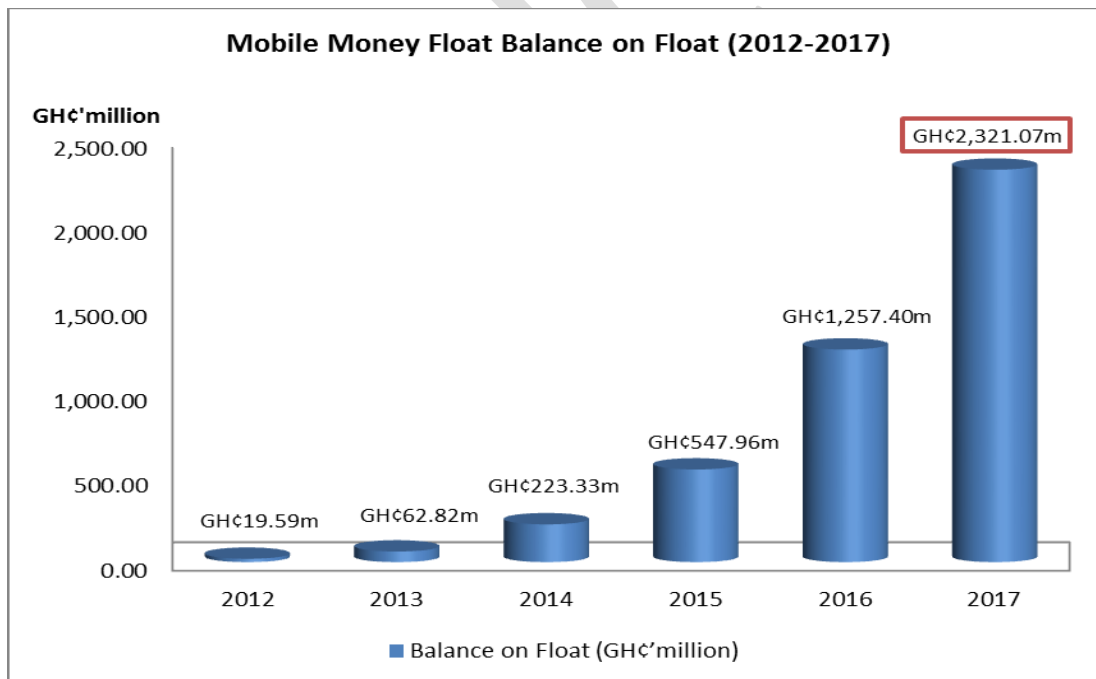


Chart 12: Mobile Money Float Balance



4.9 The Financial Sector

The competition in the financial sector especially the banking sub-sector is underpinned by introduction of innovative products and services.

The banking sector remained competitive and solvent despite the revocation of licenses of UT Bank Ltd and Capital Bank Ltd in August 2017 on account of severe impairment in loan asset and breakdown in corporate governance.

Improved macroeconomic environment in 2017 culminated in various strategic alliances being established between banks and Financial Technology Firms.

4.9.1 Banks and Other Financial Institutions

Distribution of banks, specialized deposit-taking institutions (SDIs) and payment service providers for the period 2014 to 2017 is provided in Table 12.

Table 12: Regulated Financial Service Providers

Regulated Financial Institutions	2014	2015	2016	2017	(abs) Change 2017
Licensed Banks (DMBs)	28	29	33	34	1
Bank Branches	967	1,173	1,341	1,491	150
Rural and Community Banks (RCBs)	138	139	141	141	-
Rural and Community Banks Agencies*		887	895	910	15
Non-Banking Financial Institutions	60	62	64	71	7
Micro Finance Institution (MFI)	503	546	564	566	2
Mobile Money Operators	4	4	4	3	-1
Active mobile money agents	20,722	56,270	107,415	151,745	44,330

**Source: ARB Apex Bank Ltd (Provisional). Abs is absolute.*

The SDIs comprised seventy-one (71) Non-Bank Financial Institutions (NBFIs) and five hundred and sixty-six (566) Micro-Finance Institutions (MFIs) at end-December 2017 compared with sixty-four (64) NBFIs and five hundred and sixty-four (564) MFIs at end-December, 2016. The number of active mobile money agents increased from 107,415 in December, 2016 to 151,745 agents at end- December, 2017 (see Table 12 above).

The number of universal bank branches went up from 1,341 in December, 2016 to 1,491 at end-December 2017 showing an increase of 11.19 percent. Similarly, the number of RCBs agencies went up from 895 at end-December 2016 to 910 at end-December, 2017.

4.9.2 Internet and Mobile Banking

Number of registered internet banking customers declined by 2.65 percent from 962,487 in 2016 to 936,965 in 2017. The number of registered mobile banking customers also decreased by 2.97 percent from 2,175,644 in 2016 to 2,110,984 in 2017.

The value of Internet Banking transactions however showed an increase of 43.66 per cent to GH¢9.74 billion in 2017 compared with the 2016 position of GH¢6.78 billion. Mobile Banking transaction value was GH¢1.50 billion in 2017 compared with GH¢357.38 million in 2016 and represented a growth of 320.10 per cent. (See Table 13).

Table 13: Internet and Mobile Banking

		2015	2016	2017	Growth (%)
Internet Banking	Number of registered Customers	840,532	962,487	936,965	-2.65
	Volume of transactions	999,439	2,705,191	2,437,785	-9.88
	Value of transactions (GH¢)	2,286,702,322	6,779,205,499	9,739,336,941	43.66
	Average volume of transactions per day	5,461	7,391	6,679	-9.64
Mobile Banking	Number of registered customers	1,449,374	2,175,644	2,110,984	-2.97
	Volume of transactions	5,440,387	6,821,838	7,036,285	3.14
	Value of transactions (GH¢)	178,588,021	357,383,111	1,501,372,536	320.10
	Average volume of transactions per day	29,729	18,639	19,277	

4.9.3 Automated Teller Machines (ATMs) and Points of Sales (POS)

The cumulative number of ATMs deployed by banks at end-December 2017 was 2,044 showing an increase of 6.02 percent over 2016 position of 1,928. The number of POS

terminals went up by 13.15 percent from 6,501 at end-December 2016 to 7,356 in December 2017, (See Table 14).

The regional distribution of ATM and POS as at end-December 2017 is provided in Table 15.

Table 14: Automated Teller Machines and Points of Sales

	2015	2016	2017	(abs) Change 2017	Growth (%)
Automated Teller Machines (ATMs)	912	1,928	2,044	116	6.02
Point of Sales (POS) terminals	4,841	6,501	7,356	855	13.15

Table 15: Regional Distribution of ATMs and POS Terminals at end-December, 2017

REGIONAL DISTRIBUTION	ATM	POS
Greater Accra Region	1,194	5,234
Ashanti Region	273	655
Western Region	152	334
Central Region	99	277
Brong Ahafo Region	84	203
Eastern Region	75	243
Northern Region	75	131
Volta Region	52	122
Upper East Region	24	81
Upper West Region	16	76
<i>Total number deployed (Cumulative)</i>	<i>2,044</i>	<i>7,356</i>

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

4.9.4.1 Debit Cards

The total number of debit cards issued by banks as at December 2017 was 5,953,484 showing a growth of 9.32 percent over 5,446,030 cards in December 2016.

