



**RETHINKING**  
YEMEN'S ECONOMY

# CHALLENGES AND PROSPECTS FOR ELECTRONIC MONEY AND PAYMENT SYSTEMS IN YEMEN

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By:  
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March 2022

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## LIST OF ACRONYMS

ACH	automated clearing house
AFESD	Arab Fund for Economic and Social Development
AMF	Arab Monetary Fund
AML	Anti-money laundering
ATM	Automated Teller Machine
B2B	Business-to-business
B2C	Business-to-customer
C2B	customers to businesses
CAC Bank	Cooperative and Agricultural Credit Bank
CBY	Central Bank of Yemen
CGAP	Consultative Group to Assist the Poor
CTF	counter-terrorist financing
EFT	electronic fund transfer
GAPPS	General Authority for Post and Postal Savings
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HSA	Hayel Saeed Anam group
IBY	International Bank of Yemen
ICT	information and communications technology
IDA	International Development Association
ITS	instant transfer scheme
IVR	integrated voice recording
KYC	Know Your Customer
MENA	Middle East and North Africa
MFI	microfinance institution
MNO	mobile network operator
NFSIN	national financial switch interbank network
NSG	National Salvage Government
P2P	person-to-person
PSD	Payments System Department
PTC	Public Telecommunication Corporation
RTGS	real-time gross settlements
SBYB	Shamil Bank of Yemen and Bahrain
SFD	Social Fund for Development
SMS	Short Message Service
USSD	Unstructured Supplementary Service Data
YFSC	Yemen Financial Services Company
YPC	Yemen Petroleum Company
YKB	Yemen Kuwait Bank

## EXECUTIVE SUMMARY

Yemen has a heavily cash-based economy with low levels of financial inclusion. The country's formal banking sector is highly underdeveloped, undercapitalized and concentrated in urban areas, leaving it inaccessible for the majority of the Yemeni population. Just prior to the current conflict, the Central Bank of Yemen (CBY) began reforms aimed at developing Yemen's financial sector infrastructure and reducing the predominance of cash by improving electronic interbank transactions and local electronic payment systems, including electronic and mobile money services. Given the widespread prevalence of mobile phones among the population, successful reform had the potential to dramatically increase financial inclusion. The onset of the ongoing conflict, however, interrupted progress.

This paper examines the existing regulations surrounding the use of e-money in Yemen, its attempts to adopt e-money services both before and during the conflict, the major players and state of infrastructure in the sector, and the challenges and prospects facing greater adoption of electronic currency in the country.

Broadly speaking, e-money adoption around the globe has been accompanied by three types of regulatory environments: highly, moderately and minimally regulated markets. In Yemen, a highly regulated market – which grants the right to provide e-money services only to banks – was the legal framework prior to 2014, though in practice adoption remained minimal. The Yemeni conflict escalated in 2015, and by 2016 the CBY was fragmented across frontlines, with rivaling branches vying for dominance in Aden and Sana'a – affiliated with the internationally recognized government and the Houthi authorities, respectively. In the years following, the CBY-Sana'a has increasingly taken steps to establish a minimally regulated, nonbank led model for e-money services, which the CBY-Aden has opposed, holding to the prewar legal framework.

Given Yemen's armed conflict, political crisis, deep institutional fragmentation in key state institutions – including the parliament and the CBY – and the underdeveloped state of e-payment infrastructure overall, widespread use of e-money is unlikely to emerge. During the conflict, any enforcement of aggressive unilateral steps by any of the competing parties to the conflict could deepen the division in the institutions involved in operating the e-payment services. Holistic initiatives to strengthen the Yemeni e-money and e-payment

ecosystem are invariably tied to ending political division and stabilizing the monetary regime, which must start by unifying the central banks and the official exchange rate.

Until a resolution can be reached, this paper recommends that stakeholders interested in implementing e-money services in Yemen adopt a “do no harm” approach. In general, this should focus on supporting the reunification of the country’s regulatory environment and, when supporting public and private entities in developing the necessary skills and infrastructure to implement e-money and e-payment services, do so in a way that does not compound the current regulatory and monetary chaos.

Over the long term, international stakeholders should support a unified CBY in developing strategic plans to stabilize the monetary regime and foster recovery of the financial system, including developing a national payment systems strategy to strengthen the payment infrastructure and facilitate a well-studied shift to electronic payments.

# 1 | INTRODUCTION

Yemen is a heavily cash-based economy with low levels of financial inclusion within the formal banking sector. In 2014, 94 percent of the Yemeni adult population over 15 didn't hold a financial account, including electronic accounts, and only 3 percent of the population could receive money via digital payment means. By 2019, 3 million Yemenis (10 percent of the population) held at least one bank account, of which 27 percent were electronic money, or 'e-money', accounts.<sup>[1]</sup> (Importantly, much of this increase occurred after the Houthi authorities imposed new restrictions on the circulation of new rial banknotes, printed by the Yemeni government-run central bank in Aden, in Houthi-controlled areas; this forced people to either exchange their new bills for old, or receive e-rial balances, as will be discussed in detail below).<sup>[2]</sup> Women have been disproportionately affected by the lack of access to finance services, with just 2 percent holding a financial account.<sup>[3]</sup>

As of 2015, there were only 1.6 bank branches and 6.4 automated teller machines (ATMs) per 100,000 Yemeni adults.<sup>[4]</sup> Between 2015 and 2016, the number of open bank accounts (including accounts opened with microfinance banks and for electronic money services) decreased by 40 percent, leaving some 2.4 million accounts held by 1.5 million Yemenis, while the number of active debit cards – mostly used for ATM services – decreased from more than 1 million in 2014-2015, to 200,000 by the end of 2016. Much of this was due to the fact that by mid-2016 – shortly before the central bank was fragmented between Sana'a and Aden – the country entered a severe liquidity crisis as the Yemeni government essentially exhausted both its supply of domestic currency banknotes and its available foreign currency reserves. It thus

[1] E-money is a surrogate for physical banknotes in which monetary value is stored electronically, rather than in paper or coins, and can be held and accessed on various platforms, such as payment cards, electronic devices and servers. E-money is a prepaid store of value, making it different to credit available through credit cards. Domestic financial institutions, such as central banks, generally authorize and regulate the financial service providers authorized to provide e-money services in any given country. An electronic wallet, or 'e-wallet', is the electronic monetary value held by individual entities and needs to be linked with an account for initiating digital payments. A mobile money transfer is an electronic transfer made between a sender and receiver using a mobile phone.

[2] Abdulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.

[3] "Digital Financial Services in the MENA Region," SHOPS) Plus, USAID, <https://www.shopsplusproject.org/sites/default/files/resources/Digital%20Financial%20Services%20in%20the%20MENA%20Region.pdf>. Accessed January 3, 2021.

[4] "Commercial bank branches (per 100,000 adults)," World Bank Data, [https://data.worldbank.org/indicator/FB.CBK.BRCH.P5?most\\_recent\\_year\\_desc=true](https://data.worldbank.org/indicator/FB.CBK.BRCH.P5?most_recent_year_desc=true). Accessed March 23, 2021.

suspended salary payments to roughly 1.25 million public servants and also ceased completely the repayment of its public debt instruments to commercial banks. Yemen banks have historically been major investors in government debt, and so the currency crisis left them financially crippled and unable to meet customer demands for cash withdrawals, or attract new investments. Consequently, many banking customers, mostly public employees, abandon the formal banking system altogether. Limited use of debit cards gradually increased in the following years, reaching about 400,000 active cards at the end of 2019; meanwhile, credit card usage still remained minimal, with just over 6,600 active cards in Yemen in 2014 decreasing to 1,206 cards in 2019.<sup>[5]</sup>

Concurrently, between 2015 and 2019, the CBY granted four Yemeni banks – Al-Kuraimi Islamic Microfinance Bank, Tadhamon International Islamic Bank, Al-Amal Microfinance Bank, Yemen Kuwait Bank (YKB) – licenses to provide electronic money services via mobile phone means; the CBY-Sana'a provided a license to the Cooperative and Agricultural Credit Bank (CAC Bank) during that same time period. In January 2021, the CBY-Sanaa gave licenses to two additional banks, Shamil Bank of Yemen and Bahrain (SBYB) and International Bank of Yemen (IBY), to provide electronic money services; this move by the Houthi authorities, as part of a larger campaign to restrict the use of new currency notes in Houthi-controlled areas, helped spur an uptick in e-money usage (as will be discussed in detail below).

It is important to note that Yemenis have access to informal financial services via the traditional hawala system – whereby money is paid to an agent who then instructs a remote associate to pay the final recipient – that retains a great deal of importance in everyday activity. People are able to send and receive money transfers through the hawala system and also have access to borrowing and credit. During the conflict, though, the ability of hawala networks to offer credit services has decreased.

The current level of e-money usage in Yemen is very low and certainly not helped by the inadequate regulatory framework and the low level of technical and technological infrastructure in the country as well as the institutionally fragmented monetary status quo. Nevertheless, there is clear potential for e-money usage in Yemen to enhance the

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[5] Abdulghani Mohamed AlSamawi et al., “Electronic Payment Services in Yemen: Challenges and Opportunities for Success,” Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.



level of financial inclusion within the formal banking system in the country and through financial service providers working underneath, notably the money exchange and financial hawla networks that have wide geographical presence and could reach the majority of financially disadvantaged people living in rural areas.

## 2 | YEMEN'S FINANCIAL SYSTEM

Yemen's formal domestic payment market includes three types of financial service providers: commercial and Islamic banks; microfinance banks and microcredit institutions;<sup>[6]</sup> and money exchange companies. Payment service providers are also an increasing part of the payment market. However, to date there is no ratified legal framework formalizing the operations of electronic payment service providers, other than the circular issued by CBY Sana'a in March 2020 intended to regulate such services.<sup>[7]</sup> There is also the state-run General Authority for Post and Postal Savings (GAPPS), which offers a range of financial services and is overseen by the Ministry of Telecommunications and Information Technology. GAPPS offers people the ability to pay utility bills – for state-run companies providing internet, electricity, phone and water services – though not electronically. GAPPS also offers a range of pension, domestic transfer and deposit services, while at the same time operates outside of the commercial financial sector and Yemen's central bank legal framework.

The formal banking sector in Yemen is highly underdeveloped, undercapitalized and concentrated in urban areas, leaving the majority of the Yemeni population unable to access the formal banking system. Before the conflict, Yemeni banks were largely credit concentrated, with over 72 percent of commercial banks' investments in public debt instruments, mainly treasury bills.<sup>[8]</sup> This led to an unprecedented liquidity crisis once the Yemeni government, namely the Ministry of Finance, was unable to make interest payments or repay banks' principal investments in mid-2016.<sup>[9]</sup> As of February 2021, there are 18 banks operating in Yemen, including four state-run banks, four Islamic

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[6] There are currently seven microfinance institutions and programs active in the Yemen microfinance sector. The main difference between microfinance banks and microcredit institutions is that microfinance banks are governed by the Microfinance Banks Law No. 15 of 2009 and thus being subject to CBY's supervision while the latter are governed by the Law No. (1) of 2000 regarding the Yemeni Associations and Civil Society Organizations and are not allowed to practice many of the activities reserved legally for banks. For more see: Moneef al-Shaibani, "Microfinance in Yemen: An Overview of Challenges and Opportunities", Sana'a Center for Strategic Studies/DeepRoot Consulting/CARPO, Rethinking Yemen's Economy White Paper 06, April, 2020, <https://devchampions.org/uploads/publications/files/Microfinance%20in%20Yemen>. Accessed February 21, 2022.

