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FINTECH BRIEF

E-MONEY IN GHANA

A CASE STUDY

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E-Money in Ghana: A Case Study

Executive Summary

The usage of electronic money (e-money) for transactions has grown across Ghana and has the potential to revolutionise the cash-dominant economy to become cashless. Propelling this growth are mobile money operators (MMOs), which have developed to offer a specific type of e-money, termed mobile money (MM). With the increased use of mobile-money services and growth in the payment systems sector each day, it is imperative for Ghana to design a holistic approach to the use of e-money as well as consider its operationalisation of the coverage by the deposit insurer.

The Ghana Payment Systems Act, 2019 (Act 987) sets out the rules for the issuance of e-money within Ghana and the supervision of the business of e-money institutions (EMIs), which includes MMOs.

There are growing concerns about safeguarding client funds held by EMIs worldwide. In Ghana, client funds held by EMIs must be placed in custodial accounts at banks. As a result, it has become necessary for Ghana's deposit insurance system to consider how to protect these funds. Funds backing the electronic value belonging to customers of MMOs are kept in a custodian account which resides with banks and hence the need for these funds to be protected in case of a bank failure is being discussed.

This brief describes the distinctions between deposits and e-money and provides a description of the key features of e-money in the Ghanaian context. It discusses the factors influencing the protection of e-money wallets and the float (defined as the cash equivalent of outstanding electronic money liabilities of an electronic money issuer with partner banks) kept with commercial banks. Finally, options to be considered for the possible protection of these wallets in case of bank liquidation are presented.

1 Background

IADI defines "**e-money**" as an electronic store of monetary value on a technical device that may be widely used for making payments to entities other than the e-money issuer. The device acts as a prepaid bearer instrument that does not necessarily involve bank accounts in transactions.

In this brief, the term "**mobile money**" refers to a type of e-money that is offered specifically by Mobile Money Operators (MMOs). The MMOs offer mobile money accounts via mobile phones using the Subscriber Identification Module (SIM) as the identifier.

In recent years there has been considerable interest in the development of e-money, which has the potential to take over from cash as the primary means of making small-value payments as well as reaching the unbanked population. In Ghana, the most widely used form of e-money is mobile money (MM). In this brief, the term "mobile money" refers to a type of e-money that is offered specifically by Mobile Money Operators (MMOs).

The Ghana Payment Systems Act, 2019 (Act 987) defines MM as electronic cash, backed by an equivalent amount of Bank of Ghana notes and coins, stored using the Subscriber Identification Module (SIM) in a mobile phone as an identifier. In 2015, Ghana issued the E-money Issuers and Agents Guidelines. These guidelines provided the initial framework for the issuance of e-money, including MM. The mobile money ecosystem has grown substantially since then. The use of MM has overtaken cheques as the main non-cash retail payments instrument. Already in 2017, the number of transactions using MM totalled 981.6 million, which by far surpassed transactions using other means such as debit card (60.4 million), e-zwich[1](8.4 million), cheques (7.3 million), and direct credit transfer (6.1

[1] The E-zwich smartcard is a secure smart card issued by the Ghana Interbank Payment and Settlement Systems Limited (GhIPSS) and used for transactions including cash withdrawals, online payments, money transfer. The e-zwich card is an interoperable biometric smart card payment system which connects all financial institutions in Ghana; allowing e-zwich cardholders to perform banking and retail transactions at the outlets of other e-zwich financial institutions.

million). As of 2018, the value of MM transactions as well surpassed the one by cheques as most important payment means in volume (GH₵ 223 billion in 2018 in MM and GH₵ 203 billion in cheques).[2]

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

Today, mobile money is a popular payment tool for utility bills, school fees, groceries, and even online shopping. The latest Economic and Financial Data from the Bank of Ghana (BoG) showed that the total value of Ghana's mobile money transactions increased to GH₵ 76.2 billion in January 2022, up over 150% in two years (See Table 1 for these and other facts on the growth of MM in Ghana.). In January 2022, checks accounted to GH₵ 16 billion.