International scheme cards of 2,912,256 constituted 48.92 percent of the total issued debit cards compared with banks proprietary cards of 3,041,228 which constituted 51.08 percent of the total issued debit cards. The international scheme cards increased by 30.98 percent while banks proprietary cards declined by 5.63 percent. (See Table 16)

4.9.4.2 Credit Cards

The number of credit cards issued as in 2017 increased by 59.47 percent from 9,217 cards in December 2016 to 14,698 cards. The increase in the issued credit cards was on account of additional banks authorized by the Bank of Ghana to issue credit cards. All the credit cards issued by the five (5) banks were international scheme cards (See Table 16).

4.9.4.3 Prepaid Cards

The total number of prepaid cards issued increased by 46.02 percent from 58,907 in 2016 to 86,017 at end December 2017 (See Table 16).

Table 16: Electronic Payments Cards

Type	2015	2016	2017	Growth (%)
Debit Cards:	4,304,097	5,446,030	5,953,484	9.32
Banks own Proprietary Cards	2,209,768	3,222,647	3,041,228	(5.63)
International Scheme Cards	2,094,329	2,223,383	2,912,256	30.98
Credit Cards:	5,438	9,217	14,698	59.47
Banks own Proprietary Cards	-	-	-	-
International Scheme Cards	5,438	9,217	14,698	59.47
Prepaid Cards:	44,250	58,907	86,017	46.02
Banks own Proprietary Cards	-	-	-	-
International Scheme Cards	44,250	58,907	86,017	46.02

4.9.5 Retail Payment Instruments

Retail payment instruments facilitate transfer of funds and are broadly grouped into two namely cash comprising banknotes and coins and cashless instruments. Cashless

retail payment instruments are either paper-based instruments such as cheques and credit transfers usually initiated through the use of paper forms or electronic payment instruments issued by payment service provider (PSP). PSPs consist of banks, SDIs, and electronic money issuers. Electronic payment instruments are also classified into three categories namely electronic funds transfer-based instruments which are direct account-to-account credit or debit transfers; payment card-based instruments such as credit card, debit card and prepaid card and electronic money-based instruments for instance mobile money. The value of retail payments (excluding cash) increased by 43.18 percent to GH¢381.43 billion in 2017 from GH¢266.39 billion in 2016. The growth in the value of the retail payment instruments was on account of increases in the value of mobile money services (98.50 percent), and e-zwich (45.34 percent). (See Table 17)

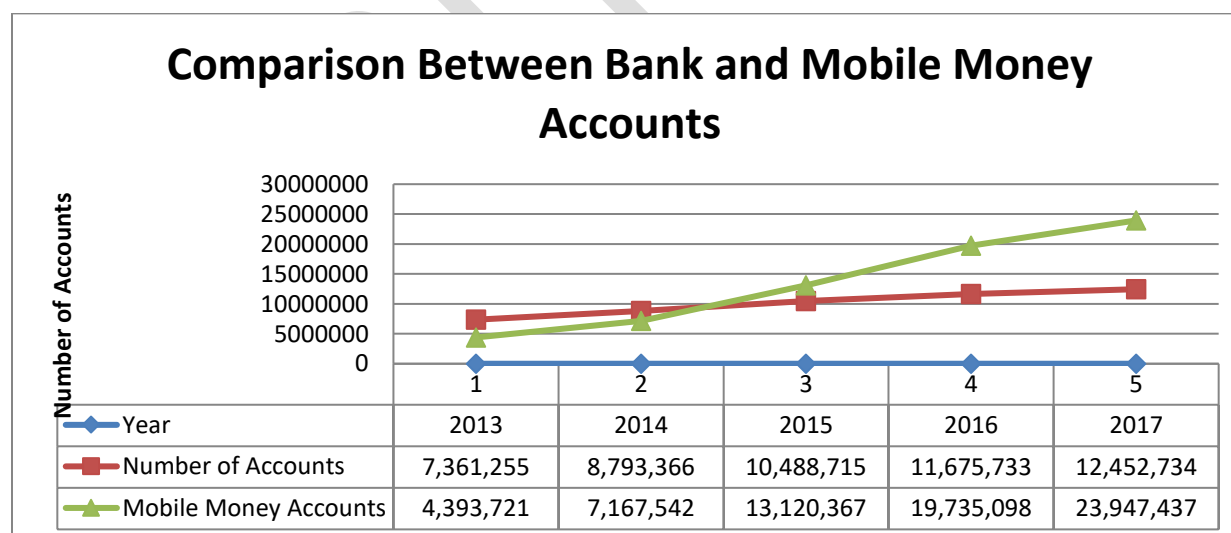
4.9.6 Use of non-cash payment instruments

Mobile money has overtaken cheques as the main non-cash retail payment instrument with 981.6 million volume of transactions, followed by Debit Card (60.4 million), e-zwich (8.4 million), cheques (7.3 million) and Direct Credit Transfer (6.1 million) in 2017. However, in terms of value of transactions undertaken in 2017, cheques continued to maintain its lead with GH¢179.6 billion while mobile money followed closely with GH¢155.8 billion (see Table 17).

Table 17: Retail Payment Instruments

	2016			2017		
Instrument	issued	Volume	Value (m)	issued	Volume	Value (m)
Cash						
Cheque		7,309,406	152,390.42		7,334,460	179,555.47
Direct Credit Transfer		5,242,610	19,245.65		6,061,093	24,327.26
Direct Debit Transfer		874,846	127.01		940,649	126.28
Debit Card	5,446,030.00	46,456,021.00	13,582.67	5,953,484.00	60,382,177.00	17,785.18
Credit Card	9,217.00	138,037.00	70.09	14,698	185,101	100
Prepaid Card	58,907.00	312,143.00	103.26	86,017	472,071	256
E-zwich	1,878,044	5,365,085	2,362.97	2,364,456	8,367,017	3,431.49
e-money (mobile money)	136,769	550,218,427	78,508.90	194,688	981,564,563	155,844.84
Grand Total	7,528,967.00	615,916,575.00	266,390.96	8,613,343.00	1,065,307,131.00	381,426.38

The preference for mobile money services over traditional bank services persisted during 2017. The number of mobile money accounts increased to 23.9 million in 2017 compared with 12.5 million bank accounts in 2017 (see Chart 13).