[7] Central Bank of Yemen (Sana'a), March 11, 2020, <https://yemen-yba.com/wp-content/uploads/2020/03/قرار-محافظ-البنك-الركزي-لقواعد-التنظيمية-لتقديم-الخدمات-المالية-خدمات-الدفع-الالكتروني-عبر-الهاتف-1-للحمول.pdf>. Accessed February 21, 2022.

[8] "Revitalizing Yemen's Banking Sector: Necessary Steps for Restarting Formal Financial Cycles and Basic Economic Stabilization," Sana'a Center for Strategic Studies, February 15, 2019, <https://sanaacenter.org/publications/analysis/7049>. Accessed February 21, 2022.

[9] "Addressing Yemen's Most Critical Challenges," Sana'a Center for Strategic Studies/DeepRoot Consulting/CARPO, Rethinking Yemen's Economy Policy Brief 01, June 5, 2017, [https://devchampions.org/publications/policy-brief/Practical\\_Short-Term\\_Recommendations/](https://devchampions.org/publications/policy-brief/Practical_Short-Term_Recommendations/). Accessed February 21, 2022.

banks, eight commercial banks (including four foreign banks that have branches in Yemen) and two microfinance banks.<sup>[10]</sup> In addition, there are seven microfinance institutions and programs.<sup>[11]</sup>

Money exchange companies, meanwhile, are officially non-deposit takers – by law, they are not allowed to accept or take deposits from clients. Money exchange companies are currently under regulated, however, and many do not uphold or adhere to international financial standards. Nonetheless, money exchangers are well positioned to reach large segments of society, including those living in remote rural areas, with money transfers and money exchange services. The number of branches of money exchange companies and shops, mostly family-owned businesses, has increased significantly during the conflict: in 2017, there were 876 such businesses reported in Yemen; in 2019, there were 3,244.<sup>[12]</sup>

## 2.1 | Pre-Conflict Legal Framework, Reform Efforts and E-Money Usage

Prior to 2014, there was no clear regulatory framework to govern the provision of electronic financial services in Yemen. The first CBY framework to be issued post-unification, Law No. 14 of 2000, was designed to regulate the CBY's functions, rules and responsibilities. Law No. 14 did not include any legal basis to create an e-money payment system but called for encouraging and simplifying the procedures of payment systems. Follow-up legislation, such as Law No. 40 of 2006, focused on electronic payment systems and financial and banking operations; these regulations recognized electronic transactions, data, information, records and signatures on the same legal basis as physical documents and handwritten signatures. In 2006, the CBY also supported the

[10] The four state-run banks are: Cooperative and Agricultural Credit Bank (CAC Bank), National Bank of Yemen, The Yemen Bank for Reconstruction and Development and The Housing Bank (the latter of which is not operational but also not officially declared defunct). The four Islamic banks are Islamic Bank of Yemen for Finance and Investment, Tadhamon International Islamic Bank, Saba Islamic Bank, and Yemen and Bahrain Shamil Bank. The eight commercial banks are Arab Bank Limited, International Bank of Yemen, Qatar National Bank, Rafidan Bank, United Bank Limited, Yemen Commercial Bank, Yemen Gulf Bank, and the Yemen Kuwait Bank for Trade and Investment. The two microfinance banks are Al-Kuraimi Islamic Microfinance Bank, and Al-Amal Microfinance Bank.

[11] Moneef al-Shaibani, "Microfinance in Yemen: An Overview of Challenges and Opportunities", Sana'a Center for Strategic Studies/DeepRoot Consulting/CARPO, Rethinking Yemen's Economy White Paper 06, April 30, 2020, <https://devchampions.org/uploads/publications/files/Microfinance%20in%20Yemen>. Accessed February 21, 2022.

[12] Abdulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.

creation of the Yemen Financial Services Company (YFSC), established and jointly owned by 11 Yemeni banks, which was intended to manage the country's national financial switch interbank network (NFSIN) and interoperability connections among Yemeni banks.

In 2013, aided by a US\$20 million grant from the International Development Association (IDA), an arm of the World Bank, the CBY began undertaking reforms aimed at developing Yemen's financial sector infrastructure.<sup>[13]</sup> The slated reforms included the installation of an advanced electronic fund transfer (EFT) system to accommodate real-time gross settlements (RTGS), a credit bureau, and a modern core bank system to help reduce the dominance of cash in the Yemeni economy by improving electronic interbank transactions and local electronic payment systems, as well as an automated clearing house (ACH) to process retail payment transactions between banks and other financial players, such as money exchange outlets.<sup>[14]</sup>

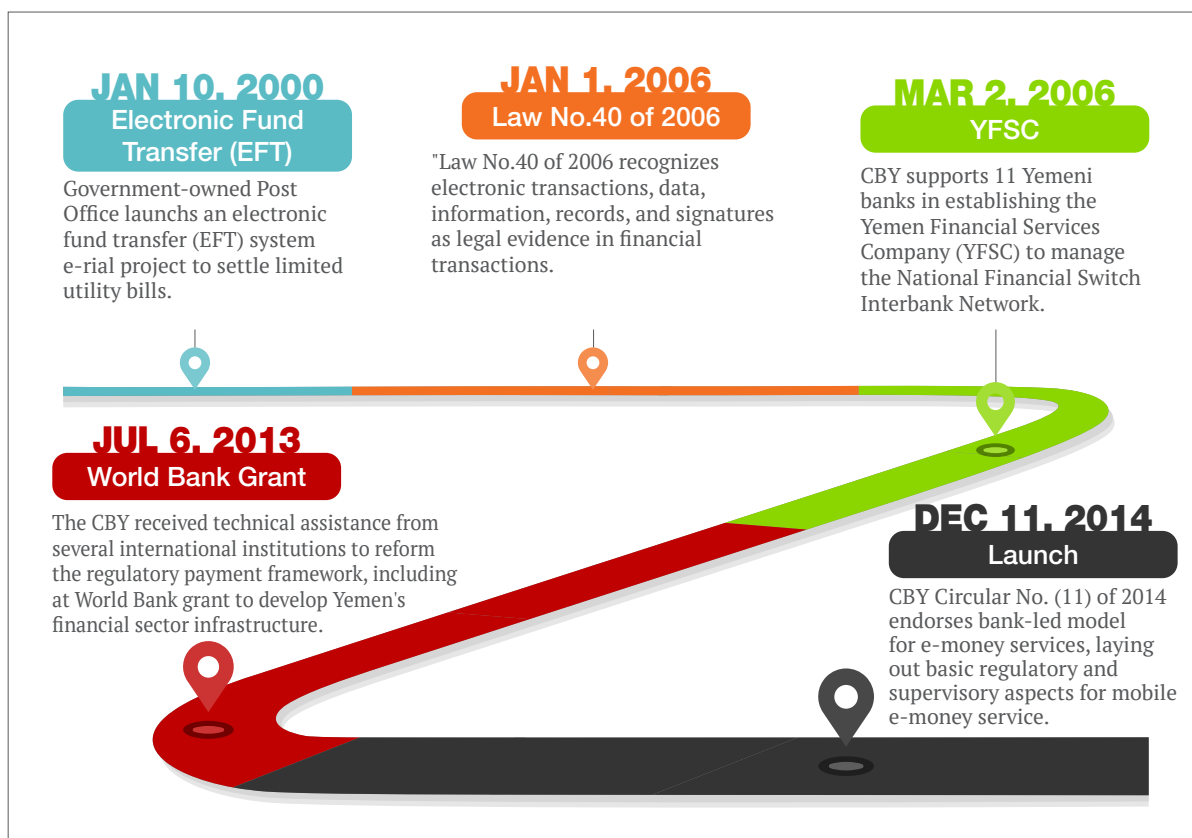
In late 2014, the CBY issued Circular No. 11 of 2014 to enable the establishment of a bank-led model to provide electronic money services, with support from USAID, the World Bank, the Consultative Group to Assist the Poor (CGAP) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The model was informed by a nearly two-year review process and discussions with the private sector.<sup>[15]</sup> The 2014 circular determined the basic regulatory and supervisory aspects for electronic mobile money services – e.g. license requirements and technical capacities as well as duties and responsibilities of envisioned actors and the bank-oriented providers of such services. It allowed for licensed banks to contract or outsource the provision of electronic mobile money services to telecommunications companies and agents, while holding banks ultimately responsible for the actions of these entities.

Both sets of internationally backed reforms were cut short by the onset of conflict in Yemen. No implementation plan was developed or carried out for Circular No. 11 due to the country's widening political divisions. Meanwhile, the World Bank and IDA project to develop Yemen's financial sector infrastructure was suspended in February 2015, when the World Bank closed its office in Sana'a in response to deteriorating security conditions.

[13] "E-commerce in Yemen: Problems and Prospects Update," Internet Society, 2017, [https://www.internetsociety.org/wp-content/uploads/2017/08/Appendix201\\_E-Commerce20Reserch20Document.pdf](https://www.internetsociety.org/wp-content/uploads/2017/08/Appendix201_E-Commerce20Reserch20Document.pdf). Accessed February 21, 2022.

[14] "Financial Infrastructure Project (P132311)," World Bank, January 12, 2014, <http://documents1.worldbank.org/curated/en/497161468181766918/pdf/ISR-Disclosable-P132311-12-01-2014-1417416231517.pdf>. Accessed February 21, 2022.

[15] John Owens, "Central Bank of Yemen issues new mobile banking regulations," Alliance for Financial Inclusion, March 7, 2015, <https://www.afi-global.org/blog/2015/03/central-bank-yemen-issues-new-mobile-banking-regulations>. Accessed February 21, 2022.

**Figure 1: E-rial usage before the conflict**

Sources: CBY, World Bank

Prior to the conflict, Yemen's e-payment infrastructure and systems were significantly underdeveloped and lacked basic institutional, technical and technological capacities. One of first electronic payment/e-money schemes was rolled out via the government-run GAPPS<sup>[16]</sup> in 2002, in the form of an EFT system to settle some utility bills.<sup>[17]</sup> The project was short-lived because it lacked the required accessibility and technical infrastructure, including a centralized database.<sup>[18]</sup> Moreover, as a non-banking entity, GAPPS operated outside the CBY's existing framework, meaning that its basic e-rial payment system lacked a regulatory basis for payment policies as well as rules denoting how

[16] The GAPPs is fully owned by the government and part of the Ministry of Telecommunications and Information Technology. It offers pensions and utility payment and domestic transfer and deposit services, but it is not legally authorized to offer credit facilities. In 2017, GAPPs had 356 branches and was delivering salaries to around 520,000 governmental employees. (Figures from "Assessment of the Status of Solar PV in Yemen," World Bank, May 2017, <http://documents1.worldbank.org/curated/en/284461511876486207/text/121707-WP-PUBLIC-P158449-WB-RCREEE-Solar-PV-in-Yemen-Report-002.txt>. Accessed February 21, 2022.)

[17] "E-commerce in Yemen: Problems and Prospects Update," Internet Society, 2017, [https://www.internetsociety.org/wp-content/uploads/2017/08/Appendix201\\_E-Commerce20Reserch20Document.pdf](https://www.internetsociety.org/wp-content/uploads/2017/08/Appendix201_E-Commerce20Reserch20Document.pdf). Accessed February 21, 2022.

