Working paper

Impact of conflict on the financial sector in Yemen: implications for food security

Sherillyn Raga, Sherine El Taraboulsi-McCarthy, Moizza Binat Sarwar and Yazeed al-Jeddawy

December 2021

Abstract

In a country as poor as Yemen, food insecurity has long been an endemic challenge. The conflict has since propelled millions more people into food insecurity, through direct conflict impacts and indirect effects on market prices and household incomes. By utilising mixed methods, this paper analyses how the fragmentation and deterioration of the financial sector act as an operating channel that contributes to food insecurity in Yemen.

Our findings suggest two central developments among Yemen's financial institutions and agents. First, the conflict has weakened the banking sector capacity, contributing to a loss of confidence in formal financial institutions. As a result, there has been an increasing reliance on informal financial institutions and agents for financial services in Yemen. Second, the conflict has expanded to an economic war over differential public salary distribution, revenue mobilisation, trade financing support and exchange rate management, affecting prices and financial transaction costs. These developments have contributed to inefficiencies in the financial system, creating negative knock-on effects on food security. These effects include reduced food demand as a result of eroded purchasing power, sub-optimal imported food supply due to lack of foreign exchange, and discouraged agricultural production due to low availability of credit.

Our analysis highlights that ending the war is the ultimate policy priority for Yemen. We also offer entry points for the international community to help stabilise financial sector operations and facilitate convergence in economic and monetary policy more broadly. These include intermediation for parties to insulate financial services from political influences, providing higher levels of aid than previous commitments, expediting digital investment, and increasing capacity building for financial services providers and consumers. These recommendations are expected to create positive knock-on effects on food security in Yemen.

How to cite: Raga, S., Binat Sarwar, M., Taraboulsi-McCarthy, S. and al-Jeddawy (2021) *Conflict and the financial sector in Yemen: Implications for food security.* ODI Working Paper. London: ODI (www.odi.org/en/publications/impact-of-conflict-on-the-financial-sector-in-yemen-implications-for-food-security/).

Disclaimer: This paper has been prepared as part of the 'Shifting the dial on the IPC rating on Yemen: Evidence for Action' project, which is supported by OCHA and UNDP. Responsibility for the findings, views and conclusions expressed in this paper rests solely with the authors and do not necessarily represent the views of OCHA or UNDP.

Acknowledgements

This paper is part of the larger project: 'Shifting the Dial on the IPC Rating in Yemen – Evidence for Action (YEA)'. The project is a collaboration between ODI, Mercy Corps and ACAPS. It contributes to strengthening the evidence base to combat food insecurity in Yemen, focusing primarily on routes to macroeconomic stability and lowering the cost of food as a complement to the large-scale humanitarian assistance programmes already underway.

The paper benefited from the insights of 41 international and local actors in Yemen during the virtual roundtable discussion ('Shifting the IPC dial in Yemen') organised by ODI on 27 May 2021. The authors are grateful for feedback and comments on earlier drafts by Ishac Diwan, Fiona Davies, Chris Johnson and anonymous peer reviewers, including experts from international financial institutions (IFIs), humanitarian organisations, academics and independent consultants. We are grateful for financial support from the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and the United Nations Development Programme (UNDP). The findings and opinions expressed in this paper are those of the authors. Comments are welcome – please send them to Sherillyn Raga (s.raga@odi.org.uk).

About the authors

Sherillyn Raga is a Senior Research Officer at ODI.

Sherine El Taraboulsi-McCarthy is a Senior Research Fellow at ODI.

Moizza Binat Sarwar is a Research Fellow at ODI.

Yazeed al-Jeddawy is an independent Yemeni consultant.

Contents

Acronyms

AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
BoP	Balance of payments
CPIA	Country Policy and Institutional Assessment
CBY	Central Bank of Yemen
DFA-AA	De Facto Authority – Ansar Allah
DFID	Department for International Development [UK]
FCAS	Fragile and conflict-affected situations
FCDO	Foreign, Commonwealth and Development Office [UK]
FGC	Financial Governance Committee [Somalia]
FGS	Federal Government of Somalia
FTO	Foreign Terrorist Organisation
FX	foreign exchange
GDP	Gross Domestic Product
Hawala	System of informal international non-cash money transfers
IPC	International Food Security Phase Classification
IFI	International Financial Institution
IRG	Internationally Recognised Government
KII	Key Informant Interview
KSA	Kingdom of Saudi Arabia
LIC	Low-income country
LoC	Letter of Credit
MFB	Microfinance Bank
MFI	Microfinance institution
MPF	Multi-Partner Fund
NPL	Non-performing Loans
PPP	Purchasing Power Parity
OSESGY	Office of the Special Envoy of the Secretary-General for Yemen
Sarafeen	Money exchange service providers
SME	Small- and medium-sized enterprise
STC	Southern Transitional Council
UN	United Nations
UNDP	United Nations Development Programme
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
US	United States
USAID	United States Agency for International Development
YBA	Yemen Banks Association
YMEA	Yemeni Money Exchange Association
YFN	Yemen Finance Network

Executive summary

In a country as poor as Yemen, food insecurity has long been an endemic challenge, even before the escalation of the crisis in 2015. The conflict has since propelled millions more people into food insecurity,[1] through a combination of direct conflict impacts and the effects of economic instability on market prices and household incomes. Over six years of conflict in Yemen, the price of basic goods has more than doubled[2] and the unemployment rate has soared,[3] while GDP has contracted by 40%.[4] The conflict has increasingly extended into the economic sphere, driving fragmentation and deterioration of the financial sector, which has in turn exacerbated food insecurity by driving up transaction costs and consumer prices.