Chart 13: Comparison between Bank and Mobile Money Accounts

Chapter 5

5.0 Institutional view of Electronic Money and roles of Financial Technology firms

This section discusses the role of electronic money and Financial Technology Firms (FinTechs) in fostering financial inclusion.

5.1 Background

In March 2014, the Bank launched a Strategic Payments Roadmap which provided the foundation on which further enhancement and payment services was to be built to achieve the twin goals of cash lite economy and greater financial inclusion. The Strategy identified mobile money and deepening of the payment system as critical elements in the Ghanaian retail payments and also called for strategic relationship between the national telecommunication authority and the Bank. The document also requested for all forms of mobile payments to be regulated by the Bank and for legislation should be put in place to guide orderly development of the sub-sector.

The Bank issued Branchless Banking Guidelines in 2008 with the view to increasing financial access to the unbanked. Unfortunately banks which were to lead this agenda had low motivation to scale up the agency network on account of the micro nature of deposits involved and the cost of deployment. The Guidelines also stated banks were to partner with telecommunication companies to deliver these services. Telcos were prepared to deliver the services however some banks were reluctant to foster these partnerships fearing that telcos would take over their businesses.

In 2015 the Bank issued the Electronic Money Guidelines with the broad objective to allow non-bank entities to scale up agency network for mobile money in partnership with the banks. This Guideline allows telcos to own agency network.

Some banks unwillingness to lead the mobile money agency network under the Branchless Banking Guidelines (2008) which was rectified under the Electronic Money Guidelines 2015 paved way for Telcos to increase mobile money operations and to scale up agency network.

Some universal banks have submitted applications to also issue electronic money under the Payment Systems and Services Bill 2017 which is currently before cabinet. The passage of the Bill is expected to break the monopoly of telcos and allow other payment services providers to also offer varied payment services.

Financial technology firms (Fintechs) provided services to the banks and specialized deposit institutions before the passage of the Branchless Banking Guidelines (2008) and the Electronic Money Issuers Guidelines (2015). The Payment Systems Act 2003 (Act662), Banks and Specialised Deposit Taking Institutions Act 2016 (Act930) and the Guidelines however did not address the operations of FinTechs in the financial and payment systems. FinTechs have partnered with banks and other financial institutions to provide innovative financial and payment services to the public and were initially providing back-end applications to financial institutions to enhance efficiency but have extended their services to front end services. The emergence of mobile money has also led to increase in the number of FinTechs providing various services to banks.

5.2 Policy Issues for Adoption of Mobile payments and Entry of Non-Bank entities into the Payment System

A review of the Ghanaian regulatory framework for issuers of electronic money and payment service providers revealed that the payment system was developing slowly than expected. The main causes of this slow development were identified as the rigidity in the application of the Branchless Banking Guidelines (2008) and uncertainty over application of new business models. A vibrant regulatory framework for issuers of electronic money and other payment service providers was identified to provide support for Government's objective of reducing payroll fraud and to digitize revenue collection and other payments.

Digitization of payments will also provide jobs for the youth and an example was the three thousand (3,000) jobs announced by the President in his 2018 State of the Nation address. These job opportunities were created by Ecobank (Ghana) Limited

through a mobile based application product submitted by the department which was approved by Management.

The Payment Systems Act, 2003 (Act 662) provides for the establishment, operation and supervision of electronic and other payment, clearing and settlement systems. The Act also provides for the rights and responsibilities for transacting and intermediating parties. However, Act 662 failed to make provision for emerging payment streams such as electronic money, prepaid cards, credit cards, electronic platforms, payment instruments, Web acquiring, Automated Teller Machines and FinTechs. The rapid change in technology has also rendered Act 662 inadequate to address risks emanating from these new forms of payment streams.

The emergence of new payment streams and the Bank's issuance of various guidelines to address risks emanating from these new forms of payment streams have necessitated review, amendment and consolidation of the Payment Systems Act, 2003 (Act 662) with the Electronic Money and Agents Guidelines, other Directives and Notices issued on the subject to address the current challenges and gaps. The Payment Systems and Services Bill, the new proposed regulatory framework for the payment system also requires formulation of a Cyber Security Regulation.

The Bill thus provides for non-banks to establish, own and manage electronic money business in the form of separate entity to be supervised by the Bank of Ghana. It also allows for only licensed FinTechs to continue to provide services for banks after its passage.

The high cost of building and operating traditional bank branches has been a major obstacle for banks to reach the underprivileged customers with financial services. Brick-and-mortar branches are expensive for banks to maintain in rural and deprived communities. Similarly the cost of travelling to urban areas is also considered high for many rural customers. However, the prevalence of mobile phones and other electronic devices made it convenient to expand access to financial services. The policy direction therefore is to promote availability and acceptance of electronic money and other forms of payment services as retail payment medium.

Mobile money pooled accounts are typically made up of several mini and micro accounts. The cost to banks in mobilizing these funds is prohibitive on account of processing of each of these accounts and getting access to these accounts types through the traditional banking framework. Banks are the custodian of these pooled funds and in aggregate term these micro balances provide a pool of investible funds for banks. The pooled mobile money balances are part of the total money supply reported under banks current account deposits. Total mobile money float balances as at December 2017 was GH¢2.3billion compared with GH¢1.3 billion in December 2016. Similarly the number of registered mobile money accounts was 23,947,437 in December 2017 compared with 19,735,098. The balances on these accounts are used for various transactional purposes including cash-out, purchases, bill payment and as a store of value. When used for purchases, the overall total banking system float does not change however; individual float accounts may experience marginal fluctuations depending on client transactions of the various e-money issuers. The mobilized funds through mobile money therefore help to reduce money in circulation and support the Bank's monetary policy effort.

The Payment Systems and Services Bill 2017 also seeks to promote innovation in the design of new secure electronic money products and payment services and also engender competition in the electronic money business. The Bill is also expected to open up the electronic money space to promote financial inclusion and help reduce poverty.

The Bill provides for the Bank of Ghana to have overall supervisory and regulatory authority in all matters relating to payment, clearing and settlement systems and requires that it continues to:

- (a) promote the safety and soundness of all payment, clearing and settlement systems;
- (b) regulate the issuance of electronic money, payment instrument, payment service providers and electronic commerce platforms;

- (c) promote financial inclusion through supervision of payment and settlement systems without risking the safety and soundness of the financial system;
- (d) establish or facilitate financial market infrastructure in the interest of the public;
- (e) ensure that financial services are extended beyond traditional branch-based channels to the domain of every day transactions;
- (f) ensure that electronic money is only provided by authorised financial institutions regulated under the Banks and Specialised Deposit-Taking Institutions Act, 2016 (Act 930) and duly licensed non-bank entities which are engaged solely in the business of electronic money and activities related or incidental to the business of electronic money;
- (g) ensure that customers of electronic money issuers benefit from adequate transparency, fair treatment and effective recourse mechanism;
- (h) deal with unlawful or improper practices of payment service providers and electronic money issuers;
- (i) formulate, monitor and review policies on the payment system;
- (j) determine general and individual payment conditions, standards, rules or procedures under the Act and any other implementing measures regarding a licensee or an authorised person and its activities to ensure that conditions, standards, rules or procedures are complied with;

- (k) issue authorisation to banks and specialised deposit-taking institutions;
- (l) issue licences to non-bank financial institutions;
- (m) grant approval to foreign entities with respect to establishment of representative offices ; and
- (n) undertake any other payment system or product the Bank of Ghana may determine.