[18] Ibid.

digital financial services should be licensed, processed, accessed and supervised. In 2011, the Yemeni postal operator signed a partnership with the Social Fund for Development (SFD) to launch its platform “Post Mobily Service”, and develop person-to-person (P2P) payments through allowing access to savings accounts directly from mobile phones, but its limited legal status – lacking authorization to offer credit facilities or issue e-money – prevented it from securing the needed license from the central bank to move forward.

Although the use of e-payments was limited before the conflict began, and the infrastructure for such payments was underdeveloped, as the following section of this paper will show, there has been a clear shift during the conflict. In particular, the de facto Houthi authorities have started placing increased emphasis on developing e-payment systems and regulations in areas they control – promoting the e-rial as part of their ongoing struggle with the internationally recognized Yemeni government for control of the country’s monetary policy and economy.

### 3 | CONTINUED EFFORTS TOWARDS AN E-RIAL DURING THE CONFLICT

President Abdo Rabbu Mansour Hadi ordered the relocation of the CBY headquarters from Sana'a to Aden in September 2016, leaving the central bank fragmented between the two cities.<sup>[19]</sup> This marked the onset of the economic competition between, on the one hand, the Houthi authorities and CBY-Sana'a and, on the other, the internationally recognized Yemeni government and CBY-Aden.<sup>[20]</sup> While the Houthi authorities maintained purview over the country's largest population and financial centers, and the CBY-Sana'a kept much of the physical infrastructure, human resource and financial records needed to run a monetary institution, the CBY-Sana'a has never been internationally recognized as Yemen's central bank. As a result, CBY-Sana'a has no access to the corresponding international privileges and support, and no direct access to global financial networks. Meanwhile, the CBY-Aden has experienced a great deal of difficulty asserting its authority domestically. It is, however, internationally recognized as Yemen's Central Bank, and is thus treated as such by other countries, international agencies and financial institutions, and has access to global financial networks. In the years that followed the relocation of the CBY headquarters, both sides have sought to leverage their respective positions to enforce their own competing monetary policies, battling for control of the local currency.<sup>[21]</sup> This has led to significant distortions in the monetary environment. For instance, while the government and CBY-Aden resorted to printing more money to cover expenditure costs, due to insufficient revenues and foreign currency reserves, the Houthi authorities and CBY-Sana'a looked to limit the use

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[19] "Yemen president names new central bank governor, moves HQ to Aden," Reuters, September 18, 2016, <https://www.reuters.com/article/us-yemen-cenbank-idUSKCN1100WB>. Accessed February 21, 2022.

[20] Mansour Rageh, Amal Nasser and Farea Al-Muslimi, "Yemen Without a Functioning Central Bank: The Loss of Basic Economic Stabilization and Accelerating Famine," Sana'a Center for Strategic Studies, November 2, 2016, <https://sanaacenter.org/publications/main-publications/55>. Accessed February 21, 2022; Farea Al-Muslimi, "Revitalizing Yemen's Banking Sector: Necessary Steps for Restarting Formal Financial Cycles and Basic Economic Stabilization," Sana'a Center for Strategic Studies, February 15, 2019, <https://sanaacenter.org/publications/analysis/7049>. Accessed February 21, 2022.

[21] Anthony Biswell, "Yemen Economic Bulletin: The War for Monetary Control Enters a Dangerous New Phase," Sana'a Center for Strategic Studies, January 21, 2020, <https://sanaacenter.org/publications/analysis/8674>. Accessed February 21, 2022; "Yemen Economic Bulletin: Battle to Regulate Banks Threatens to Rupture the Financial Sector," Sana'a Center for Strategic Studies, November 27, 2020, <https://sanaacenter.org/publications/analysis/12004>. Accessed February 21, 2022.



of newly printed bank notes in Houthi-controlled territories.<sup>[22]</sup> This has resulted in increasingly divergent exchange rates between ‘old rial’ banknotes, used primarily in Houthi-controlled northern areas, and ‘new rial’ banknotes, which circulate throughout the rest of the country.

The promotion of e-money and e-payments is part of the Houthi authorities’ broader monetary and fiscal approach, which seeks to promote liquidity by preventing the movement of rial and foreign currency banknotes out of Houthi-controlled areas. In light of the ongoing decline in the supply of old rial banknotes as existing bills degrade through usage and become unusable, these liquidity concerns are particularly pressing. The YR50 and YR100 banknotes in particular are becoming increasingly scarce.<sup>[23]</sup>

Unlike the internationally recognized Yemeni government and CBY-Aden, the Houthi authorities and CBY-Sana’a, without access to the necessary currency printers, are unable to issue new rial banknotes. They have also refused to accept the Yemeni government’s legitimacy to do so, with the Houthi authorities introducing increasingly severe measures to prohibit the use and circulation of all newly printed rial notes – i.e. those issued by CBY-Aden from January 2017 onwards. This has helped prop up the rial’s value in Houthi-controlled territories. These measures also prevent new rial banknotes being exchanged for foreign currency in Houthi areas,<sup>[24]</sup> another safeguard against the potential outflow of foreign currency.

From 2017 onwards, Houthi authorities have examined various ways of increasing the use of the e-rial.<sup>[25]</sup> Unwilling to direct their limited supplies of old rial banknotes toward paying the salaries of public sector employees, in April 2017 the Houthis established a voucher system designed to enable public sector employees to purchase essential food commodities. The system began to unravel when the authorities did

[22] Farea Al-Muslimi, “Revitalizing Yemen’s Banking Sector: Necessary Steps for Restarting Formal Financial Cycles and Basic Economic Stabilization,” Sana’a Center for Strategic Studies, February 15, 2019, <https://sanaacenter.org/publications/analysis/7049>. Accessed February 21, 2022; Anthony Biswell, “Yemen Economic Bulletin: The War for Monetary Control Enters a Dangerous New Phase,” Sana’a Center for Strategic Studies, January 21, 2020, <https://sanaacenter.org/publications/analysis/8674>. Accessed February 21, 2022.

[23] Anthony Biswell, “Yemen Economic Bulletin: The War for Monetary Control Enters a Dangerous New Phase,” Sana’a Center for Strategic Studies, January 21, 2020, <https://sanaacenter.org/publications/analysis/8674>. Accessed February 21, 2022.

[24] Anthony Biswell, “Yemen Economic Bulletin: The War for Monetary Control Enters a Dangerous New Phase,” Sana’a Center for Strategic Studies, January 21, 2020, <https://sanaacenter.org/publications/analysis/8674>. Accessed February 21, 2022.

[25] “Yemen at the UN – March 2018 Review,” Sana’a Center for Strategic Studies, April 7, 2018, <https://sanaacenter.org/publications/yemen-at-the-un/5563#In-Houthi-Controlled-Areas>. Accessed February 21, 2022.



not provide sufficient physical cash to food merchants when the latter sought to convert vouchers into cash in order to restock their shelves.<sup>[26]</sup> As a result of the Houthi voucher scheme, two exchange rates were prevalent in the market: an undervalued one linked to balances accumulated on voucher credit and another premium exchange rate for cash transactions.

Two years later, in April 2019, the Houthis publicly promoted the e-rial as a means to pay public sector salaries in territories under their control. This proposal was met with resistance, however, as illustrated by the refusal of the Public Telecommunication Corporation (PTC) – also known as Yemen Telecom or Y Telecom, which was envisioned to function nationwide – to integrate an electronic payments system for the payment of staff salaries. After reluctance was also expressed by other state institutions, the Houthi authorities turned to the Sana’a-based Yemen Petroleum Company (YPC) – the sole authorized distributor of fuel in Houthi-controlled territories.<sup>[27]</sup> The introduction of an e-rial pilot program for the payment of YPC employee salaries in mid-2019 was met with opposition by YPC staff, who organized demonstrations in Sana’a against the move.<sup>[28]</sup> With e-rials not widely accepted for transactions, the YPC staff, much like the broader population, wanted physical cash.

On December 18, 2019, CBY-Sana’a issued a circular expanding the ban on new rial banknotes in Houthi-controlled territories.<sup>[29]</sup> Whereas the ban had previously only applied to banks, businesses and money exchange companies, this 2019 circular granted the general population a one-month grace period in which to trade new rial banknotes for either old rial banknotes or electronic currency.<sup>[30]</sup> In the circular, CBY-Sana’a listed three specific mobile money/e-wallet platforms authorized to handle the exchange of “illegal” new rial notes for e-rials: M Floos,<sup>[31]</sup>

[26] The value of the food vouchers depreciated due to a lack of Yemeni rial liquidity. In need of cash themselves, retailers managed two different price schemes: one for coupons and one for cash payments. See: “Yemen at the UN – April 2017 Review,” Sana’a Center for Strategic Studies, May 8, 2017, <https://sanaacenter.org/publications/yemen-at-the-un/99>. Accessed February 21, 2022.

[27] “Game of Parliaments – The Yemen Review, April 2019,” Sana’a Center for Strategic Studies, May 7, 2019, <https://sanaacenter.org/publications/the-yemen-review/7357#Houthi-Authorities-Attempt->. Accessed February 21, 2022.

[28] Ibid.

[29] “Fresh banknotes spark new economic war in Yemen,” Al-Monitor, January 9, 2020, <https://www.al-monitor.com/originals/2020/01/yemen-aden-central-bank-notes-houthi-sanaa-economy.html#ixzz6q7gNYmfl>. Accessed February 21, 2022; a copy of the December 18 CBY-Sana’a circular was also shared with the Sana’a Center.

[30] Per a copy of the December 18, 2020 CBY-Sana’a circular shared with the Sana’a Center.

[31] Rafat al-AKhali, “Yemen Transition 2.0: M-Floos: A Game Changer?,” DeepRoot Consulting, June 2016, <https://www.deeproot.consulting/single-post/2016/06/09/yemen-transition-20-mfloos-a-game-changer>. Accessed February 21, 2022.

owned and operated by Al-Kuraimi Islamic Microfinance Bank; Mobile Money, owned and operated by Cooperative and Agricultural Credit Bank (CAC Bank); and Quality Connect, jointly owned by Yemen Kuwait Bank (YKB), Swaid & Sons for Exchange, and Al Akwaa Exchange.<sup>[32]</sup>

In practice, CBY-Sana'a also granted permission to several other banks and money exchange companies to exchange the new rial banknotes for old ones; these transactions were, however, capped at YR100,000. For those in Houthi-controlled territories without a registered account at any of the financial service providers authorized to provide e-rials, in-kind mobile phone credit was also on offer. The Houthi authorities also announced that they would convert previously confiscated new rial banknotes into e-rials.<sup>[33]</sup>

During 2020, the Houthi authorities finalized a number of measures to reform the previously established legal framework associated with the provision of e-money services. Such measures would, of course, only pertain to areas under Houthi control. In early 2020, CBY-Sana'a established a Payments System Department (PSD) within its organizational structure to develop national e-payment institutional capacity and its functional framework, and to supervise the newly envisioned e-rial payment system. Notably, the CBY-Sana'a, lacking international recognition, received none of the international technical support and capacity-building assistance that was provided to the CBY-Aden in establishing its own PSD (details below).