As the conflict intensified and global oil prices fell in 2015, hydrocarbon export fell substantially. This resulted in a widening balance of payments (BOP) deficit, a negative impact on government revenues, and a declining foreign currency supply in the financial system. The impact of these economic shocks has persisted, and has been exacerbated by the fragmentation of economic and monetary policies and administration in Yemen, including the Central Bank of Yemen (CBY).

In 2016, the CBY headquarters (CBY-Aden) was relocated from Sana'a to Aden while a *de facto* central bank (CBY-Sana'a)[5] continued to supervise the majority of the financial institutions in Sana'a under the control of the Houthi movement known formally as Ansar Allah (to be referred hereafter as '*de facto* authority-Ansar Allah' or DFA-AA). The CBY-Aden and CBY-Sana'a have since implemented opposing and retaliatory policies on monetary circulation, liquidity management and supervision of financial institutions. For example, with reduced capacity of the hydrocarbon sector, limited sources of non-oil fiscal revenues and depleted reserves,[6] the internationally recognised government (IRG) utilised central bank financing of its fiscal deficit by

1 Based on data from FAO-FSTS (2014, 2015) and IPC-TWG (2020), Yemenis experiencing food insecurity (Phase 3 and above) increased from 10.6 million in 2014 to 12.9 million in 2015, and to 13.5 million in 2020.
2 IRC (2021) survey suggests that from February 2016 to October 2020, prices have increased for wheat flour (by 100%), vegetable oil (by 96%) and rice (by 164%). IMF (2021a) estimates that consumer price index in Yemen increased from 606 in 2015 to 1,755 in 2020 (by 189.5%).
3 Unemployment rate increased from 13.5% in 2014 to an estimated 34% in 2020 (MPIC, 2020).
4 Authors computations based on GDP data from IMF (2021a), suggesting a contraction of 39.5% from 2014 to 2020; and GDP data from MPIC (2020), suggesting a 40.1% decline from 2014 to 2019.
5 In this paper, the authors recognised that the CBY-Sana'a lacks international recognition and infrastructure to engage in cross-border transaction (e.g., SWIFT) and to print money. However, largely due to its previous connections to the financial sector based on its formal official status as a central bank, the CBY-Sana'a has been issuing and implementing regulations on circulation of money and supervision of financial institutions in Sana'a, making it a *de facto* financial authority in DFA areas.
6 When the CBY headquarters relocated to Aden in September in 2016, foreign reserves were reportedly around $700 million compared to about $5 billion in 2014 (Biswell, 2020).

printing new banknotes. The increase in money supply contributed to rapid price inflation. In response, the DFA-AA banned the use of the new banknotes in areas under their control to prevent faster inflation induced by increased money supply from CBY-Aden. These uncoordinated policies led to dual exchange rates, with important distributional impacts in terms of higher inflation tax in IRG areas and depressed income combined with liquidity trap in DFA-AA areas.

For this paper, we focus on the fragmentation and deterioration of the financial sector as an operating channel that contributes to food insecurity in Yemen. We first examine the impact of the conflict on different segments (i.e., formal and informal financial institutions) of the financial sector, and the inefficiencies created in the financial system as a whole. We then identify the channels through which the weakened financial sector creates negative knock-on effects on food availability and demand in Yemen.

Our findings suggest two central themes among Yemen's financial institutions and agents since the intensification of the conflict.

1. **The conflict has weakened the banking sector capacity, contributing to a loss of confidence in formal financial institutions.** The CBY-Aden and CBY-Sana'a have frozen bank assets and suspended payments of public debt. Consequently, the banking sector's balance sheets suffered, since a large part of its total assets are in the form of loans extended to the government.[7] The CBY-Aden and CBY-Sana'a also threatened banks for non-compliance to conflicting regulations and implemented complex requirements to access the CBY-Aden's trade financing support, creating operational costs. These led to a loss of confidence in formal financial institutions, as evident from declining deposits in commercial banks[8], surging number of microfinance savers,[9] and substantial increase of money circulating outside the banking sector.[10] Consequently, banks' historically low lending for economic activities further declined in recent years.

2. The dual currencies and exchange rates, combined with weakened banking sector capacity, paved the way to the **increasing reliance on informal financial institutions and agents for financial services in Yemen**. Even before the conflict, Yemeni households showed a widespread preference for engaging with money changers and *hawalas*, in part due to the limited access to banking services.[11] This preference expanded to businesses and traders following the deterioration of the banking sector. Licensed and unlicensed money exchange operators' own remittance operations with strong *hawala* networks enable them to secure domestic and foreign currency necessary for trade and money transfers. Informal financial agents also fill the financial inclusion gap, as they are able to disburse money transfers and loans to hard-to-reach and conflict areas. Although the increasing informality is not without risks – including opportunity for currency