5.3 Financial Technology firms roles in the Payment System

Financial technology firms (FinTechs) provided services to banks and specialized deposit institutions before the passage of the Electronic Money Issuers Guidelines (2015).

A survey conducted by the department revealed that twenty-one (21) banks are currently in various levels of partnership or agreements with about seventy-one (71) financial technology firms offering financial services to their clients. The scope, intent and operations of these financial technology firms however have neither been under any legal nor regulatory oversight. The Bank on account of these regulatory gaps has prepared the Payment Systems and Services Bill which is yet to be passed into law. This Bill when passed into law would also address the gaps which were identified in the Electronic Money Issuers Guidelines (2015), Agents Guidelines (2015) and the Payment Systems Act 2003 (Act 662).

The Bill therefore focuses on ensuring that only FinTechs which have met the necessary regulatory and legal requirements are allowed to continue to provide these services to the financial sector on account of the potential risks they may pose to the sector when left unregulated. A payment service provider for instance a FinTech is required to meet various conditions before being issued with a licence by the Bank to

continue to operate in the financial and payment systems. Some of these conditions FinTechs are required to meet are discussed in the next section:

5.3.1 Technology, security and controls

A payment service provider is required to meet the following conditions under technology, security and control systems:

- A tested technology system which is equipped with fraud monitoring and detection tools;
- A valid third-party certification from a reputable certification authority or body in line with relevant standards determined by the Bank of Ghana;
- A system which is capable of interoperating with other payment systems in the country when required; and
- A cyber-security policy, where applicable.

5.3.2 Governance arrangements

A payment service provider under governance arrangement is required to meet the following conditions:

- A payment service provider is required to have a board of directors with a minimum of five members, at least three of whom, including the chief executive officer, shall be resident in the country.
- Membership of the board of directors of a payment service provider is required to adequately reflect the balance of interests represented by the payment service provider.
- A member of a board of directors is required to be a fit and proper person and have the necessary experience and qualifications to perform the required functions.
- Key management personnel of a payment service provider are required to be responsible for maintaining an effective system of operation with regard to payment services.
- A payment service provider is required to disclose to the Bank of Ghana details of the external auditors of that payment service provider and any relation to the directors, key management personnel or shareholders.

5.3.3 Principles of consumer protection

A payment service provider or an agent of the payment service provider is required to adhere to universal principles on consumer protection including the following:

- Equitable, honest and fair treatment of all customers, especially vulnerable groups such as the illiterate, women, persons with disability and the underprivileged;
- Transparency and the disclosure of clear, sufficient and timely information on the fundamental benefits, risks and terms of any product or service offered in an objective and accessible form;
- Sufficient and accessible information to customers on the rights and responsibilities of the customers;
- Protection of customers' privacy, tangible and intangible assets related to the service including the personal details, financial information and transaction data of the customer;
- Responsible business conduct of all staff and authorised agents;
- Adequate systems and processes for complaints handling and redress; and
- Any other directive on consumer protection that the Bank of Ghana may issue.

5.4 Roles of FinTechs in the Electronic Money Space

A survey of banks with twenty one (21) reports received by the department revealed that about seventy-one (71) FinTechs are currently providing the following services in the payment and financial systems:

- Electronic Payment Services including transflow, mobile payments, internet banking services and USSD
- Postilion switch which drives the ATM and card management system, SMS and credit top-up purchase vouchers.
- Electronic payment solution for ACH and cheque codeline clearing system
- Card printing, personalization, issuance, hosting and processing
- Electronic statements, transaction alerts and SMS notifications

- Support services for banking software and investment applications for example T24, amplitude banking application and BRIMS
- Wide Area Network and Internet Services or Local Area Network (LAN) and UPS solution services
- National switch and biometric smart card payment system (E-zwich) services
- National switching and processing system
- Data storage and archiving,image decision and viewer
- CCTV, Access Control Systems
- Bank Prepayment vending system
- VSAT
- Anti-virus services
- Power inverter system
- Solarwinds, Dameware and Remote Support
- Provision of investment application
- Amplitude banking application
- Card pin mailer

5.5 Additional Risks and Benefits associated with emergence of Financial Technology Firms in the Financial and Payment Systems

Financial Stability Board (2017) identified that emergency of technology-enabled innovation in financial services (FinTech) provides both opportunities and risks to financial stability and policymakers. It enjoins regulators and supervisors to assess adequacy of their regulatory frameworks with the objective of harnessing the benefits of FinTechs while mitigating the risks.

The paper finds that technology enabled innovation in financial services provides benefits for economic growth and financial stability through many transmission channels including limiting financial frictions. FinTechs also promote decentralization and diversification which can dampen the effects of financial shocks in some situations. For instance failure of a single or type of institution is less likely to shut down market on account of availability of other types of providers of financial services. FinTechs also

promote transparency by reducing information asymmetries and enables risks to be adequately assessed and better priced. It promotes creation of financial instruments with exposure to specific risks. Operation of FinTechs also promotes access to, and convenience for financial service that affects the financial inclusion of households and businesses including small and medium enterprises. This function is important to support sustainable economic growth and provide diversification of exposure to investment risk.

The potential of FinTechs to undermine financial stability may stem from both micro and macro financial risks. Some of these micro financial risks include maturity and liquidity mismatches, leverage, governance or process control, cyber risks, third party reliance and business risks of critical financial market infrastructure. Macro-financial risks which are system wide vulnerabilities that may amplify shocks to the financial system and create probability of financial instability on account of operations of FinTechs include contagion, excess volatility and procyclicality.

Some of the risks associated with the emergence of FinTechs in the Ghanaian financial and payment systems include compliance with data privacy, data security, AML/CFT standards, cyber security and consumer protection issues. FinTechs currently are already providing various services to the financial institutions and the risks they pose have not been adequately incorporated into the supervisory framework of the Bank. Similarly FinTechs have not been recognized as weak link in the oversight framework for financial institutions

The proposed Payment Systems and Services Bill 2017 provides amendment to the existing Payment Systems Act 2003 (Act662) to permit electronic money issuers and payment service providers to undertake the following services:

- clearing of payment instructions among financial and non-financial institutions;
- settling of obligations arising from the clearing of payment instructions;
- transfer of funds from one account to another using any electronic means;
- transfer of electronic money from one electronic device to another;

- provision of technological services to facilitate switching, routing, clearing and data management;
- facilitation of interoperability of payment systems and services among payment systems providers;
- provision of electronic payment services to the unbanked and under-banked population;
- establishing a payment clearing house;
- provision of financial communication network;
- issuing of electronic payment instruments;
- issuing of prepaid cards, credit cards and debit cards;
- payment system aggregation function;
- provision of any electronic platform for payment or receipt of funds;
- printing of non-cash paper payment instrument; or
- any other service prescribed by the Bank of Ghana.