In March 2020, CBY-Sana'a issued a new directive that expanded the scope of the type of financial service providers eligible to obtain a license to offer e-rial services.<sup>[34]</sup> The directive paved the way for non-bank institutions such as money exchange companies, traders and non-financial institutions to be granted permission to offer e-rial services.<sup>[35]</sup> CBY-Aden challenged the legality of this directive, while senior banking officials warned of the potential repercussions.<sup>[36]</sup> (More on this below.)

[32] Ibid.

[33] Anthony Biswell, "Yemen Economic Bulletin: The War for Monetary Control Enters a Dangerous New Phase," Sana'a Center for Strategic Studies, January 21, 2020, <https://sanaacenter.org/publications/analysis/8674>. Accessed February 21, 2022.

[34] "Decision no. 1 of the Central Bank Governor", the Banking Supervision Sector, Central Bank of Yemen – Sana'a, March 8, 2020, <https://yemen-yba.com/wp-content/uploads/2020/03/قرار-محافظة-البنك-الركزي-لقواعد-التنظيمية-لتقديم-المؤسسات-المالية-خدمات-الدفع-الالكتروني-عبر-الهاتف-للمحول-1.pdf>. Accessed February 21, 2022.

[35] Ibid.

[36] "Cautionary statement [AR]," CBY-Aden statement, April 2020, <https://www.cby-ye.com/2020/04/%d8%a8%d9%8a%d9%80%d9%80%d8%a7%d9%86-%d8%aa%d8%ad%d8%b0%d9%8a%d9%80%d9%80%d9%80%d8%b1%d9%8a/>. Accessed February 21, 2022.

Further expansion of digital currency avenues continued in the first quarter of 2021, with the CBY-Sana'a officially authorizing **WeNet** to operate the payment settlement system among banks and e-wallets. More financial institutions were also permitted to provide customers with e-rials, such as IBY, SBYB, One and Tamkeen. CAC bank was also permitted to collect public revenue in e-rials on behalf of the customs authority.

Furthermore, Houthi authorities have supported a gradual transition to a state e-payment system to pay public salaries and social benefits in electronic form. On November 28, 2021, the Ministry of Finance issued Circular No. 28 of 2021 declaring that the disbursement of public salaries and financial incentives to all government employees would be facilitated solely via the e-government payment system. In early 2022, the Ministry of Finance issued the Circular No. 1 of 2022 to start addressing the payroll arrears, disbursing the first half-month salary of April 2018 to all public service servants across Houthi-controlled areas using the e-payment system via CAC bank and the GAPPS.

### **3.1 | Houthi Alterations to E-Rial Legal Frameworks**

The CBY-Sana'a decree in March 2020 contradicted CBY Circular No. 11 of 2014, which restricted the provision of e-rial services to banks operating in Yemen. The new Houthi legal framework created an opportunity for less regulated actors – such as money exchange companies, traders and other non-bank institutions – to obtain licenses from CBY-Sana'a to perform e-money issuance and e-payment management services previously reserved for banks.

While the bank-oriented model involved a limited number of actors – banks holding trust accounts and issuing e-rials; mobile network operators contracted to deliver network services; and agents available on the ground to manage electronic money services on behalf of banks – the new model gives additional financial institutions the right to obtain a license to contract a third party to manage agent networks delivering e-money services. These financial institutions are then permitted to receive physical cash liquidity in exchange for e-rial balances and manage e-payment services.

In addition, the March 2020 decree set no maximum limit on the amount of e-money one financial institution could issue, overriding the regulation in Circular No. 11 (2014) that mandated that a bank was only allowed to issue electronic money up to 15 percent of its paid

capital and statutory reserves (by law in Yemen, a commercial bank has to put up YR6 billion in capital to be licensed to operate). The decree also created payment instruments outside the mobile phone app, such as prepaid cards and other fintech tools.

### 3.2 | CBY-Aden Response to Houthi E-Rial Push

In January 2020, CBY-Aden warned Yemeni banks and money exchange firms against adhering to the Houthi ban on new rial banknotes and dealing in the e-rial. The CBY-Aden stated that the CBY-Sana'a circular was issued by an illegal entity, outside the legal framework of the banking sector, and would lead to loss of trust in cash. On September 21, 2020, the CBY-Aden issued a circular decrying Houthi authorities' efforts to establish an e-money model and process real-time clearing settlements for interbank payment transactions outside the legal framework of the banking sector.

Over the last two years, CBY-Aden has conducted several consultations with the World Bank, the Arab Monetary Fund (AMF), USAID, and other international development donors to develop a payment system infrastructure. The technical support offered by these bodies has included institutional capacity building; this resulted in the establishment of the CBY-Aden's own Payment Systems Department (PSD). The PSD, intended to oversee payment systems within the CBY-Aden, has also sought to develop the use of e-payments for governmental services and humanitarian purposes.<sup>[37]</sup>

As part of the technical assistance, a same-day settlement arrangement among commercial banks at CBY, using the SWIFT Closed User Group and existing core banking system, was also envisioned to be established in 2019 and 2020. This was seen as a stopgap measure to enable the CBY-Aden to perform its settlement functions until a full real-time gross settlement (RTGS) system is installed. This endeavor was sidelined, however, following increased political and economic instability in Aden in 2019.<sup>[38]</sup>

Similarly, the poor political and security situation in Aden derailed the adoption of Tadhamon Bank' card switch system, which had

[37] "The Central Bank of Yemen: Payment System Capacity Building Workshop," World Bank, April 28 - May 3, 2019, <http://documents.worldbank.org/curated/pt/832121563254060755/pdf/The-Central-Bank-of-Yemen-Payment-System-Capacity-Building-Workshop.pdf>. Accessed February 21, 2022.

[38] Ibid.

otherwise been given the go-ahead after a feasibility review.<sup>[39]</sup> This system has been seen by the World Bank Group as an alternative core infrastructure for connecting banks until the costly RTGS, or any other retail payment system, is established. The system could be used to facilitate the distribution of salaries, pensions, and humanitarian aid, increase electronic transactions and help address liquidity shortages in the market. The switch could be also expanded to cover the interoperability of mobile money services, e-commerce, and bank accounts.

The technical capacity project ended with the drafting of a funding request from the Arab Fund for Economic and Social Development (AFESD) to support the installation of a RTGS system, with technical assistance from the World Bank.<sup>[40]</sup> However, the fulfillment of payment system reforms depends on improvements in southern Yemen's political situation and the ability of CBY-Aden to prepare the ground for change.

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[39] Tadhamon Bank, which includes shareholders from the Hayel Saeed Anam family, is the largest Yemeni bank in terms of asset size.

[40] "The Central Bank of Yemen: Payment System Capacity Building Workshop," World Bank, April 28 - May 3, 2019, <http://documents.worldbank.org/curated/pt/832121563254060755/pdf/The-Central-Bank-of-Yemen-Payment-System-Capacity-Building-Workshop.pdf>. Accessed February 21, 2022.

## 4 | E-MONEY SYSTEMS, INFRASTRUCTURE AND PLAYERS

### 4.1 | The Limits of Comparing International Examples to Yemen

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Globally, there are three broad types of markets to regulate the provision of electronic money services: highly regulated markets; moderately regulated markets; and minimally regulated markets.<sup>[41]</sup> Some studies have suggested that a minimally regulated, nonbank-led model – as seen in countries such as Somalia, South Sudan, Kenya and Tanzania – is generally more enabling of a successful rollout of e-money services.<sup>[42]</sup> Subscribers in a nonbank-led model are not required to own a bank account or have a connection to internet services, as payment transactions occur entirely or partially in cooperation with a mobile network operator (MNO), with banking services being provided via Short Message Service (SMS) and Unstructured Supplementary Service Data (USSD) technologies.<sup>[43]</sup> Meanwhile, the most successful examples of bank-led models have come from electronic money providers that have established a new bank or developed a specialized subsidiary bank to take the lead on e-money services, such as QIWI in Russia and bKash in Bangladesh.<sup>[44]</sup>

A country's specific context is crucial in determining the most appropriate avenue to pursue the expansion of e-money services. Nonbank-led models have tended to be suitable for countries that have developed a strong level of maturity and the necessary controls in electronic money ecosystems or, alternatively, countries at the other end of the spectrum where the exchange rate for domestic banknotes has collapsed and an e-currency has become a necessary alternative to maintain a means of exchange with a reliable store of value.

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[41] Gurpreet Singh Sambhy, "Study of Mobile Payment Services in India", Master of Science Thesis for the School of Information and Communication Technology KTH-Royal Institute of Technology Stockholm, Sweden, 2014, p. 16, [www.diva-portal.org/smash/get/diva2:696343/FULLTEXT01](http://www.diva-portal.org/smash/get/diva2:696343/FULLTEXT01). Accessed February 21, 2022.

[42] "Basic Regulatory Enablers for Digital Financial Services", CGAP, May 2018, <https://www.cgap.org/sites/default/files/researches/documents/Focus-Note-Basic-Regulatory-Enablers-for-DFS-May-2018.pdf>. Accessed February 21, 2022; Also see: Juliet Maina, "Mobile Money Policy and Regulatory Handbook", GSMA, September 2018, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/09/GSMA-Mobile-Money-Policy-Handbook-2018.pdf>. Accessed February 21, 2022.

[43] In Kenya, the MNO enters the market and cooperates with financial institutions to accept money directly from the client; this money is then forwarded to the financial institution. See: Gurpreet Singh Sambhy, "Study of Mobile Payment Services in India," Master of Science Thesis, School of Information and Communication Technology, KTH-Royal Institute of Technology Stockholm, Sweden, 2014, <http://www.diva-portal.org/smash/get/diva2:696343/FULLTEXT01>. Accessed February 21, 2022.

[44] "USAID Report Template (Letter Size)." 27 Dec. 2016, [https://pdf.usaid.gov/pdf\\_docs/PA00MT1H.pdf](https://pdf.usaid.gov/pdf_docs/PA00MT1H.pdf). Accessed May 28, 2021.



Lessons learned internationally regarding how to pursue the development of e-money services have limited usefulness in application to Yemen today however, given the country's unique circumstances. Few countries in the world have ever attempted to launch e-money services while its national monetary policy was bifurcated across active frontlines. In Yemen, the central bank on one side (Sana'a) is dominant domestically, the central bank on the other (Aden) is the sole holder of international legitimacy, large portions of the physical banknotes in circulation are accepted as legal tender in only part of the country, and neither side in the civil war wields the parliamentary authority needed to enact new financial governance legislation. In such an environment, attempts to create an enabling environment for e-money services must be approached cautiously to balance the benefits of wider e-money adoption with the risks of further distortion and fragmentation of the monetary environment.