[7] The share of loans extended to the government to total banking sector assets was around 45% in 2014 and 2019 (MPIC, 2021).
8 Deposits (as % of GDP) declined from 25.5% in 2016 to 22% in 2019. Source: Authors' computations based on MPIC (2021) banking sector data and IMF (2021a) GDP data.
9 The number of microfinance savers grew on average by 26% annually from 2016 to 2019, reaching 1.3 million depositors as of 2019 (Al-Shaibani, 2020).
10 The share of money outside the banking sector to total money supply increased from 26.1% or YER811 billion in 2014 to 51% or YER3 trillion in 2019 (MPIC, 2021).
[11] From 2010 to 2015, there are less than 2 bank branches for every 100,000 Yemenis (WDI, 2021).

arbitrage and rising concerns related to anti-money laundering/combating the financing of terrorism (AML/CFT) due to lack of transparency and tracing of informal transactions.[12]

Aside from driving the evolution of the role of financial institutions and agents identified above, the conflict and economic war between the IRG and the DFA-AA also expanded to complex issues regarding the differential distribution of public salaries, revenue mobilisation, trade financing support and exchange rate management. These issues also affect financial transaction costs. In this regard, we summarised below five key channels through which the conflict and the economic war have led to inefficiencies in the financial system as a whole:

1. **Reduced availability of foreign exchange (FX)**, as a result of the balance of payment (BoP) shock, which has disrupted trade financing.

2. **Conflicting monetary policies between the IRG and DFA-AA**, which have led to dual exchange rates and restricted cash liquidity in DFA-AA areas, thereby increasing financial sector transaction costs and reducing operational efficiency.

3. **Conflicting regulatory requirements for financial institutions** between the IRG and DFA-AA, which have led to higher transaction costs for financial sector institutions, impeded financial sector liquidity, disrupted bank operations in some cases and complicated traders' access to FX. These in turn, partly explain the increasing cost of capital, declining overall credit, and low share of loans extended to the agricultural sector.

4. **Contraction of public sector revenues**, which amongst other things have led to the non-payment of public sector debt held by domestic financial institutions, severely affecting financial sector liquidity and the ability of the financial sector to support private sector actors.

5. **Uneven distribution of payment of public sector salaries**, which have been financed by issuance of new banknotes in IRG areas, and disbursed sporadically in half-payments in DFA-AA areas. Increased money supply by CBY-Aden prompted inflation and eroded purchasing power in IRG areas. Sporadic half-payment in DFA-AA areas was partly explained by the ban on the use of new banknotes and contraction of public revenues.

The above developments in the financial sector have had knock-on effects for food security (Table 1). These effects include reduced food demand as a result of eroded purchasing power, higher prices and reduced household income; sub-optimal imported food supply due to lack of FX financing and higher transaction costs; and discouraged agricultural production due to expensive cost of capital and low availability of credit.

[12] Based on ODI interviews (2021).

Table 1 Knock-on effects of fragmented financial sector on food security

Channels of impact of the conflict to the financial sector	Impact of the fragmented and deteriorating financial system	Knock on effects on food security	
		Food demand	Food supply
1. **Reduced FX availability following conflict- and economic-induced BOP shock**	• Exchange rate depreciation • Disrupted trade financing (e.g., LoC support by the central bank, trade financing services by banks)	• Reduced affordability of imported food	• Operational disruptions in food importing due to lack of FX financing
2. **Conflicting monetary policy (e.g., money supply, circulation) between IRG and DFA-AA**	• Dual exchange rates • Sharper depreciation and faster inflation in IRG areas • Restricted cash liquidity in DFA-AA areas • Higher financial sector's transaction costs and reduced operational efficiency associated with dual exchange rates	• Eroded purchasing power for food especially in IRG areas • Reduced disposable income for food due to higher costs of financial services (e.g., remittances, money transfers)	• Challenges for humanitarian operations (e.g., for food aid delivery) due to higher financial transaction costs
3. **Conflicting regulation for financial institutions between IRG and DFA-AA**	• Financial sector's impeded liquidity and operational disruptions associated with banks' frozen assets, and compliance to conflicting regulations on bank supervision and on access to trade financing support • Resulting weakened banking sector capacity for lending to economic activities		• Reduced food importing capacity with declining trade financing services from the weakened banking sector • Discouraged local food production due to persistently low credit at expensive rates extended by banks to small businesses and agricultural sector
4. **Contraction of public sector revenues**	• Non-payment of public sector debt held by financial institutions • Resulting weakened banking sector capacity for lending to economic activities		
5. **Uneven distribution of public sector wages**	• Faster inflation in IRG areas with central bank financing of public sector wages largely distributed in IRG areas • Controlled inflation in DFA-AA areas, partly explained by sporadic distribution of civil servants' wages and ban on new banknotes	• Eroded purchasing power for food especially in IRG areas • Depressed/unstable income for food among civil servants in DFA-AA areas	

The economic, humanitarian and food insecurity crises in Yemen all stem from the conflict. Thus, ending the war and striving for sustained peace are the ultimate policy priorities for Yemen. However, in view of the worsening food insecurity in Yemen, we suggest the following entry points for international actors, donors and financial institutions to help stabilise the operations of the financial sector and facilitate convergence in economic and monetary policy more broadly. These recommendations are expected to create positive knock-on effects for food affordability and availability.

Recommendation 1: Play a third-party intermediating role for the CBY-Aden and CBY-Sana'a to insulate financial services from political influences.

1.1 Initiate a third-party facilitated and well-represented dialogue mechanism to enable IRG and DFA-AA to reach mutually acceptable compromises that would insulate regulations for financial institutions in Yemen from political influences.