Table 1. Growth of Mobile Money in Ghana

	January 2022	January 2021	January 2020	Growth in % (2022 vs. 2020)
Value of MM transactions	GH₵ 76.2 bil.	GH₵ 67.1 bil.	GH₵ 30.2 bil.	+152 %
Balance of float for all MM transactions	GH₵ 9.4 bil.	GH₵ 7 bil.	GH₵ 3.7 bil.	+ 154 %
# of MM transactions	372 mil.	301 mil.	190 mil.	+ 96 %
Registered MM accounts	48.4 mil.	40 mil.	32.6 mil.	+ 48 %
Active MM accounts	17.4 mil.	17.3 mil.	14.1 mil.	+ 23 %
Value of Ghana's MM Interoperability (MMI) platform	GH₵ 2108 mil.	GH₵ 906 mil.	GH₵ 129 mil.	+1534%

Source: Bank of Ghana (2020a) and Bank of Ghana (2022)
MMI is a platform that allows customers to transfer e-money from one network to another seamlessly.

1.1 E-money service industry

In Ghana, three MMOs -- MTN Mobile Financial Service, AirtelTigo Money, and Vodafone Cash -- offer MM services. Over the years many fintech companies have emerged in Ghana to provide other forms of e-money services. A survey of banks conducted in 2017 by the payment systems department of the BoG revealed that about seventy-one FinTechs were providing services in the payment and financial systems.[3] Examples of such services include: Electronic Payment Services, mobile payments, internet banking services and USSD, SMS and credit top-up purchase vouchers, and support services for banking software and investment applications.

The MMOs are profit-maximising entities that issue e-money; they provide the mobile infrastructure, the customer base, and the agents' network. The cash received by the MMOs in exchange for MM is termed float and must be held in banks. Banks provide physical custody for the float, The transfer of MM between users is executed using bank technical platforms. The MMO's agents facilitate cash-in (converting cash into electronic form) and cash-out (issuing cash on demand) to ensure convertibility between MM and cash. Agents are effectively liquidity managers in the MM sub-sector.

Merchants and retailers accept MM payments in exchange for different products and services. Ghana was among the world's first countries to launch contactless near-field communication (NFC) payments via mobile money with Airtel's "tap and pay" service in 2019. Airtel later launched a micro-loan product called Airtel Money Bosea, which allows customers to borrow up to 200 Ghana Cedi instantly, with up to a month to pay back through deductions via their Airtel Money accounts.

1.2 E-money regulatory landscape

1.2.1 General regulation

The responsibility for generating e-money lies with the Electronic Money Issuer (EMI) which is required to register and receive an operating license from the payment systems department of the Bank of Ghana (BoG). EMIs are required to have a bank account with a universal (i.e., full-service) bank, to ensure all e-money generated has a corresponding cash

[2] Bank of Ghana (2020)
[3] Bank of Ghana (2017)

equivalent float account at the bank.[4] Typically, EMIs aggregate the funds received from customers in one pooled bank account, which is then treated as a single account for the purposes of deposit insurance.

The BoG regulates, supervises, and oversees the activities of the banks and Specialised Deposit-taking Institutions (SDIs)[5] to ensure that the banking sector and the payment ecosystem are safe, reliable and efficient. The Bank of Ghana (BoG) focuses on key issues relating to Anti-Money Laundering and Countering Financing of Terrorism (AML/CFT); consumer protection; promotion of competitive practices; asset quality; solvency; liquidity; earnings; systems; and control and management with respect to oversight of the mobile money sub-sector.

The National Communication Authority (NCA) oversees the security of customers' data, and the integrity of MM technologies. It regulates and oversees the activities of the Mobile Network Operators (MNOs) which own the mobile money companies.