In Yemen, a highly regulated market – which grants the right to provide e-money services only to banks – was the legal practice prior to 2014. Indeed, the regulatory framework outlined under Circular No. 11 of 2014 established a conservative and narrow model, allowing banks to issue and manage electronic money either directly or through agents, by acting as the intermediary financial channel to open e-money accounts and facilitate cash-in and cash-out services. Under this model, clients and recipients were required to have a bank account to conduct e-money services such as e-payments, balance inquiries and transfers between accounts. The distinguishing facet of this model is that banks are the main legal providers of e-money services while other potential actors, such as mobile phone companies or financial services companies, are secondary players. These secondary players work on behalf of authorized banks either as agents, to deliver cash-in and cash-out services, or to provide the mobile network services essential to operate e-money transactions. The mobile network operator's participation would be limited to providing the data transfer services, while the banks offer individual accounts and organize the infrastructure such as cash-in/cash-out payments through ATMs, branches, or an agent network. The bank-led model created prior to the conflict in Yemen saw a slow service growth as it limits competition and scope for innovators to access unbanked populations.<sup>[45]</sup>

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[45] Inutu Lukonga, "Fintech, inclusive growth, and financial risks: Focus on the MENAP and CCA Regions", International Monetary Fund, September 11, 2018, <https://www.imf.org/en/Publications/WP/Issues/2018/09/11/Fintech-Inclusive-Growth-and-Cyber-RisksFocus-on-the-MENAP-and-CCA-Regions-46190>. Accessed February 21, 2022.

## 4.2 | Licensed E-Money Services Providers and Usage During the Conflict

Between 2015 and 2019, some efforts were made to facilitate e-payments via Yemen's MNOs. During this period, CBY granted four Yemeni banks licenses to provide e-money services via mobile phones: Al-Kuraimi Islamic Microfinance Bank; Tadhamon Bank; Al-Amal Microfinance Bank; and Yemen Kuwait Bank (YKB). CBY-Sana'a licensed the Cooperative and Agricultural Credit Bank (CAC Bank).<sup>[46]</sup> These banks have constructed their own respective e-wallet platforms.

The balance of these e-wallets should equal the total amount held in a pool account, also known as a trust account, with the settlement bank. This pool of e-money is technically owned by e-money holders (who access it via a mobile phone), not by the MNO nor the e-money service providers, who collect physical money from clients in exchange for e-rials.<sup>[47]</sup> As noted, Circular No. 11 of 2014 stipulated that the total amount of e-rials in each bank's e-wallet must be the equivalent of physically deposited rial notes, and the total value of the e-wallet cannot exceed 15 percent of a bank's paid-in capital and legal reserve.<sup>[48]</sup> This is equivalent to the annual reserve amount that a bank must deduct from its net profits as a guarantee of depositors' rights.<sup>[49]</sup>

In general, a functioning cell phone and a bank account are two fundamental prerequisites for conducting mobile e-money services. As distinguished from a traditional account, the customer's electronic account is virtual, linked to a mobile phone number and saved on a data platform linked to a combined bank account (e-wallet) of the licensed bank.<sup>[50]</sup> Customers can open an account at the bank or at any of its agents, and, after installing the mobile app, can transfer money

[46] Al-Kuraimi Islamic Microfinance Bank was the first bank licensed to provide electronic money services, in 2015, but only in 2016 did it launch the service. The second bank to be licensed was Tadhamon International Islamic Bank, in 2016. It started to introduce e-rial services in 2018. Al-Amal Microfinance Bank was licensed in 2017 and the Bank of Yemen and Kuwait and the Cooperative and Agricultural Credit Bank were licensed in 2018.

[47] Abdulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021

[48] According to Circular No. 11 of 2014, a licensed bank is not allowed to issue electronic money exceeding 15 percent of its paid-up capital and the statutory reserve, except with prior approval from CBY. The obligatory value of the e-rial issued by the e-wallet should equal 100 percent of the accumulated trust (pool) account in the bank.

[49] Article (12): Law No. (38) of 1998, Central Bank of Yemen, [http://centralbank.gov.ye/App\\_Upload/law38a.pdf](http://centralbank.gov.ye/App_Upload/law38a.pdf). Accessed February 21, 2022.

[50] CBY Circular No. 11 of 2014, as discussed in: John Owens, "Central Bank of Yemen issues new mobile banking regulations," Alliance for Financial Inclusion, March 7, 2015, <https://www.aifi-global.org/blog/2015/03/central-bank-yemen-issues-new-mobile-banking-regulations>. Accessed February 21, 2022.



between accounts, send remittances, pay bills and purchase goods from registered merchants.

Recent statistics indicate the number of Yemenis using the formal banking system has grown over the course of the conflict, though usage still remains very low relative to the global average of about 69 percent (as of 2017).<sup>[51]</sup> As stated above, almost 2.9 million Yemenis (approximately 10 percent of the population) owned at least one bank account by the end of 2019, including current and savings accounts and accounts with microfinance banks and electronic money accounts.<sup>[52]</sup> However, many citizens still prefer to use money exchange outlets to conduct financial transactions – attracted by the flexible and less costly means of payment. Notably, during the ongoing conflict, money exchange companies have proliferated enormously, with thousands of them being established. This has been accompanied by an erosion, rather than an expansion of central bank oversight. There is no integrated system to connect Yemeni banks with the money transfer and exchange outlets, rather there are various different transfer networks that money exchange companies use but these networks are difficult to inspect and supervise. As well, many money exchange companies are not committed to the minimum compliance procedures in doing their financial services. For instance, by law they are only permitted to perform certain functions like facilitating money exchange transactions or transferring financial remittances but they have turned to perform the functions of banks such as accepting deposits and offering loans.

While a cursory evaluation of statistics indicates that e-rial services expanded during the conflict, this does not tell the full story. The total amount of e-money issued from 2016 to 2019) amounted to YR115 billion, while in 2019 alone some YR75 billion was issued. Based on recently published indicators, the number of e-money accounts also surged substantially between 2017 and 2019, from around 82,000 to over 800,000, with 91 percent of the new accounts opened in urban areas, and two-thirds opened in 2019 alone.<sup>[53]</sup> Many of these accounts were temporarily created following the Houthi ban on the circulation of new rial banknotes, which required citizens possessing new banknotes

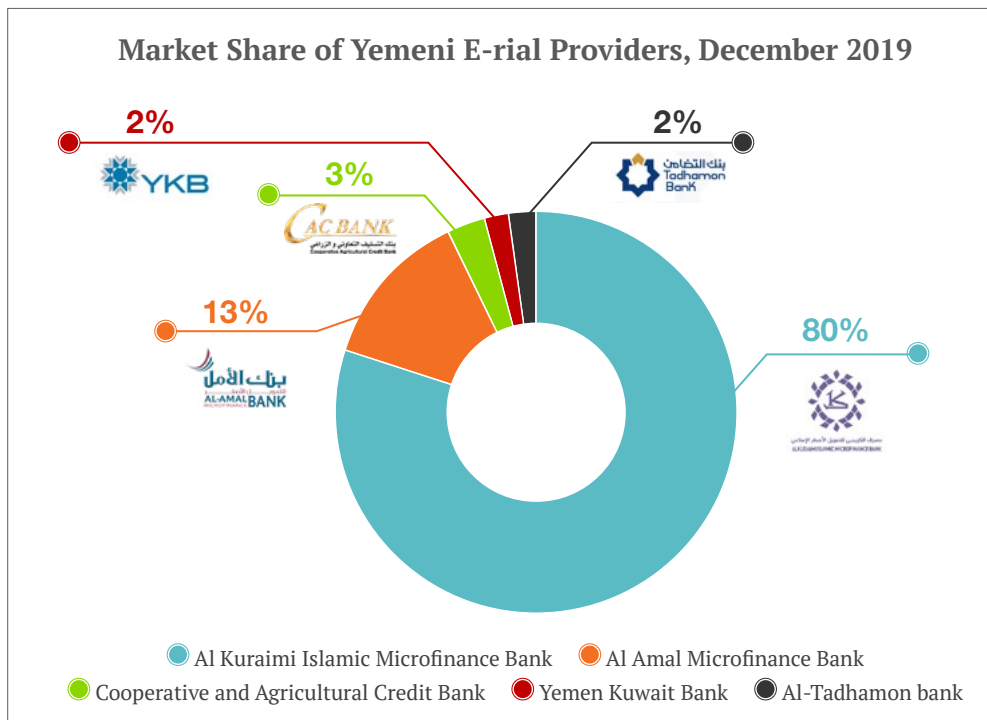
[51] Asli Demirgüç-Kunt et al., “The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution”, World Bank Group, 2018, <https://openknowledge.worldbank.org/handle/10986/29510>. Accessed January 2, 2021.

[52] Abdulghani Mohamed AlSamawi et al., “Electronic Payment Services in Yemen: Challenges and Opportunities for Success,” Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.

[53] Ibid.

to deposit them into electronic accounts opened with listed e-money financial service providers in exchange for physical old rial notes or e-rials. E-rial accounts have also been opened to receive salaries, humanitarian cash transfers and incentives, and pay utility bills, but overall use remains relatively low.

**Figure 2**

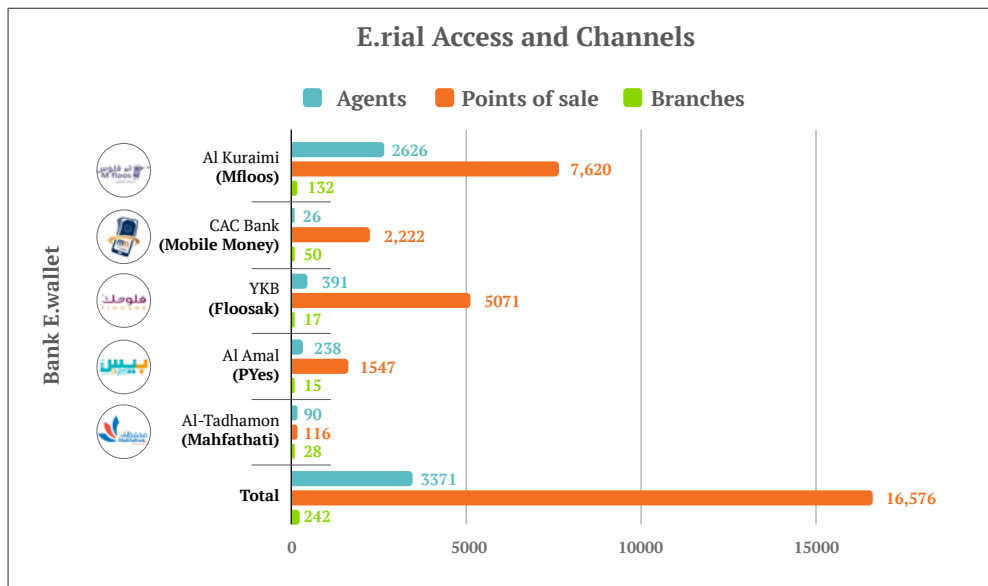


*Source: Institute of Banking Studies, Sana'a, Yemen*

One institution, Al-Kuraimi Islamic Microfinance Bank, handled 80 percent of total e-money accounts in 2019.<sup>[54]</sup> This was largely due to Al-Kuraimi's wide geographic coverage – the bank operates 132 branches, 2,626 agents and 7,620 points of sale, including in many rural areas – and the fact that it has been one of the main financial service providers used by INGOs to reach beneficiaries with cash aid transfers across Yemen.

[54] ulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.