1.2 Facilitate a multi-stakeholder dialogue among CBY-Aden, CBY-Sana'a, financial institutions, private sector associations, bilateral and international development partners to identify concrete steps aimed at restoring banks' liquidity.

1.3 Persistently encourage the parties to fulfil their commitment under the Stockholm agreement to channel revenues from Hudaydah port for payment of the salaries of civil servants.

Recommendation 2: Provide higher levels of aid (i.e., inject new FX funds) than previous commitments as a means to help stabilise the exchange rate in Yemen. This must be conditional on strong governance structures and a high degree of transparency on the part of facilitating financial institutions on management of foreign funds.

Recommendation 3: Expedite mobilisation of investments in digital infrastructure and skills (such as mobile money) to provide a trusted channel for remittances at lower cost, facilitate financial access to marginalised groups, displaced families and small farmers, and increase the use of formal financial channels.

Recommendation 4: Increase human capital investment among financial services providers and consumers in adopting international standards/best practices in financial transactions.

1 Introduction

'There is no economic capital in Yemen that is independent from its political capital', a Yemeni central bank official stated in an interview conducted for this study, summarising a core challenge to Yemen's financial sector amid one of the largest humanitarian and development crises in the world. Following the intensification of the conflict, Yemen's gross domestic product (GDP) contracted by nearly 30% in 2015 and continued to decline by 9.4% and 5.1% in 2016 and 2017, respectively (IMF, 2021a). Output was slowly recovering at 0.8% and 2.1% growth in 2018 and 2019, but the COVID-19 pandemic induced a decline in Yemen's economy by 8.5% and is expected to contract further by 2% in 2021 (IMF, 2021a; IMF, 2021b). Income has been pushed down to historical lows, from constant purchasing power parity (PPP) of $3,846 in 2010 to an estimated PPP of $1,973 in 2019 – or more than 50% fall in income in ten years (IMF, 2021a). The share of population below the national poverty line increased from 48.6% in 2014 to 80% in 2020 (MPIC, 2021).

The conflict, fuel crisis and disruptions in public services increased the severity of Yemen's food insecurity and malnutrition (MPIC, 2021). It is expected that people suffering from acute food insecurity (Integrated Food Security Phase Classification or IPC Phase 3[13] or above) will increase from 13.5 million people in 2020 to at least 16.2 million people this year (ibid.).

The ongoing conflict has resulted in a split in fiscal, central bank and trade policies between the internationally recognised government (IRG) based in Aden and the DFA-AA that controls Sana'a. This paved the way to the fragmentation of the financial sector from 2016, when the function of the most critical financial institution – the Central Bank of Yemen (CBY) – has been divided between the *de facto* CBY in Sana'a under the DFA-AA and CBY headquarters in Aden under the IRG. The often opposing and retaliatory financial regulations issued by the CBY-Aden and CBY-Sana'a following orders from IRG and DFA-AA, respectively, increased transaction costs, disrupted the operations of financial actors (e.g., banks, microfinance, money exchanges) and created new opportunities for currency arbitrage and illicit profiteering (World Bank, 2020d; ACAPs, 2020). These have deep

[13] The IPC is a common global scale for classifying the severity and magnitude of food insecurity and malnutrition. The IPC Acute Food Insecurity is organized into five severity phases (Phase 1: Minimal/ None; Phase 2: Stressed; Phase 3: Crisis; Phase 4: Emergency; and Phase 5: Catastrophe/Famine). Phase 3 is generally characterised by households that either have food consumption gaps that are reflected by high or above-usual acute malnutrition; or are marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies (IPC, 2019).

repercussions on the availability of foreign exchange (FX), prices, provision of financial services, as well as distribution of public-sector wages, remittances and cash-based humanitarian aid throughout Yemen – ultimately exacerbating food insecurity in the country.

This study aims to add to existing knowledge and literature by looking at the impact of the conflict on financial institutions and Yemen's financial system as a whole, and their knock-on effects on food security. The existing literature examines the impact of the war through the lens of a particular institution, such as the central bank (Rageh et. al, 2016; Biswell, 2020), regulated banks and money exchanges (SCEU, 2020; Al-Muslimi, 2019) and microfinance industry (Al-Shaibani, 2020; Yemen Finance Network, 2015). Other areas of focus include a particular trend or event that affects the whole financial system, such currency fluctuations (Ahmed, 2020; ACAPS, 2020a), cash-transfer programmes (REACH, 2019), electronic payment services (AlSamawi et al, 2020) and bank de-risking (El Taraboulsi-McCarthy and Cimatti, 2018). The closest study that looked at the intersection of food security and financial sector is a previous study by the World Bank (2018), but the study focused mainly on food imports and the period of analysis covered only the onset of the fragmentation of the CBY.

This paper covers a less understood channel that exacerbates food insecurity: the extension of the conflict to the fragmentation and deterioration of the financial sector and their knock-on effects on food security in Yemen. Section 2 describes the impact of the conflict on specific financial institutions and agents in Yemen. It also identifies specific channels through which the conflict's impact on the financial sector affects firms and households as a whole. Section 3 examines the implications of the deterioration and fragmentation of the financial sector on food availability (supply) and accessibility (demand). Finally, Section 4 makes recommendations for the international community on how to support the financial sector in Yemen with the parallel aim of enhancing food security.