The BoG launched a Strategic Payments Roadmap Report, in March 2014, that provided the foundation for further enhancement of payment services in order to achieve the twin goals of creating a cash-lite economy and greater financial inclusion. The Strategy identified MM and a deepening of the payment system as critical elements in meeting the goals and also called for a strategic relationship between the NCA and the BoG. The document requested for all forms of mobile payments to be regulated by the BoG and for legislation to be put in place to guide the orderly development of the sub-sector.

Also, an MOU between the Bank of Ghana and the NCA which was signed on September 20, 2016. The MOU sets forth a statement of intent between the Bank of Ghana (BOG) and the NCA for both parties to collaborate in specialised areas in order to enforce and ensure compliance with the financial laws, regulations, directives and guidelines of the Bank with respect to mobile money operations. The NCA on its part also seeks to enforce adherence to laid down key performance indicators on quality of service.[6]

In line with the National Payment Systems Oversight Framework the Bank in 2016 set up the Payments Systems Council (PSC) to drive development in the payment systems. The Council is to serve as an advisory body to the Bank and supports the attainment of a sound and efficient payment, clearing and settlement system in Ghana. Both NCA and Bank of Ghana have representatives on this council which is also an avenue for interaction.[7]

1.2.2 GDPC and e-money

The Ghana Deposit Protection Act, 2016 (Act 931), as amended, established the Ghana Deposit Protection Scheme, the Ghana Deposit Protection Fund, and the Ghana Deposit Protection Corporation (GDPC). The GDPC is charged with managing the Scheme efficiently and effectively towards the attainment of its objectives. This includes the protection of small depositors from loss incurred because of an insured event.

Section 44 (1) of Act 987 (The Payment Systems Act) also expressly states that an e-money account holder shall be eligible for deposit protection under Act 931 if the balance of the e-money account falls within the prescribed threshold under Act 931. Based on the legal requirement for the Ghana Deposit Protection Corporation (GDPC) to cover e-money transactions, it is implicitly required that funds kept in EMI's pooled accounts (the float) be covered.

However, EMIs generally aggregate all of their customers' funds into one single account, so that the extent to which individual customers have their funds protected by the deposit insurance regime depends not only on the coverage limit, but also on the volume of operations of the e-money provider. This is so since an EMI may generate a volume of funds that exceeds the coverage limit, leaving individual e-money holders not fully protected.

[4] Payment-Systems-and-Services-Act-2019-Act-987

[5] SDIs include Savings and Loans companies, Rural banks, Finance houses and Microfinance institutions.

[6] Bank of Ghana (2016)

[7] Id.

The GDPC is therefore weighing how to extend deposit insurance to individual e-money accounts. In this regard, the pass-through approach for providing deposit insurance to these account holders may be considered for the following reasons:[8]

- E-money is not exempted under section 13 of the Ghana Deposit Protection Act 931[9]; therefore, it must be covered;
- The float system is already in place in Ghana where MMOs have custodial accounts with Deposit-Taking Institutions that hold the float;
- Ghana cannot use the direct approach as most MMOs are not members of the deposit insurance system.

2 Impact on deposit insurers

The GDPC is developing possible solutions to the roadblocks that could make it difficult to ensure coverage for e-money account holders in case of a bank liquidation. In considering a practical implementation to the coverage of e-money, the GDPC intends to explore the following options:

- **Option 1 – Ring-fence and transfer the float account**
  Generally, MM customers are not aware of which bank holds their balances. When a bank collapses, MM customers will not know whether their MM accounts are affected. Moreover, since these customers do not have any formal relationship with the banks (only the MM does), they will not be expecting to be affected by the bank failure, rather they will expect to be able to continue making transactions through their mobile account. In response to these concerns, the various float accounts held with the financial institutions and marked as custodian accounts for e-money users could be ring-fenced and transferred to another bank in case of liquidation of the current bank. This will permit the MMO and its customers to operate seamlessly without any interruptions.