**Figure 3**



Source: Institute of Banking Studies (Sana'a)

The integration of the e-wallets held by these five banks is limited. As of this writing there is still limited capacity to complete money transfers between accounts held with different commercial, and technically independent, services providers operating on different platforms (e.g. mobile wallet to bank account). A client can only transfer money from one electronic account to another held in the same e-wallet or between the five participant banks that have been recently connected to the financial switch interbank network led by YFSC under the business identity and brand, WeNet, in Houthi-controlled areas. Individuals without an e-money account can only receive money in cash according to transaction ceilings dictated by Circular No. 11 of 2014: YR30,000 per financial transaction and YR50,000 for total transactions per day, while the maximum e-rial balance per person cannot exceed YR300,000.<sup>[55]</sup> The circular created limited Know Your Customer (KYC) requirements for identification, where a potential client has to provide the personal ID with a national number to open a financial account within e-money wallets. For the transfer of money from an e-money-based account to a client not subscribing to electronic money services, a two-tiered approach for identification of financial transfer recipients is applicable. The first tier requires a personal ID (without a national number) and other means of alternative identification such as a family card, military card, social security card, electoral card, or passport for

[55] CBY Circular No. 11 of 2014, as discussed in: John Owens, “Central Bank of Yemen issues new mobile banking regulations,” Alliance for Financial Inclusion, March 7, 2015, <http://beta.wenet-ye.com/en/about>. Accessed February 21, 2022.

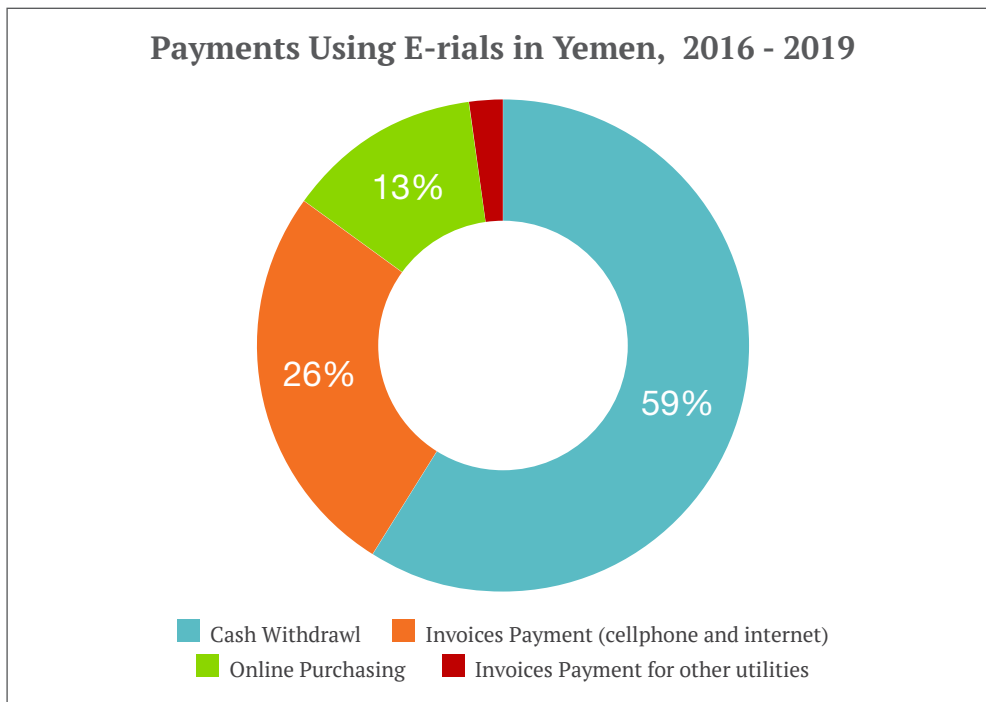
foreigners for the receiving of a financial transfer up to YR50,000. The second tier requires a personal ID along with a national number, or a passport for foreigners for receiving financial transfers above YR50,000 cap. Similarly, identification means required for opening financial accounts are also limited, up to YR30,000 and above for the first and second tier of identification respectively. As more than half of Yemen's adult population does not have a national identification card, which has become difficult to attain since the onset of the conflict, access to e-money services in the absence of other acceptable means of identification is very challenging.<sup>[56]</sup>

A client subscribed to an e-wallet can convert an e-rial balance into cash either through a branch of their bank or through one of the intermediary agents working on behalf of their licensed bank. These agents access e-wallets and settle transactions electronically via terminals connected to the e-wallet bank information systems. Cash-in and cash-out agent networks taking part in the provision of e-money services are insufficient and concentrated in urban areas. Due to the ongoing shortage of old rials, bank agents often restrict or impose delays on customers attempting to withdraw cash, particularly outside urban areas. E-money payments as a share of total payments is an indicator as to the extent to which e-money instruments have become acceptable means for conducting financial transactions in the financial market. The use of e-rials across the country since 2016 under the bank-led model has been restricted to financial transfers among held accounts, capped cash-in or cash-out transactions, and to a minimal extent the payment of cell phone, internet, electricity, and water bills, which can be made easily via GAPPs branches or money exchange outlets. From 2016 to 2018, total transactions made through e-money services accounted for just 1 percent of the total YR4.35 trillion in average annual payments made through the banking sector.<sup>[57]</sup> In 2018, transfers among electronic money and banking accounts as well as cash-in and cash-out transactions represented 95 percent of the electronic money transactions (of which 9 percent was cash-out payments), while the value of financial transactions conducted to disburse electricity, cell phone, and internet bills, and carry out commodity purchases only represented 1 percent.<sup>[58]</sup> The overall utility of an e-money account is, therefore, limited.

[56] "E-MONEY SERVICES AND THEIR POTENTIAL IN YEMEN ANALYSIS OF GAPS AND OPPORTUNITIES", Chemonics International for USAID, December 27, 2016, [https://pdf.usaid.gov/pdf\\_docs/PA00MT1H.pdf](https://pdf.usaid.gov/pdf_docs/PA00MT1H.pdf). Accessed 28 May. 2021

[57] Numbers were compiled from: Abdulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021. The total value of e-money payments each year from 2016 to 2019 was: In 2016 YR101,685,663; in 2017 YR11,393,123,266; in 2018, YR 31,243,779,947; in 2019, YR118,905,021,167.

[58] Ibid.

**Figure 4**

*Source: Institute of Banking Studies (Sana'a)*

### 4.3 | The National Financial Switch Interbank Network

Amid the growth of electronic payment systems in northern Yemen, the question of which institution should be assigned to administer the National Financial Switch Interbank Network (NFSIN) has led to increased competition. In 2006, a group of 11 Yemeni banks registered the Yemen Financial Services Company (YFSC). However, this private sector-based organizational structure for performing real time gross settlement among financial service providers made no progress in making the NFSIN operational for more than a decade. In 2017, Murooj, a subsidiary of Hayel Saeed Anam (HSA) Group, the largest business conglomerate in Yemen, acquired 25 percent of YFSC's capital to save it from potential bankruptcy. The acquisition of YFSC, later operated under the business brand name **WeNet**, came after fierce competition with **Quality Connect**, a company created to perform similar roles. Two financial companies, ONE Cash and Tamkeen, have subsequently been established to provide electronic payments and e-wallet services.

In September 2020, the WeNet announced that it was launching the first phase of an instant transfer scheme<sup>[59]</sup> (ITS) for real time retail payments among participant banks, before moving to the second phase that would target customers of money exchangers. In mid-September 2020, WeNet started to process instant money transfers among the six participant banks subscribing to its network: Yemen Bank for Reconstruction and Development, Yemen Kuwait Bank, Shamil Bank of Yemen and Bahrain, Saba Islamic Bank, Islamic Bank of Yemen for Finance and Investment, and CAC Bank.<sup>[60]</sup> Until now, the ITS saw limited market acceptance, being restricted to conducting instant transfer payments in Houthi-controlled areas, and as a completely cash-based transfer payment mechanism allowing neither money transfers from electronic wallet-based accounts nor from non-cash-based bank accounts into cash-based bank accounts – a legal prerequisite of e-money prevalence. According to a credible source close to e-money market developments in Houthi-held areas, the launching of ITS by WeNet came after it was given the green light for a license from the CBY-Sana'a to manage the financial switch interbank network.

HSA Group is also working to introduce a new mobile money system called ONE Cash, which has been envisioned to transform the nature and scope of mobile money and e-money usage in Yemen. In mid-2020, ONE Cash sought approval from both CBY-Sana'a and CBY-Aden to start operations. While CBY-Sana'a issued an initial e-money license to ONE Cash in July 2020, CBY-Aden has not yet accepted its request to obtain the license. (Despite receiving the final license in early 2022 from the CBY-Sana'a, as of this writing ONE Cash is yet to launch operations in Houthi-controlled areas.)

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[59] The ITS initiates the provision of five instant transfer services: instant transfer from any cash-based bank account to other cash-based account in another bank; instant transfer from any cash-based bank account to any electronic wallet; instant transfer from one electronic wallet to another; and instant transfer from any electronic wallet to any cash-based bank account

[60] WeNet, September 17, 2020, <https://www.facebook.com/WeNetSwitch/photos/a.177399200511135/177875193796869/>. Accessed February 21, 2022.

## 5 | E-RIAL PROGRESS: CHALLENGES AND PROSPECTS

### 5.1 | Existing Challenges Preventing E-Rial Expansion

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The installation of an e-rial payment system in Yemen must be accompanied by modernized credit infrastructure, digital connectivity infrastructure and fintech-powered e-money services. Until now, the infrastructural components for operating e-currency and e-payment systems are either underdeveloped or yet to come online. The interoperable digital and financial infrastructure, such as the RTGS, essential for settling high-volume transactions and enabling digital interoperable payments, still does not exist. When interoperability is absent, individuals and businesses are forced to maintain multiple accounts and deal with different types of financial transactions, leading to inefficiencies in and restrictions on the use of digital payment.<sup>[61]</sup>

Moreover, the automated clearing house (ACH)<sup>[62]</sup> essential for processing retail payment transactions between banks and other financial players is not secured. Neither CBY-Sana'a nor CBY-Aden – nor, indeed, the commercial banks – operate through an electronically integrated system. Instead, they carry out payments independently and in complete isolation from one another. Although the central bank acts as a settlement agent for financial transactions among banks, this task is fulfilled outside the ACH. Checks must be processed manually while SWIFT-based payment orders remain the primary avenue for large value payments.<sup>[63]</sup>

Outside the formal banking system, money exchange outlets also operate in a disconnected manner. Some money exchangers have developed interconnectability infrastructure, where a group of money exchange companies have been connected into an integrated transfer network that allows participants to settle transactions instantaneously and make wire money transfers quickly and cheaply, in comparison to the more expensive financial services banks provide. This ability,

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[61] Ceyla Pazarbasioglu, Alfonso Garcia Mora, Mahesh Uttamchandani, Harish Natarajan, Erik Feyen and Mathew Saal, “Digital Financial Services,” World Bank Group, April 2020, <http://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf>. Accessed February 21, 2022.

[62] An automated clearing house (ACH) is an electronic system serving financial institutions to facilitate financial transactions at the close of business each day. In Yemen, the CBY conducts the end-of-day settlement between banks using cheques instead of having the process automated. This, therefore, is a central challenge for the e-rial to become operational.

[63] “Making Electronic Payments Work for Humanitarian Response,” International Rescue Committee, May 2016, <https://www.rescue.org/sites/default/files/document/469/makeinge-paymentsworkforhumanitarianresponse-final1.pdf>. Accessed February 21, 2022.



along with money exchangers' longer operating hours compared to commercial banks, has helped exchange outlets dominate the financial market in Yemen.