The paper draws on existing studies and reports to map out and analyse the individual and systemic impact of war on financial institutions and actors, and the repercussions on food security in Yemen. The analysis incorporated insights from 12 key informant interviews (KIIs) with representatives from the central bank, financial industry associations, money exchange companies and *hawalas*, as well as international humanitarian and development actors, bankers, analysts, private sector actors and civil society leaders on financial sector/services issues most relevant to them. Interviews were conducted in Arabic and English. The interviews and data gathering were conducted from March to July 2021. The paper also benefited from the insights of 41 international and local actors in Yemen during the virtual roundtable discussion ('Shifting the IPC dial in Yemen') organised by ODI on 27 May 2021.

2 Impact of conflict on Yemen's financial sector

2.1 Background: economic performance and financial development

Yemen has been suffering its worst economic collapse and humanitarian crisis brought about by the intensification of conflict in 2015. Gross domestic product (GDP) contracted by nearly 30% from 2014 to 2015 and continued to decline by 9.4% and 5.1% in 2016 and 2017, respectively (IMF, 2021a). Output was slowly recovering at 0.8% and 2.1% growth in 2018 and 2019 (ibid.). However, the Covid19 pandemic induced a sharp decline of Yemen's economy by 8.5% in 2020, and output is expected to contract further by 2% in 2021 (IMF, 2021b).

Government revenues declined by as much as 53.7% in 2015 and by 60.6% in 2016, following disruption in oil production, suspension of donor support, and reduction of tax revenues amid the intensifying conflict (MPIC, 2017). With falling revenues, public expenditure shrank by 36% from 2014 to 2016 (ibid). This is significant since before the conflict, the public sector accounted for 45% of Yemen's national output and 31% of its employed population (ibid). In 2017, payment of interest on domestic public debt (e.g., from the banking sector), Social Welfare Fund (SWD) cash transfers and pension payments[14] were suspended in many governorates (ibid.). During the same year, 1.25 million public employees did not receive salaries, heavily affecting the continuity of public services (ibid). A recent World Bank (2020d) report suggests that employees in central ministries in Aden appear to be paid regularly in 2019, but only partial payments were extended to limited public sector employees in judiciary, health and higher education in DFA areas.

The country's public budget deficit as percent share of GDP rose from 4.8% in 2014, to almost 15% in 2015 and 2016, before gradually narrowing down to 9.9% in 2019 (MPIC, 2021). Public debt-to-GDP ratio jumped from 44.5% in 2014, to 91.8% in 2016, to 100.4% as of 2019 (ibid.).

Since 2020, there has been a widening divergence between exchange rates in DFA-AA areas using the old Yemeni Rial (YER) banknotes and IRG areas which largely circulates newly printed YER banknotes. The exchange rate has been depreciating more rapidly in the IRG zone – from 13 January 2020 to 31 October 2021, the YER in Aden depreciated by 108% from YER652 to

[14] An informant for this study suggested that pension payments have resumed, albeit intermittently.

YER1,358 per US dollar, while exchange rate in Sana'a depreciated by only 2.2% from YER589 to YER602 during the same period (YETI, 2021).

Throughout the years of conflict and failing public services, some of the critical elements that keep the Yemeni economy and lives afloat are the surviving businesses, remittances and humanitarian and development aid – all of which are facilitated by the formal and informal financial sector, despite its underdevelopment. Following the intensified conflict and the subsequent move of the Central Bank headquarters from Sana'a to Aden and its politicisation,[15] the capacity of Yemen's financial sector has faced greater challenges, with painful repercussions to firms and households in terms of rising costs of financial services, eroded purchasing power and disrupted economic activities. The next sub-sections discuss and map out the impact of political conflict among formal and informal financial institutions in Yemen, to understand the interrelationships between these institutions and the implications on financial transactions and food security in Yemen.

2.2 Formal financial institutions

2.2.1 The Central Bank of Yemen (CBY)

Background: The role of the CBY before the split in 2016
A typical central bank is driven by its primary mandate, which is to conduct monetary policy and exchange rate management, and to ensure price stability. In addition, an independent central bank provides a strong signal of credibility to local and international investors, and also hinders the government from inflating the economy, abusing loan disbursements, and implementing policies for political interests (see Kern et al., 2020). Conflicts may, however, have various impacts on the role of a central bank. These range from civil wars that leave central banks intact while destroying financial infrastructure, such as in Angola and Mozambique; civil wars that obliterate the formal financial system, as in Cambodia and Somalia; wars where banks are looted to finance war activities as in Rwanda; and inter-state conflicts in which formal financial institutions are stressed but nevertheless continue to function, such as the 1998–2000 war between Eritrea and Ethiopia (Addison, 2002). In the case of Yemen, the two main actors in the conflict – IRG and the DFA-AA – have, among other institutions, focused on the central bank as a locus for broader contests over legitimacy and sovereignty.

The scope of the central bank function in Yemen traditionally goes beyond monetary policy and financial regulations. Broadly speaking, the CBY also acts as a financial agent of the government through which the latter deposit its revenues and disburse its expenditures. For instance, the CBY has direct financial coordination with local councils in facilitating provision of basic public services, distribution of public sector salaries in both in IRG (Aden) and DFA-AA (Sana'a) areas, extending letters of credit (LoCs) at official

[15] It is important to note that political intervention in financial services is common in advanced and underdeveloped financial systems. As argued by Song and Thakor (2012), political intervention is 'ubiquitous', 'regardless of the stage of development of the financial system' and that financial crises in the USA and the Eurozone have shown that 'even advanced financial systems are not immune to political interventions'; but for weak and underdeveloped financial systems, the risk is that political intervention can further weaken it and prevent its evolution and development.

exchange rates for vital grain and flour imports and financing government deficit and servicing external debt obligations (see Browning, 2016; Rageh et al., 2016). The CBY continued to carry out these functions throughout the conflict from 2011 to 2016, effectively providing basic financial and price stability, while also facilitating essential public services. Hence, the CBY became one of the only functioning institutions during the war that enabled the Yemeni economy to survive amid intensifying adversity – at least until the increased political influence over the CBY.