There are no provisions in the Payment Systems and Services Bill 2017 for licensing of digital currency issuers such as virtual currencies (Bitcoin) since issuance of currency is a constitutional matter. The passage of the Bill would however help to break the monopoly of the subsidiaries of telecommunication companies which are currently the only issuers of electronic money and bring the operations of authorized FinTechs under regulatory purview.

The main benefits associated with bringing FinTechs, some which are already providing varied services to banks, under regulatory purview are as follows:

- Adherence to cyber security regulation to be issued by the Bank
- Observance of technology, security and controls standards
- Consumer protection
- Employment generation
- Enhances knowledge on overall risks of the financial sector
- Data protection issues
- Anti-money laundering considerations

The proposed Payment Systems and Services Bill (2017) will ensure that only FinTechs that meet the acceptable standards and other regulatory requirements are permitted to continue to offer services to the banks. The overall objective is to help minimize risks in the financial and payment systems. Currently the mechanisms in place are not comprehensive to identify measure, monitor and manage the risks that FinTechs may pose to the sector on account of technological development.

5.6 Experiences of Some selected Countries with regard to licensing of Payment Service Providers

The Kenya National Payment System Act 2014, Legislative Instrument Supplement No. 43 provides for licensing of payment service providers who have met certain minimum conditions stipulated in section 4 (2). Tanzania National Payment Systems Act 2015 section 6 (1) also provides for list of objects that a payment service provider may be eligible to be licensed by the Central Bank of Tanzania. These objects provided under the Tanzania National Payment Systems Act are similar to the payment services allowed for licensed payment services providers under the proposed Payment Systems and Services Bill 2017. Rwanda in May 2016 drafted a regulation for licensing of non-bank entities to issue electronic money. The regulation provides detailed requirements for issuance of electronic money licence and conditions for creation of electronic money. The overall objectives of the regulation are to increase access to financial services and leverage on technology to deepen the payment systems landscape. Zambia also issued a directive on the issuance of electronic money with Gazette Number 416 of 2015.

Chapter 6

6.0 Payment Systems Risk and Oversight

This chapter reviews oversight of payment systems operations during the year.

6.1 Developments in Oversight and Risk Assessment

The Bank's responsibility for supervision and oversight of payment and settlement systems is set out in Section (1) of the Payment Systems Act 2003 (Act 662). The objective is to promote safe, sound and efficient payment system that promotes financial stability. While the rationale for oversight has not changed, increasing digitization of payments, dominance of GhIPSS, the growing role of financial technology firms in the payments landscape, emerging cyber risks concerns have necessitated changes in approach to oversight. Payment service providers and financial technology firms are required to be ISO27001 certified and also implement cyber security systems to enhance security. A number of payment service providers, including GhIPSS, have implemented the required standards, whilst others are at various stages of completion.

The Bank after the passage of the Payment and Services Bill 2017 is to issue licence for payments systems and give authorization for payment products after careful assessments against a risk-based framework. Approved systems were regularly supervised through off-site surveillance and on-site examination to ensure compliance with relevant laws, regulations, guidelines and licensing conditions. Non-compliance with any of the requirements was communicated to the system operator or service provider for rectification.

6.2 Assessment of Financial Market Infrastructures

The two (2) designated systemically important payment systems, Ghana Interbank Settlement (GIS) system and Ghana Interbank Payment and Settlement Systems (GhIPSS) were assessed with the IOSCO-CPFMI Principles of Financial Market Infrastructure (PFMI). Also, cyber security preparedness was assessed for appropriate

policy response to potential cyber security risks. Overall assessment indicated improvement in all relevant areas of operations, notably; efficiency, security and business resumption preparedness, and governance.

A self-assessment project plan was adopted and pre-implementation activities including sensitization of system operators commenced in 2017. Key activities of the project and self-assessment draft report are scheduled for 2018.

6.3 Participation in Ghana Interbank Settlement (GIS) Systems

Settlement of interbank payment obligations was effected in central bank money and on the GIS to enhance safety, efficiency and soundness of the payment system. Participation in the GIS is restricted to licensed clearing banks and mandatory for all Ghana Bankers Clearing House member banks. Interbank payments obligations arising from participation in the CCC, ACH, gh-Link, e-zwich and GIP were settled in the GIS. Clearing banks were required to keep an account with the Bank on the GIS system to facilitate settlement of interbank obligations. Settlement which is on gross basis and real time is meant to mitigate the threat of credit risk.

Two (2) banks ceased to be members of the GIS when the Bank revoked their licenses on account of insolvency. Three (3) new banks were licensed and admitted into the GIS system. The net number of bank participants during the year was thirty four (34). Other participants were the APB Apex Bank, which is the clearing bank for rural banks, and the Social Security and National Insurance Trust, the only non-bank participant.

6.4 Bankers Clearing House

Ghana Bankers Clearing House provided efficient cheque clearing, direct debit and credit transfers information exchange among participants. The infrastructure in the clearing house was upgraded to improve service delivery. Membership of two (2) banks was terminated on account of revocation of their banking licences by the Bank of Ghana, while three (3) new banks which were licensed by the Bank of Ghana were admitted into membership. The Bank ensured orderly exit of banks which licences

were revoked in line with the clearing house rules to avoid disruption to operations. The clearing house was not exposed to any financial risk from cessation of the two (2) banks in the clearing house since it is not a central counterparty, and its role is limited to facilitation of exchange of financial information among participants for settlement on the GIS.

6.5 Cooperation in Oversight

The Payment Systems Department co-operated with the Banking Supervision Department in supervisory issues, Financial Stability Department in AML/CFT issues, Information Technology Department in assessment of infrastructure and Legal Department on regulatory issues. The department also cooperated with the National Communications Authority (NCA) with respect to mobile money operations and National Identification Authority on the introduction of the National card.

6.6 National Switch

The National Switch, gh-link™, improved the efficiency of the payments card sub sector and fostered competition in the ATM and POS markets. Incentives system in the gh-Link scheme was assessed to be optimal and met the expectation of the various participants. System availability, scalability and response time were in line with existing benchmarks. EMV migration project for the gh-Link cards progressed in line with the agreed schedule and liability shift commenced on April 02, 2018.