- **Option 2 – Treat as customer account**
  Another possibility is to view the custodian accounts of the MMO held with the banks as a single account and pay the maximum coverage amount for banks. In other words, GDPC would treat each float account as a standard account and pay up to the agreed coverage limits by law. This option would not provide full protection for individual MM account holders if the amount of the float account exceeds the coverage limit. However, this may become necessary if the MMOs refuse to cooperate with the GDPC and BoG to provide relevant information on its account holders.

- **Option 3 – Additional Scheme for MMOs**
  The GDPC could consider a separate additional scheme just for the MMOs. The scheme would require the MMOs to contribute a specific amount to the voluntary scheme to be managed by GDPC specifically for the protection of e-money wallets. This could be possible since the MMOs are considered financial institutions. This would, however, require an amendment of the current GDPC law to compel MMOs to subscribe to the additional scheme.

[8] The Pass-through approach, also known as the indirect approach, is one of three approaches that have been identified as a means to apply deposit insurance to e-money. The other two approaches – exclusion and the direct approach – either completely exclude e-money accounts from deposit insurance protection or provide complete coverage to e-money account holders should an EMI fail. Alternatively, the pass-through approach provides deposit insurance coverage to e-money account holders in the case where the DTI holding the e-money float fails.

[9] Section 13—Insurable deposits With the exception of the following, a bank or specialised deposit-taking institution shall insure with the Scheme, deposits held at that bank or 'a specialised deposit-taking institution: (a) a deposit for which a depositor has not been identified; (b) a deposit that is frozen in compliance with an order of a court; (c) a deposit that belongs to (i) a director or a key management personnel; (ii) a director or a key management personnel who has worked with the bank or specialised deposit-taking institution for at least three years preceding the occurrence of the insured event; (iii) an accounting or audit firm, a partner of that accounting or audit firm, and a manager of that accounting or audit firm who is in charge of performing the external audit of the financial statements of the bank or specialised deposit-taking institution for at least the three years preceding the occurrence of an insured event; or (iv) a deposit that is used as a collateral for a loan or other obligation with the bank or specialised deposit taking institution; (d) a deposit held in a bank or specialised deposit-taking institution by a financial institution, pension fund, retirement fund, insurance company, collective investment undertaking, local government, central government and administrative authority; and (e) a deposit held in a foreign branch of a bank or a specialised deposit-taking institution incorporated in Ghana, and a subsidiary of that bank or specialised deposit-taking institution operating in a foreign country. [As substituted by the Ghana Deposit Protection (Amendment) Act, 2018 (Act 968), s. 6

- **Option 4 – Introduction of Digital Fiat Currency**
  Finally, GDPC could propose the introduction of digital fiat currency to be issued by the central bank (i.e., a Central Bank Digital Currency) to replace e-money issued by EMIs. This will ensure that the central bank retains control of the issuance of currency for MMO transactions.

3 Impact on depository institutions

The payment system landscape has witnessed significant changes on account of the growing role of fintech firms. The development is attributed to conscious efforts by the Government and the BoG to promote digital payments as an alternative to cash and customers' demand for fast, convenient, and efficient payments.

Banks have partnered with fintech firms and MMOs to provide innovative financial services to the public in response to the increasing demand for digital payment products and deliver banking services that are meant to promote access. For example, some universal banks have submitted applications to issue e-money under Act 987. Additionally, the BoG has approved some universal banks to link customers' accounts to their mobile money wallets. This innovation provides an opportunity for the banks to deliver services such as microloans and savings digitally.

The BoG issued Branchless Banking Guidelines in 2008 with the intention of increasing financial access to the unbanked. Unfortunately, the banking system did not follow through to develop an agency network due to the micro nature of deposits involved and the cost of deployment. The Guidelines also allowed banks to partner with telecommunication companies (Telcos) to deliver these services. Although Telcos did show an interest to deliver the services, at this time, some banks were reluctant to foster these partnerships, as they feared that Telcos would take over their businesses.