During the conflict, the extremely costly and low speed of internet services in Yemen and the limited mobile phone network coverage have been two of the biggest obstacles for clients with e-money accounts at any of the five banks offering mobile banking and e-wallet services. Yemen's digital connectivity infrastructure, information and communications technology (ICT) sector<sup>[64]</sup> and electricity provision – essential for the functioning of the financial system and e-money services providers – is the weakest in the Middle East and North Africa (MENA) region.

Yemeni mobile network operators have been technologically unprepared and have, as a result, refused to provide unstructured supplementary service device (USSD) and integrated voice recording (IVR) services to e-payment providers.<sup>[65]</sup> The USSD, a communication channel controlled by MNOs, is critical for securely providing mobile financial services to all cell phones through encrypted SMS text messaging. This system, if implemented, would result in lower costs compared to the existing model of providing e-money services through banks.<sup>[66]</sup> The lack of a USSD service has restricted the ability to serve illiterate and limited-income persons who live in rural areas, use non-smart phones and are disconnected from the internet.

While the number of mobile phone subscriptions in Yemen increased five-fold between 2006 and 2016, from 3 million to 16 million subscribers, the mobile penetration rate for the total population remained the lowest in the MENA region, at almost 57 percent,

[64] The information communication sector is highly dominated and monopolized by the Ministry of Telecommunications and Information Technology and state-owned institutions working in the sector. Although the ministry manages only one of the four mobile operators working in the country (Yemeni Mobile Company), it controls many aspects of telecommunication services and has refrained from granting licenses to local mobile operators to provide 3G or 4G services. Mobile operators have to go through the Yemen Net service provider for internet service and through Tele Yemen to make international calls. The government also, through its Yemen Telecom Corporation, owns and controls the domestic public switched data network. For details, see: Mansoor al-Bashiri, "Impacts of the War on the Telecommunications Sector in Yemen", Deeproot/Sana'a Center for Strategic Studies/CARPO. Rethinking Yemen's Economy Policy Brief 21, January 11, 2021, [https://devchampions.org/publications/policy-brief/Impacts\\_of\\_the\\_War\\_on\\_the\\_Telecommunications/](https://devchampions.org/publications/policy-brief/Impacts_of_the_War_on_the_Telecommunications/). Accessed February 21, 2022.

[65] Abdulghani Mohamed AlSamawi et al., "Electronic Payment Services in Yemen: Challenges and Opportunities for Success," Institute of Banking Studies, May 2020, <http://www.ibs.edu.ye/sites/default/files/Electronic%20Money%20Service%20in%20Yemen%20-%20Challenges%20and%20Opportunities%20for%20Success.pdf>. Accessed January 2, 2021.

[66] Barnabas Andiva, "Mobile Financial Service and Regulation in Kenya," Competition Authority of Kenya, [https://static1.squarespace.com/static/52246331e4b0a46e5f1b8ce5/t/5534a332e4b078bae80cbaeb/1429513010529/Barnabas+Andiva\\_Mobile+Money+Kenya.pdf](https://static1.squarespace.com/static/52246331e4b0a46e5f1b8ce5/t/5534a332e4b078bae80cbaeb/1429513010529/Barnabas+Andiva_Mobile+Money+Kenya.pdf). Accessed February 21, 2022.



compared to a regional average of over 100 percent.<sup>[67]</sup> In 2015, only 1.7 percent of Yemeni citizens could access 3G or mobile internet services.<sup>[68]</sup> Iraq and Afghanistan, also conflict-affected countries, have recorded higher mobile penetration rates – of 91 and 89 percent respectively.<sup>[69]</sup> Additionally, while the prices of mobile voice calls and SMS services in Yemen are around average in the context of the MENA region, Yemen ranks as the 17th most expensive of 20 MENA countries in terms of broadband.<sup>[70]</sup>

Internet connectivity and electricity supply have been negatively impacted during the conflict. In 2020, damage to an underwater cable temporarily shut down 80 percent of Yemen’s internet capacities, affecting the ability to conduct commercial and financial transactions nationwide.<sup>[71]</sup> Smartphone apps used to operate the e-rial payment do not work when the internet service is cut or the operating speed is low. On January 21, 2022, the Saudi-led coalition airstrike on a telecommunications building located in the Red Sea city of Hudaydah knocked out power to the country’s primary internet access point, causing a large-scale and complete blackout of internet connectivity for four days in many areas of the country. During the ongoing conflict, Yemen’s electricity supply – already unreliable pre-war – has further collapsed, with infrastructure attacks and fuel shortages cutting off the majority of the country’s population from grid-supplied electricity. Continued fragility in electricity supply would likely impact the operations of financial institutions that rely heavily on Yemen’s internet infrastructure to provide digital financial services.<sup>[72]</sup>

During 2020, Yemen’s mobile network operators were competing for licenses to upgrade their networks for the provision of 3G/4G services and to secure higher capacity mobile broadband services. In September 2020, the privately owned telecommunications company **Sabafon**

[67] Simon Kemp, February 18, 2020, “Digital 2020: Yemen”, DataReportal, <https://datareportal.com/reports/digital-2020-yemen>. Accessed February 21, 2022.

[68] “Input to The Yemen Policy Note No. 4. on Inclusive Services Delivery: Yemen Information & Communication Technology (ICT),” World Bank Group, May 2017, <http://documents1.worldbank.org/curated/es/337651508409897554/pdf/120531-WP-P159636-PUBLIC-Yemen-ICT-Policy-Note-Input-to-PN-4.pdf>. Accessed February 21, 2022.

[69] Ibid.

[70] Ibid.

[71] Lily Hay Newman, “Cut Undersea Cable Plunges Yemen Into Days-Long Internet Outage,” Wired, January 13, 2020, <https://www.wired.com/story/yemen-internet-blackout-undersea-cable/>. Accessed February 21, 2022.

[72] Inutu Lukonga, “Fintech, inclusive growth, and financial risks: Focus on the MENAP and CCA Regions”, International Monetary Fund, September 11, 2018, <https://www.imf.org/en/Publications/WP/Issues/2018/09/11/Fintech-Inclusive-Growth-and-Cyber-RisksFocus-on-the-MENAP-and-CCA-Regions-46190>. Accessed February 21, 2022.

relocated its headquarters from Sana'a to Aden, following regular lawsuits and legal verdicts against it by Houthi authorities attempting to extract sizable levies, including alleged backdated taxes, from the company. Following the relocation, Sabafon announced that it has set a strategic plan to launch 4G and 5G mobile phone services with support from the Aden-based Ministry of Telecommunications and Information Technology.<sup>[73]</sup>

Meanwhile, Yemen Mobile Company, the major government-owned mobile network operator based in Sana'a, has been implementing a large project over the last few years to develop and upgrade its mobile network infrastructure from 3G to 4G to expand network coverage and the quality of mobile internet services, and launched its 4G service in early January 2022. The fragmentation of the mobile communication systems legal framework between Sana'a and Aden could, however, still restrict mobile network services upgrades necessary to facilitate the more efficient operation of the e-rial payment system.

In sum, a number of obstacles would need to be addressed in order to increase the utility and usage of the e-rial in Yemen. These include: a heavily cash-based economy; poor telecommunications infrastructure coverage; low consumer trust in financial service providers; the absence of a proper regulatory environment (ie. one that maintains necessary oversight but leaves room for market growth and innovation); low general awareness about mobile money and e-wallet services offered by financial service providers; issues related to legislation and regulation (buyer and seller protections); limited technological capacity of e-payment service providers; and security considerations (verification and authentication issues).

## 5.2 | Prospects for E-rial Development

The inauguration of electronic payment systems in Yemen must start by addressing its fundamental requirements and developing a coherent ecosystem for operating them. The architecture for e-payments systems involve the interaction between the key actors in a mobile payment ecosystem that is highly unlikely under dual political and economic structures prevailing currently in the country. The fragmentation in the legal framework of monetary and financial policies in general and over provision of digital financial services in particular in Yemen would

[73] "Battle for Marib – The Yemen Review, September 2020," Sana'a Center for Strategic Studies, October 10, 2020, <https://sanaacenter.org/publications/the-yemen-review/11678>. Accessed February 21, 2022.

remain one of the greatest challenges. Two distinct models have been created out of the two competing central bank branches: a recently created non-bank model in Houthi-controlled areas and CBY-Aden sticking to the bank-led model created prior to the conflict.

In addition, the development of e-payment services would be constrained by weak information and communications technology (ICT) infrastructure and high service costs linked to e-money provision. The ICT and e-money platforms essential to operate e-payment services would continue to be nonexistent while suffering the repercussions of the conflict for years to come. Effectively implementing the necessary regulatory reforms for e-payment services is also highly unlikely under dual political and economic realities.

The de facto Houthi authorities have attempted to develop the digital financial services through the government e-payment system. However, the prominence of cash-based transactions in Houthi-held areas is only reinforced by the Houthi-affiliated National Salvage Government (NSG) and CBY-Sana'a policies of accepting public revenues only in cash, and to this end creating distinct cash-based accounts for collecting government dues. In mid-November 2020, the NSG officially announced the suspension of salary payments to public servants working in Houthi-held areas, and this has likely discouraged e-rial payments through the government spending window. However, from early 2022 the Houthi authorities launched an ambitious e-government payment system to initiate government-to-person (G2P) transactions through electronically disbursing public salaries and financial incentives to government servants working in Houthi-controlled regions. The success of such a move would depend on several factors; whether an adequate liquidity is in place to complete transactions; the availability of convenient access points and reliable agent networks that guarantee customers an unlimited access to cash-in/cash-out services (to easily cash out funds received in digital form); and finally, the degree to which incentives are created for merchants and businesses to invest in electronic payment services and accept them unhesitantly in conducting their financial transactions.

The liquidity crisis has demolished the trust in the banking system and in the Yemeni rial to act as a store of monetary value and medium of exchange in settling financial transactions. Financial service clients have found their deposits stuck in the banking sector, while all rial-dominated holdings and investments have depreciated in real value due to high inflation and rapid cycles of rial depreciation. Additional barriers to e-money payment services adoption include low financial

literacy and a cultural preference for cash. Indeed, Yemeni customers and businessmen often prefer cash payment means conducted outside formal financial networks. They have negative perceptions about formal financial products and are more familiar with local money exchange agents which are flexible, convenient, unmonitored and anonymous. The consumers' high mistrust in the government and commercial banks has been one of the reasons for the low demand for digital money in the country. In addition, documentation requirements to open DFS accounts can pose barriers to displaced and low-income populations.

Yemen is currently experiencing the world's worst humanitarian crisis with an estimated 24 million people in need of some form of humanitarian assistance while the majority have limited financial options on how to live and feed themselves the next day. This indicates that a large segment of Yemeni population has no out of the pocket money to save for depositing in e-rial balances. On the other hand, while millions of Yemeni citizens are recipients of cash transfers and aid funds from humanitarian organizations, e-wallet service providers have been utilizing fintech platforms to serve targeted beneficiaries through e-money payment tools, and this could serve as an entry point for DFS expansion. Allowing this to succeed would depend on how the fractured status of the Yemen monetary scheme would be adopted to embrace mobile money platforms and services.

## 6 | RECOMMENDATIONS

Improved digital financial services and electronic money could potentially be transformative in addressing Yemen’s humanitarian crisis through expanding and facilitating financial inclusion. However, given the current political crisis, the fragmentation in monetary policy and regulation between competing central banks, and the underdeveloped state of e-payment infrastructure in the country, widespread development of e-money services is unlikely to emerge.