6.7 Risk Assessment

A key activity in payment system oversight is identification of risks and assessment of their impact on the safety and efficiency of the payment system. These assessments were guided by the principles of financial market infrastructure of Committee on Payments and Market Infrastructure, International Organization of Securities Commission (CPMI-IOSCO) and adapted to different systems using risk-based approach. The following risk categories were identified and assessed.

6.8 Credit risk

Mandatory settlement of interbank payment obligations on the GIS mitigated potential credit risks in payments. Participants in the interbank payment systems assessed their

anticipated obligations and provided resources to ensure timely settlement. Expected shortfalls in participants own resources were met from borrowed funds from the interbank market. Collateralized intra-day liquidity was the last resort funding source for interbank payments obligation. Consequently, credit risk was within tolerable limit.

6.9 Liquidity Risk

Potential liquidity challenges in the payment system were adequately addressed through mandatory settlement of interbank payment obligations in central bank money and on the GIS. The GIS as a gross settlement system requires liquidity and the banks provided adequate liquidity in their settlement accounts to meet anticipated obligations. The central bank as a settlement institution also served as implicit guarantee of liquidity and boosted confidence in the interbank market thereby facilitating supply of loanable funds to banks in deficit. Banks also had the option of engaging in repo with the Bank of Ghana and lent or borrowed funds among themselves. These measures have worked well to enhance liquidity in the interbank payments market.

6.10 Operational Risk

The assessed operational risks of the payment system were generally within tolerable level. System availability was satisfactory, and business continuity measures have proved effective. Security certifications such as ISO 27001 and PCI DSS assisted in promoting a robust and resilient operational environment. Fraud at mobile money agent points was addressed by empowering consumers to initiate cash-out process.

6.11 Legal Risk

The payment system has a well-founded legal basis in both the Bank of Ghana Act 2002(Act 612) and the Payment Systems Act 2003(Act 662). Regulations, guidelines and policy statements were issued to the banks, SDIs and the general public to give effect to the primary legislation. The regulatory framework, however, lags behind emerging developments in the payments landscape. Payment Systems and Services Bill 2017 was drafted to fill the gap created by technology and innovation. The bill is currently before cabinet.

6.12 Settlement Risk

Settlement risk was mitigated by mandatory settlement of interbank obligations in central bank money and on the GIS system. Settlement on the system was immediate, irrevocable and final.

6.13 Retail Payment System Oversight

The Bank's oversight of retail payment systems was aimed at efficiency, safety and consumer protection. Oversight activities in retail payment system space were intensified to forestall any negative impact on consumer confidence and uptake of electronic payments. Effort was also directed at consumer protection, and recourse mechanism, information technology security and data protection, system downtime, business continuity plans, and incidence of fraud. A new cyber security regulation is being introduced to enhance service providers systems and capabilities against cyber risk. The retail payments space was sound with the exception of few incidents of fraud in mobile money operation largely attributed to agent fraud. The situation was remedied through changes in the procedure for executing cash-out transactions after the department intervention.

Chapter 7

7.0 Financial Inclusion

The Bank continued to pursue measures aimed at creating the enabling regulatory environment that promotes innovation at the same time ensure financial stability.

The Bank at the Global Policy Forum 2017 in Egypt made new commitments under the Alliance for Financial Inclusion (AFI), Denarau Action Plan (DAP) with the view to promoting access to financial services to women and the under-privileged.

The Bank through the Payment Systems Department also hosted the 15th Digital Financial Services (DFS) Working Group and the 6th Global Standards Proportionality (GSP) Working Group Meetings of the Alliance for Financial Inclusion (AFI) at the Labadi Beach Hotel, Accra from February 20 -24, 2017. This was the first time Ghana hosted an AFI event. AFI is the world's leading organization on financial inclusion policy and regulation. It is a member-owned network of central banks, development partners and policy makers that promotes and develops evidence-based policy solutions that improve lives of the poor through financial inclusion.

The Digital Financial Services (DFS) Working Group meeting provided a platform of policy makers to discuss regulatory issues on digital financial services (DFS), including mobile financial services (MFS), branchless banking, electronic money, digital payment solutions and other new technologies being introduced to promote DFS as a major driver of greater financial inclusion in emerging and developing countries.

Similarly, the Global Standards Proportionality (GSP) Working Group provided a platform that facilitated peer learning on issues policymakers and regulators face in achieving a balance between financial inclusion, integrity and stability, as well as to examine the proportionate implementation of the global standards set by global Standards Setting Bodies (SSBs)

7.1 Financial Inclusion Development Strategy

Government in collaboration with key stakeholders including the Bank of Ghana developed a draft National Financial Inclusion Development Strategy (NFIDS) framework. The document was developed by the Government of Ghana with technical assistance from the World Bank in collaboration with relevant key stakeholders including Bank of Ghana, National Insurance Commission, and the Pensions Regulatory Authority.

The National Financial Inclusion and Development Strategy (NFIDS) framework aims at increasing access to formal financial services at affordable cost for the adult population. It is envisaged that it would increase financial inclusion from 58 percent to 75 percent by 2023.

The NFIs focuses on the most excluded groups of the population including rural residents, women, the poor by prioritizing development of digital financial services (mobile money). The main pillars of the NFIDS are financial capacity, financial stability, Access, Quality and usage of financial services, financial consumer protection and financial infrastructure.

7.2 Status of Financial Inclusion

Financial inclusion has gained global appeal in recent times on account of its role in promoting access to Small and Medium Enterprises.

7.2.1 Developments during the year

Some initiatives that supported financial inclusion drive and deepened the payment system during the year were as follows:

- a. TBill4all was launched by Ecobank Capital Advisors (ECA) in collaboration with Ecobank Ghana Limited and MTN Ghana. The award-winning product over the year has mobilized funds from the informal sector through provision of opportunity for mobile money subscribers to purchase Treasury Bills through the use of their mobile phones as low as GH¢1 (See Table 18).

Table 18: Tbill4all Holdings as at 31 December 2017

	91DAY	182 DAY	TOTAL
No of Clients/Applications	4,511	3,165	7,676
Value of Holdings (GHS)	637,057.00	544,719.00	1,181,776.00

- b. During the year under review, service providers enhanced their services by providing fast and convenient means to receive money by enabling the termination of inward remittances directly into customer's mobile phones.
- c. Micro-loan products delivery was also enhanced by disbursing and repaying loans through mobile phones.
- d. The Bank issued Consumer Recourse Mechanism Guidelines for financial service providers to create public awareness and also address complaints handling and resolution processes.
- e. Remittance companies are leveraged on the e-zwich and the Ghana Instant Pay (GIP) platforms to terminate remittances on e-zwich cards and into bank accounts. The e-zwich platform recorded increases in volume of transactions on account of enrolment of cocoa farmers, teachers, nurses and national service personnel. The total volume of transactions increased by 56.0 per cent to 8.4 million from 5.4 million in 2016. Four hundred and eighteen (418) e-zwich points of sale devices were deployed by GhIPSS at active mobile money agent points in the 10 regions to provide financial services to the unbanked in mostly remote areas. Total number of cards issued went up by 25.9 percent to 2.4 million in 2017 from 1.9 million in 2016 and 1.4 million in 2015 (see Table 19).