In 2015 the BoG issued e-money Guidelines with the broad objective of allowing non-bank entities to scale up agency networks for mobile money in partnership with the banks. These Guidelines allow telcos to own agency networks. Banks' unwillingness to develop the mobile money agent network under the Branchless Banking Guidelines (2008), paved the way for Telcos to increase mobile money operations and to scale up the agency network. In 2017, the BoG launched the country's first Mobile Money Interoperability (MMI) System, which enables MM users in Ghana to send and receive money to and from each other, regardless of the network they are on. Interoperability has also made it possible for people to transfer funds from their mobile money wallets to their bank accounts without physically going to a bank branch or using a fintech platform.

The MMI also allows Fintechs and other financial institutions to come out with various products that will run on the system and create convenience for customers. As a result, microcredit and deposit schemes can be offered to the public since people are able to make payments to mobile money wallets regardless of their networks.

The e-money regulations issued by the BoG have introduced favourable changes to the way MM providers were allowed to operate, including simpler registration processes for customers and simplified rules on the business model. Overall, these regulations opened the way for the development and growth of e-money in Ghana. Opening the provision of e-money to non-bank providers has led banks to question whether telephone companies should be offering financial services that traditionally fall under the banking sector. It's all part of a wider discussion around the role of digital services in providing much-needed financial services to unbanked and hard-to-reach customers. Over time, Ghana's banks have mostly recognised the opportunity in partnering with telephone companies. They gain access to a new customer base and support mobile money's role in helping Ghana move towards a cashless economy.

The use of e-money has resulted in banks experiencing exponential growth in both revenue and deposits because of the float kept with them.

4 Impact on depositors

With the addition of MMOs, mobile money is gradually becoming a major means of payment for the unbanked and the underserved in Ghana. The rapid growth in MM usage in Ghana is partly due to the increasing penetration and application of mobile phones, particularly in rural areas. The widespread proliferation of MM among the unbanked and underserved is premised on recent advances in handset functionality, chip, and mobile network technologies, and upgrade in Point-Of-Sale (POS) infrastructure. These developments have improved the environment for MM solutions and brought together different industry players, such as banks and MMOs to establish MM businesses.

After an initial reluctance, banks in Ghana have invested heavily to provide e-money services. Digitalisation has motivated the banking sector, and account holders are receiving better services at lower transfer rates. Banks can now better reach the unbanked since both the customers from the informal/formal sectors can access financial service through e-money thereby increasing the depositor base. E-money has impacted the average Ghanaian citizen by promoting financial inclusion, affording them the chance to access financial services like savings accounts, payments, and transfers to credit and insurance institutions and services. Financial inclusion does not suggest that everyone must make use of financial services, or that suppliers should neglect risks and additional costs when providing services.

The use of MM services as a means of payment brings several benefits to the user including convenience, speed, flexibility, and affordability. For consumers, the development of e-money has led to more secure payments, reductions in the cost of making payments, the ability to make payments on the due date, and easier cash management compared to conventional systems. The development of e-money is also expected to reduce the incidence of long queues in bank branches.

In the Ghanaian banking industry, e-money has become accepted as a stable form of money, used for both domestic and foreign transactions. E-money has low transaction charges and is highly reliable. Cheques can take several days to clear, but online payments allow instant settlement of cash transactions even after the bank closes or during holidays.

International remittances were highlighted last year by the Government of Ghana as a key contributor to the growth in mobile money. New partnerships enabled customers to receive international money transfers directly into their accounts. One of the most exciting things to come out of the new regulations is the approval by the BoG for MM customers to earn interest on the balance held in their account. As of early 2017, customers were able to receive interest of 1.5 percent to 7 percent every three months.

5 Conclusion

The introduction of e-money has created new problems for the business community but has also created new opportunities for a more efficient payment system. It is imperative for Ghana to design a holistic approach to the use of e-money and consider the operationalisation of its coverage by the deposit insurer. It is also important that we explore the problems as well as the opportunities it presents. Customer needs are likely to be best met through effective competition, and this will require that genuine choices amongst alternative products are available. Fast and efficient means of pricing trades, handling client relationships and redesigning distribution structures are being enabled by the Internet.

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