During the conflict, any enforcement of aggressive unilateral steps by any of the competing parties to the conflict could deepen the division in the institutions involved in operating the e-payment services. As well, international stakeholders interested in developing e-money services in Yemen should keep the “Do No Harm” principle paramount. Creating a situation in which two rivaling entities in the same country were both treated as legitimate monetary authorities by the international community would have profoundly distortive repercussions across the Yemeni economy.

Holistic initiatives to strengthen the Yemeni e-money and e-payment ecosystem are invariably tied to ending the political division and stabilizing the monetary regime – which must start by unifying the CBY and the official exchange rate, addressing the severe liquidity crisis, and ending the currency war. However, until the resolution of the political and central banking crisis, some initiatives under the current circumstances could be launched:

### 6.1 | Short- to Medium-Term Recommendations

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- Until the unification of central banking administration in Yemen, the fragmented CBYs in Sana’a and Aden should cautiously approach any regulatory changes governing e-money services to balance the benefits of enabling wider e-money adoption with the risks of further distortion and fragmentation of the monetary environment.
- International stakeholders should investigate possible avenues to support the reunification of the CBY and end the current currency war. Specifically:
  - Look to unify the regulatory framework governing the e-money system and monetary and financial policies.
  - Work to encourage coordination among the CBY branches, Yemeni banks, and the communication companies to eliminate barriers and

- unify any possible efforts toward facilitating the provision of digital financial services in the country. It is essential to ensure easy access to ICT infrastructure such as USSD & IVR, which should provide electronic money services at reasonable prices.
- Support initiatives for commercial banks and businesses to prepare for financial intermediation and e-commerce expansion, but without distorting the monetary environment.
  - Refrain from supporting developments in e-money services that are outside of the current legal framework in Yemen. Specifically, humanitarian agencies trying to implement cash transfer programs through e-payment mechanisms should ensure that they are adhering to the “Do No Harm” principle.
- International development institutions and INGOs intervening to support the payment system infrastructure and enhance financial intermediation in Yemen should ensure that they do not support any actions or activities that deepen the schism in Yemen’s central bank and make reunification of the monetary environment more difficult.
  - As almost all of technical assistance and capacity-building programs by external donors such as the World Bank Group, IMF, and the Arab Monetary Fund (AMF) have been implemented only to support the CBY-Aden, the CBY in Aden should:
    - Make use of the technical assistance support to address its technological, infrastructural, human resources and regulatory gaps.
    - Strengthen the institutional and governance structure of the national payment system and the Payment Systems Department (PSD), established in mid-2020 inside CBY, and equip the PSD with needed qualified staff and overall capacity to operate and oversee the national payment system.
    - Initiate a project to fully integrate the national switch, and lay out the groundwork to automatically connect the CBY with all commercial banks in the country, to conduct automated check clearing transactions. This should involve using a same-day interbank settlement as a temporary solution, by using the SWIFT Closed User Group and the existing core banking system until the highly costly RTGS system is established.
    - Explore potential avenues to develop a fully operational card/mobile money Switch. This should be done through utilizing the existing card switch owned by commercial banks and private sector investors to facilitate the distribution of salaries, pensions, humanitarian aid as well as the collection of taxes, customs, and other government due fees. Such initiatives would result in increasing digital payment transactions, cover interoperability of mobile money services, and contain the extreme liquidity shortage prevailing in the market.

- Capitalize on donor-funded efforts from USAID and other donors aimed at scaling up the use of e-money in Yemen. This would involve integrating e-money into government/donor-led crisis cash transfers, optimizing the existent payment infrastructure to encourage Yemeni merchants to use electronic payment methods for goods and services at the retail and wholesale levels, as well as expanding the technical capacities to the providers of e-money services, including licensed and regulated banks, to improve the e-money enabling environment.

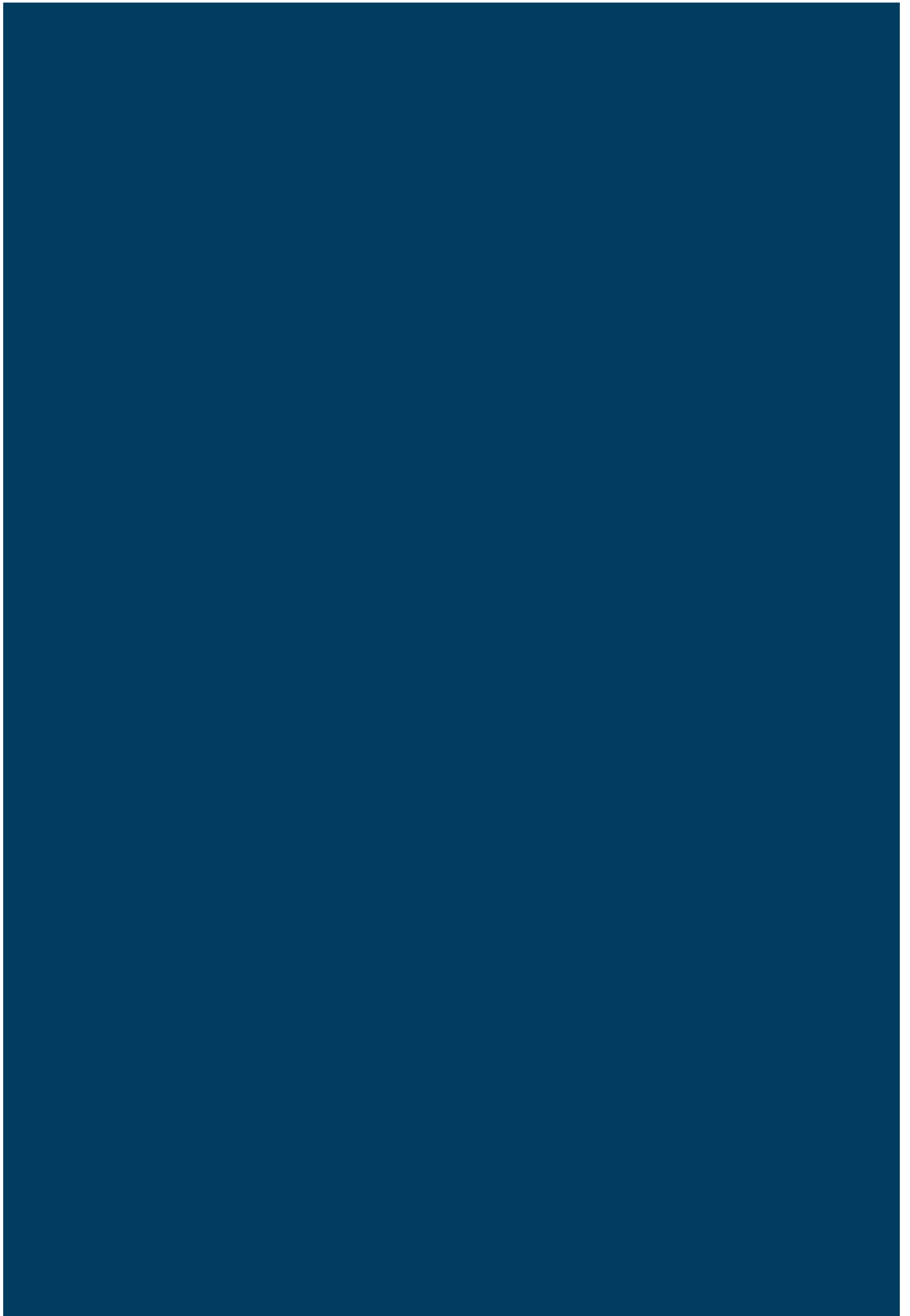
## 6.2 | Long-Term Recommendations

- Develop strategic plans to stabilize the monetary regime and foster recovery of the financial system. A detailed action plan must aim to address the international isolation of the country's banking sector that has resulted from the perception of Yemen as being 'extremely high-risk'. It should also aim to restore a larger share of the monetary cycle to the formal financial system and enhance its robustness to play a key role in reforming the digital financial services. A national risk assessment could be undertaken to identify and assess anti-money laundering (AML) and combatting the financing of terrorism (CFT) risks impacting Yemeni banks and then take the necessary actions to mitigate such risks.
- Develop a national payment systems strategy to strengthen the payment infrastructure and facilitate a well-studied shift to electronic payments through the following:
  - Develop comprehensively consolidated legal and regulatory reforms to protect the integrity of the financial system and update the current laws and circulars governing the provision of electronic money and e-payment services in the country. The new regulatory framework should encourage the creation of private digital service providers, allow a gradual shift to a non-bank led model for e-currency issuance and the development of widespread agent networks that strike a balance between innovation enhancement and mitigating risks of fraud, money laundering, and insolvency. It should also include legal articles to safeguard consumer protection and foster customer confidence in DFS.
  - Develop the country's ICT infrastructure through taking advantage of successful modern technologies used in other developing countries, such as Somalia, South Sudan and Kenya, to provide electronic payment services. The USSD, a communication channel controlled by MNOs, is critical for securely providing mobile financial services to all cell phones through encrypted SMS text messaging. This system, if implemented, would result in lower costs compared to the existing model of providing e-money services through banks.

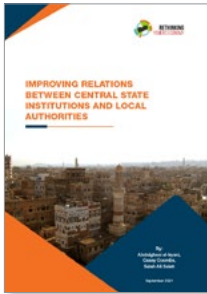


- Identify the operational environment and requirements of the RTGS system that are essential to settle all high-value and systemic payment transactions as well as the automated clearing system (ACH) to process retail payments between banks and other institutions.
  - Deploy the digital means to access financially excluded and underserved populations at a cost affordable to customers and sustainable for providers.
  - Develop a national financial inclusion plan to support the spread of mobile money, the inclusion of youth and women, enhancing client and digital financial literacy.
  - Establish a digital foundational identity (national identity scheme) to overcome barriers to usage, in particular for individuals in rural areas, and foster alternative forms of ID to open up e-money accounts for Yemenis without national ID.
- To unleash the potential of mobile money, regulators must create an open and level playing field that allows both banks and non-bank providers to offer mobile money services, which are well suited to building sustainable services and extending the reach of the formal financial sector rapidly and soundly. This would help to advance financial inclusion, stability, integrity, and consumer protection, and is consistent with the Bank for International Settlements' (BIS) international best practices in financial regulation. Increased outreach to hard to reach rural areas and overall financial system liquidity would be welcomed by humanitarian actors that seek to make secure cash transfers to beneficiaries in rural areas.

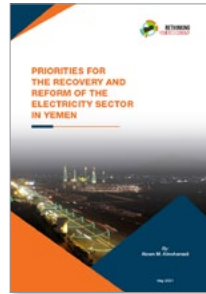




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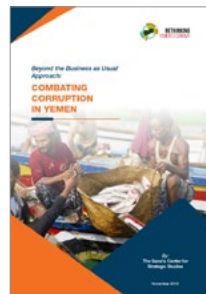
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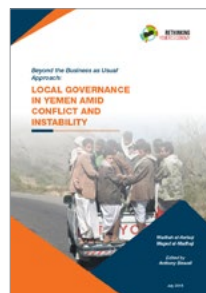
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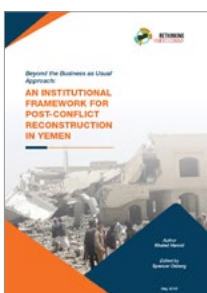
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