Table 19: E-zwich Use

	2015	2016	2017	Annual Change %
Total Number of Cards	1,369,369	1,878,044	2,364,456	25.9
Volume of Transactions	2,251,101	5,365,085	8,367,017	55.95
Value of Transactions	922.9	2,362.97	3,431.49	45.22

- f. The Electronic Payment platform, GhIPSS Instant Pay (GIP), allowed financial institutions to transfer funds from one bank account to another as a single immediate payment platform. In 2017, 41,795 transactions valued at GH¢83.23 million were effected through the platform (see Table 20).

Table 20: GhIPSS Instant Pay

	2017
Volume of Transactions	41,795
Value of Transactions (GHc Million)	83.23

- g. Bank of Ghana in collaboration with the Ministry of Finance put in place modalities for a joint financial literacy campaign to further deepen financial inclusion.
- h. Livelihood Empowerment Against Poverty (LEAP), a social cash transfer initiative aims at poverty reduction in the short term and to encourage building of human capital for poverty reduction on long-term basis. LEAP provided monthly stipend to the extremely poor households in Ghana. In 2017, the total volume of transactions distributed to beneficiaries through the e-zwich platform was 719,852.

7.2.2 Update of Financial Access Points and Usage of Mobile Money Services in Ghana

Tables 21 and 22 provide the annual growth rate of financial access points and usage of mobile money services in Ghana from 2015 to 2017

Table 21: Financial Service Access Points

	2015	2016	2017
Licensed Banks(DMBs)	29	33	34
Bank Branches	1173	1,341	1,491
Microfinance Institutions	546	564	566
Rural and Community Banks-Head Office	139	141	141
Rural and Community Bank-Agencies	887	895	910
Active Mobile Money Agents	56,270	107,415	151,745
ATMs	912	1,928	2044
Non-Bank Financial Institution	62	64	71

Table 22: Usage of Mobile Money

Usage(Transactions)	2016	2017
Active Mobile Money accounts	8,313,283	11,119,376
Total volume of mobile money transactions	550,218,427	981,564,563
Average Volume of mobile money transactions per day	1,503,329.04	2,689,218
Number of accounts registered with mobile money (Cumulative)	19,735,098	23,947,437
Total value of mobile money transactions(GH¢' million)	78,508.90	155,844.84
Total value of mobile money transactions(USD' million)	18,691.71	35,293.35
Balance on mobile money Float (GH¢' million)	1,257.40	2,321.07
Balance on mobile money Float (USD' million)	299.37	525.64

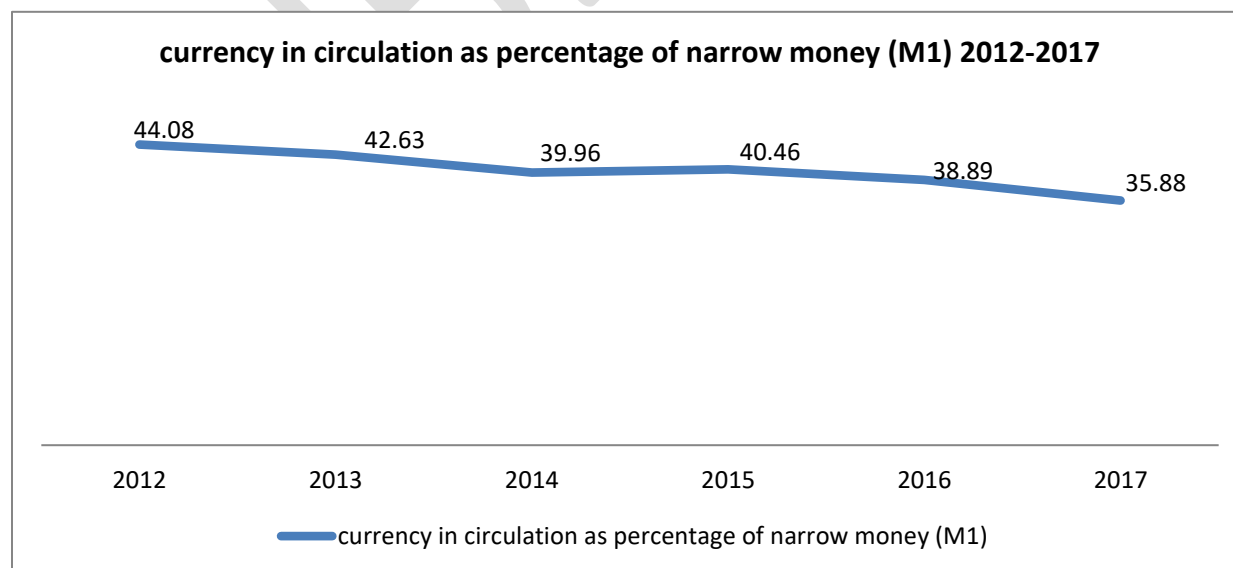
Currency in circulation to narrow money (M1), a measure of depth of the payment system declined from 38.89 percent in 2016 to 35.88 percent in 2017 suggesting

increased use of the existing payment channels and instruments. (see Table 23 and chart 14)

Table 23: Key Monetary aggregates

Monetary Indicators	2012	2013	2014	2015	2016	2017
Reserve Money	7,860.5	9,051.1	11,784.6	14,636.3	18,968.0	21,457.1
Narrow Money (M1)	11,157.3	12,902.5	17,257.6	21,018.3	26,076.4	29,847.0
Broad Money (M2)	17,503.8	20,692.0	27,530.2	34,860.9	43,452.5	52,066.4
Broad Money (M2+)	22,620.6	26,937.0	36,843.2	46,455.3	56,692.1	66,172.0
Currency with the Public	4,918.6	5,499.7	6,896.3	8,503.7	10,139.8	10,707.9
Demand Deposits	6,238.7	7,402.8	10,361.3	12,514.5	15,936.6	19,139.1
Savings & Time Deposits	6,346.5	7,789.5	10,272.6	13,842.6	17,376.1	22,219.4
Foreign Currency Deposits	5,116.8	6,245.0	9,313.0	11,594.4	13,239.6	14,105.6
CIC/M1	0.44084	0.42625	0.39961	0.40459	0.38885	0.35876

Chart 14: Money in Circulation M1



Chapter 8

8.0 Fees and Tariffs Structure

This section discusses payment systems fees and tariffs submitted to the Bank by financial service providers in 2017.