The political and economic shock that triggered the CBY split in 2016
Against the backdrop of intensifying conflict, continued disruption in oil production, and the fall in global oil prices, hydrocarbon exports fell substantially in 2015. Trade deficit in terms of percent share of GDP widened from 14.7% to 21.6% to 33% in 2014, 2015 and 2016, respectively (MPIC, 2021). The widening deficit in the BOP had a negative impact on government revenues and reduced the foreign currency supply in the financial system. In this environment, the exchange rate started to depreciate. In response, the CBY used its foreign reserves to manage exchange rate volatility and continue to facilitate import financing. To avoid depleting its foreign reserves, the CBY limited its LoCs for fuel imports in July 2015 (al-Muslimi, 2019). The CBY also limited withdrawals from commercial banks to domestic currency (Rageh, et al., 2016). Owing to Yemen's dependence on importing food and other basic commodities,[16] financing imports eventually depleted the CBY's currency reserves from $4.7 billion at the end of 2014 to $700 million by September 2016 (Biswell, 2020).

With substantial depletion of foreign reserves, the IRG alleged that the DFA-AA was using the CBY reserves for war efforts (Bayoumy, 2016; Rageh et al, 2016). By 18 September 2016, President Abdo Rabbu Mansour Hadi (head of Yemeni government) appointed a new CBY governor and ordered the CBY headquarters to relocate from Sana'a to Aden. This decision came despite international recognition that ousted CBY governor Mohammed Awad bin Humam was a competent technocrat, and despite his earlier request for IRG to commission an international audit of the CBY (Bayoumy, 2016; Rageh et al, 2016). The fragmentation of the CBY has since significantly undermined core functions of the central bank in domestic, regional and international financial markets, especially since the relocation did not secure the technical staff, archives or financial reserves, which largely remained in Sana'a (al-Muslimi, 2019; El Taraboulsi-McCarthy and Cimatti, 2018).

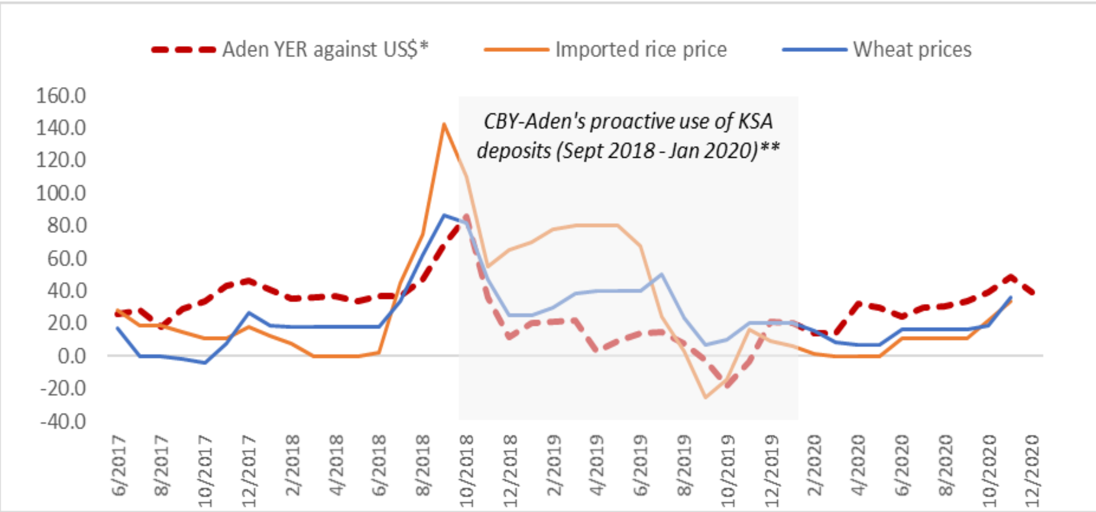
Politicisation of trade financing support
To help strengthen the YER, the Kingdom of Saudi Arabia (KSA) has extended financial support worth $2.2 billion in CBY-Aden in 2018 (KSA-MOF, 2018; Reuters, 2018; ACAPS, 2020b). With this, the CBY-Aden provided a framework in June 2018 to support imports of basic commodities through LoCs. However, these LoCs could only be opened with commercial banks operating in Aden and the equivalent YER funds had to be deposited in CBY accounts in Aden (al-Muslimi, 2019). The shortage of physical YER banknotes in the DFA-AA areas due to the lack of authority of the CBY-

[16] Various reports cited that Yemen imports around 90% of its consumption needs even years prior the escalation of the conflict in 2015 (FAO, 2016; World Bank, 2017c; WFP, 2010).

Sana'a to print money, combined with widespread customer deposit withdrawals resulted in liquidity crisis in Sana'a. In addition, the DFA-AA restricted movement of cash out of the areas under their control. This made it more difficult for banks in Sana'a to underwrite LoCs, since they had to purchase expensive YER banknotes from money exchange houses in order to comply with the YER cash deposit requirements of the CBY-Aden (al-Muslimi, 2019). In response to said CBY-Aden's cash requirements, in November 2018 the DFA-AA ordered commercial banks to use cheques to cover the CBY-Aden facilitated LoCs (al-Muslimi, 2019). This response aimed to prevent the transfer of already limited YER banknotes in areas outside the control of DFA-AA.

The injection of foreign currency from KSA and the LoC system from CBY-Aden to cover imports of essential food commodities – wheat, rice, sugar, milk, and cooking oil – initially stemmed the rapid depreciation of the YER (ACAPS, 2020b; Figure 1). Two months into the implementation of CBY-Aden LoC support to traders, the YER stabilised and appreciated against the US dollar by 35% from YER840 to YER550 (YEC, 2019). Following this CBY-Aden intervention, coupled with the fall of global food prices during the same period,[17] food stocks in Yemen increased and food and medicine prices fell by around 35% (YEC, 2019). However, KSA-injected reserves were almost depleted by 2020 (ACAPS, 2020b; The Economist, 2020) and exchange rate against US dollar in Aden reached YER 1,358 by end-October 2021 (YETI, 2021).

Figure 1. Volatility of exchange rates and staple food prices (% year-on-year growth)



Notes: *positive (negative) % growth of exchange rates indicates YER depreciation (appreciation). **World Bank (2019d) reported that CBY-Aden proactively used the KSA deposits from September 2016 to stabilise the currency; while the World Bank (2020e) had estimated that the KSA deposit would be exhausted by the end of January 2020.
Source: Authors' computations based on WFP data gathered from YETI database

A report by a United Nations (UN) Security Council Panel of Experts on Yemen highlighted a lack of transparency and levelled allegations that CBY-Aden had misused the KSA deposit, by allocating LoCs at a more appreciated exchange rate than the market rate (UNSC, 2021). While

[17] Based on the authors' calculations and World Bank's Pink Sheet of commodity prices data, growth of global food prices slowed down from 0.6% in 2017, to 0.3% in 2018 and contracted by -3.8% in 2019.

analysts have highlighted the deficiencies in the report, the allegations have highlighted the ongoing capacity and governance weaknesses in CBY-Aden (Al-Akhali, 2021; Anne, 2021; SCSS, 2021). By late March 2021, Reuters (2021) and Lederer (2021) reported that the panel withdrew some of the corruption and money-laundering assertions made in the report.

In DFA-AA areas, the Payments Committee oversees the demand and supply of FX to avoid excessive volatility of the exchange rate (World Bank 2020d). Amid the YER fluctuation in June 2020 for instance, the Payments Committee announced the sale of 40 million Saudi Rial (about $10.7 million) to commodity traders in DFA-AA areas, followed by restrictions on FX selling by exchange bureaus in July 2020 (World Bank, 2020d).

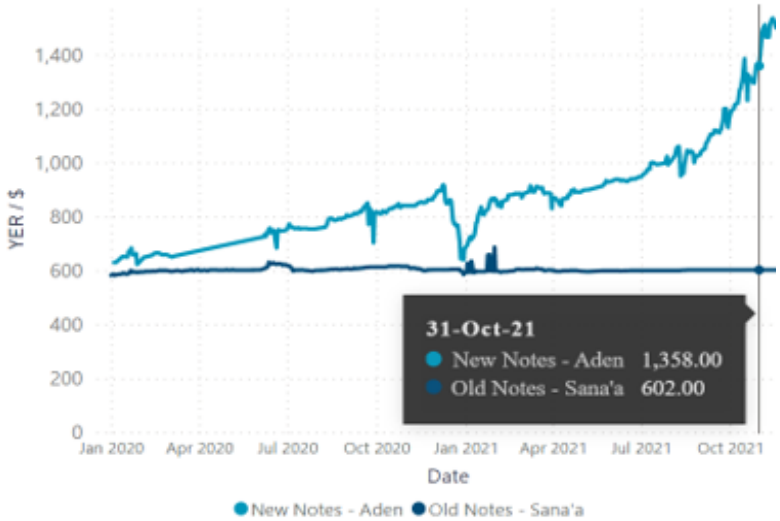
Conflicting monetary policies and resulting divergent exchange rates
In the absence of government oil revenues, the government's growing deficit in 2018 was financed by an expansion of the CBY-Aden overdraft to the government, including by printing money and accumulating arrears (World Bank, 2019d). From 2016 to 2019, more than 40% of public debt was borrowed from the CBY-Aden (MPIC, 2021). Massive issuance of new banknotes was reflected in the growth of money supply by 53% in 2018, partly explaining the 55% rise in food prices during the year (World Bank, 2019d). By end of 2019, the CBY-Aden's newly printed banknotes amounted to YER1.3 trillion, of which YER200 billion was held in reserve (Biswell, 2020). To prevent importing inflation from the IRG area, the DFA-AA increasingly prohibited the use of new banknotes in areas under their control from 2017 to 2018. Businesses were reported to be refusing the new banknotes, forcing commercial banks to stock them at their own storage cost (al Muslimi, 2019).