8.1 ATM AND POS Transaction Fees and Tariffs

ATM and POS transactions involve a number of fees. A consumer may pay a fee to a bank when the ATM used is not owned by its bank. The consumer may also pay a surcharge fee to the ATM owner. The issuing bank pays an interchange fee to the ATM owner for the consumer's use of the ATM.

With regard to Point of Sales (POS) transactions, the card issuing bank receives an interchange fee from the merchant's bank (Acquirer) and may also receive a PIN fee from the consumer when it is an online transaction. The merchant pays its bank a discount fee.

The issuing bank and the merchant bank, depending on routing arrangements pay switching fees to the scheme or system operator for transmitting the transaction information.

The transaction fees paid by customers, who use ATM and POS terminals, vary from bank to bank. The transaction fee may be at a flat rate or expressed as a percentage of the value of the transaction. Table 24 provides the average transaction fees of banks as at December, 2017:

Table 24: ATM and POS Transaction Fees and Tariffs

ATM AND POS TRANSACTION FEES & TARIFFS						
ATM				POS		
	OWN	OTHER	FOREIGN	OWN	OTHER	FOREIGN
VISA	free -GH¢1.00	avg GHS5.00 or 1.6%	GH¢8 to 3%	free to 2%	1% to 3%	GH¢4 up to 3%
MASTERCARD	free - GH¢1.00	GH¢4 and/or 2.02%	\$2 to 3%	free to GH¢ 1.00	GH¢2.5 up to 3%	\$2.00 up to 3.5%
GH-LINK	free - GH¢1.50 or 0.04%	GH¢1.7-GHS 4	NIL	free to GH¢ 1.50 or 0.04%	GHS 0.60 per transaction	NIL

8.2 Mobile Money Services Fees and Tariffs

Mobile money services fees and tariffs were either at a flat rate or expressed as a percentage of the value of the transaction. The fee structure is designed to make mobile money services accessible at lower cost. Mobile money service fees and tariffs as at December, 2017 are provided in Table 25.

Table 25: Mobile Money Services Fees and Tariffs

	Type of Transaction	VODAFONE			AIRTEL			TIGO			MTN		
		Range (GH¢)		Fees/ charges (GH¢)	Range (GH¢)		Fees/ charges (GH¢)	Range (GH¢)		Fees/ charges (GH¢)	Range (GH¢)		Fees/ charges (GH¢)
1	Send money from a registered customer to another registered customer (same network)	1	50	0.5	1	50	free	1	50	0.5	1	50	0.5
		50.01	75	0.5	51	100	free	50	100	1	51	1000	1%
		75.01	100	0.5	101	250	free	100	250	1.5	1000 and above		10Flat
		100.01	250	1	251	500	free	250	500	2			
		250.01	500	2	501	1000	free	500	1000	2.5			
		500.01	1000	3	1000	3100	free	1000	2000	5			
		1000	2000	3									
		2000	3000	3									
2	Send money from a registered customer to unregistered customer	1	50	1.5	1	50	GH¢1.00	1	50	1.3	1	50	1.5
		50.01	75	2.5	51	100	2%	50	100	2.5	51 & Above		3%
		75.01	100	2.5	101	250	2%	100	250	4.3			
		100.01	250	4.5	251	500	2%	250	500	6			
		250.01	500	6	501	1000	2%	500	1000	8.5			
		500.01	1000	Nil				1000	2000	17			
		1000	2000	Nil									
		2000	3000	Nil									

	Type of Transaction	VODAFONE			AIRTEL			TIGO			MTN		
		Range (GH¢)		Fees/charges (GH¢)	Range (GH¢)		Fees/charges (GH¢)	Range (GH¢)		Fees/charges (GH¢)	Range (GH¢)		Fees/charges (GH¢)
3	Send money from an unregistered customer to an unregistered customer	Nil	Nil	Nil	1	50	2.5	1	50	2	1	50	2.5
		Nil	Nil	Nil	51	100	5.00%	50	100	4	51 & above	5%	
		Nil	Nil	Nil	101	250	5.00%	100	250	8			
		Nil	Nil	Nil	251	500	5.00%	250	500	17			
		Nil	Nil	Nil	501	1000	5.00%	500	1000	32			
		Nil	Nil	Nil				1000	2000	50			
		Nil	Nil	Nil									
4	Withdrawal by registered customer	1	50	0.5	1	50	0.8	1	50	0.8	1	50	0.5
		50.01	75	1.5	51	100	1.25	50	100	1.5	51	1000	1%
		75.01	100	1.5	101	250	1%	100	250	2.8	1000 and above	Ghs 10Flat	
		100.01	250	2.5	251	500	1%	250	500	4			
		250.01	500	4	501	1000	1%	500	1000	6			
		500.01	1000	6	1001	3100	1%	1000	2000	12			
		1000	2000	10									
		2000	3000	15									
5	Withdrawal by unregistered customer	Nil	Nil	Nil	1	50	free	1	50	Free	1	50	Free
		Nil	Nil	Nil	51	100	free	50	100	Free	51	1000	Free
		Nil	Nil	Nil	101	250	free	100	250	Free			
		Nil	Nil	Nil	251	500	free	250	500	Free			

CHAPTER 9

9.0 Summary and Conclusion

The payment system landscape witnessed significant changes on account of the growing role of financial technology firms and intense competition among financial service providers in the introduction of innovative products. The development is attributed to conscious efforts by Government and Bank of Ghana to promote digital payments as alternative to cash; and customers demand for fast, convenient and efficient payments. A survey conducted by the department revealed that there are currently seventy-one (71) FinTechs providing both front and back end services to the banking sector.

The other main developments during the year were legal and regulatory reforms, airtime use for payment for insurance premium, agent registry, mobile money interoperability, migration of magnetic strip cards to EMV standard and support for National Identification Authority. The Bank also through the Payment Systems Department obtained assistance from FSD Africa, United Kingdom DFID funded institution that aims at reducing poverty across sub Saharan Africa by building financial markets that are efficient, inclusive and robust. The primary aim of the programme is to develop the retail credit market, expand financial inclusion and increase access to credit. The programme entails a diagnostic study of the retail credit market and development of a template to collect dataset for monitoring of the credit market.

The value of retail payments (excluding cash) increased by 43.18 percent to GH¢381.43 billion in 2017 from GH¢266.39 billion in 2016. The growth in the value of the retail payment instruments was on account of increases in the value of mobile money services (98.50 percent) and e-zwich (45.22 percent). Mobile money has overtaken cheques as the main non-cash retail payment instrument with 981.6 million volume of transactions, followed by Debit Card (60.4 million), e-zwich (8.4 million), cheques (7.3 million) and Direct Credit Transfer (6.1 million) in 2017. However, in

terms of value of transactions undertaken in 2017, cheques continued to maintain its lead but marginally with GH¢179.6 billion while mobile money followed closely with GH¢155.8 billion.

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