By December 2019, holders of new banknotes in Sana'a were ordered to surrender these within 30 days, to be exchanged for electronic currency (e-rial) by designated financial service providers, limited cash reimbursement in old banknotes, or for mobile phone credit (Biswell, 2020; World Bank, 2019b). The DFA-AA claim that the e-payment system is intended to accelerate its drive towards financial inclusion and increase transparency in public financial transactions – hence the target of switching 90% of public transactions to e-payment by 2020 and to process 90% of public transactions electronically by 2021 (World Bank, 2020c).

Key informants noted that there appears to be a resistance on part of CBY-Aden to move towards e-payments while CBY-Sana'a is more receptive, 'perhaps as a way to make a quick win' in public opinion (ODI interviews, 2021). Biswell (2020), however, observed that introducing e-rials is a key attempt by the DFA-AA to expand its liquidity options (i.e., due to the shortage of old YER banknotes) while decoupling from CBY-Aden-issued banknotes. He also highlighted challenges regarding the use of e-rial. First, the e-rial can only be used to pay limited expenses, such as water and electricity utility bills and mobile phone services. Second, there is currently no mechanism to exchange e-rials for hard currency. Third, Yemen is a heavily cash-based society, with limited proportion of the population owning bank accounts essential for e-rial transactions.

Meanwhile, the banning of new banknotes in areas under the control of DFA-AA led to a flush in the supply of new banknotes in IRG areas, significantly contributing to YER depreciation in Aden, eventually leading to divergent exchange rates between Aden and Sana'a from January 2020 (Figure 2). This created an avenue for arbitrage, which subsequently led to the expansion of a 'black' or parallel market,[18] adversely affecting households, civil servants, businesses and traders and humanitarian agencies.

Figure 2. YER against US dollar: divergence between new banknotes (Aden) versus old banknotes (Sana'a)



Source: YETI (2021) dashboard

Politicisation of payment of public-sector wages

One channel of the politicisation of the warring institutions was apparent in their role in paying the salaries of public sector employees. In September 2016, the CBY-Aden suspended the wages of 1.2 million public sector employees due to sharp decline of public revenue deposits and the lack of physical cash deposits from the banking sector (Al Bashiri, 2019; Rageh, et al., 2016). When payments of public sector salaries resumed in early 2017, they were largely limited to IRG areas (Al Bashiri, 2019). In 2018, the IRG approved a 30% salary rise for civil servants (ibid.), which augmented income but might in part have contributed to accelerating inflation amid exchange rate depreciation and printing of banknotes at the time.

When the DFA-AA started to ban the use of new banknotes in areas under their control in December 2019, the IRG responded by suspending its already limited payment of civil servant salaries in DFA-AA areas (World Bank, 2020c). To cope with lack of physical banknotes to pay the salaries of public sector workers, the DFA-AA has been exploring paying salaries of civil servants through a voucher system and e-rial (ODI interviews, 2021).

In late 2019, the Office of the Special Envoy of the Secretary-General for Yemen (OSESGY) mediated between the IRG and DFA-AA to establish a temporary arrangement to channel revenues collected from Hudaydah port to the CBY-Hudaydah account (OSESGY, 2020a). This arrangement has since been suspended due to the DFA-AA's unilateral withdrawal of funds from that account in April 2020 (OSESGY, 2020b; YPA, 2020). The DFA-AA announced that it had withdrawn the money to pay half-month salaries of

[18] The emergence of 'black' or parallel market has been noted in many studies of the impact of conflict on a country's private sector, arising from a power vacuum which creates space for typically illegal trade and 'in which grey and black-market actors accrue large sums of liquidity and draw such out of the formal economy' (Nasser, 2018).

civil servants in areas under their control (World Bank, 2020c). By end-June 2020, there was reportedly little indication that these payments had been made (SCSS, 2020d). The Security Council Panel of Experts (UNSC, 2021) suggested in latest reports that the DFA-AA diverted revenues partly dedicated to pay public sector salaries to funding their war efforts.

Other political actors in Aden

The stability of CBY-Aden, and the IRG more generally, was also challenged by the Southern Transitional Council's (STC) announcement of self-administration in April 2020 (SCSS, 2020a). In June 2020, the STC confiscated containers carrying newly printed banknotes worth YER80 billion ($109 million) from Aden port, with the claimed objective of preventing circulation of new banknotes to protect the value of YER (World Bank, 2020d). The confiscated YER were eventually handed over to the government in July 2020 (ibid.). There were also several incidents involving STC attacks and intimidation of commercial banks, including seizure (and eventual return) of money, the deployment of armed guards, and the closure of several branches (SCSS, 2020c). The growing insecurity in Aden also forced some qualified employees of CBY-Aden and other government agencies to leave, worsening the overall capacity of CBY-Aden and further weakening its authority over the banking sector (SCSS, 2020a).

2.2.2 Commercial banking sector

Background: The role of banking sector in Yemen

As of end 2019, there are four Islamic banks, four government banks and eight conventional banks (including foreign branches) operating in Yemen (AlSamawi et al., 2020). Total assets of the banking sector (including microfinance banks) reached YER3.6 trillion or about 57.8% of GDP. Conventional banks accounted for 31% of the total banking asset, followed by government banks (29%), Islamic banks (23%), foreign banks (10%) and microfinance banks[19] (8%) (ibid.).

Yemen's commercial banking sector is characterised by its risk aversion, as seen in its substantial investment in treasury bonds which carry fewer risks and higher returns than commercial loans, or on its lending to established actors with available collateral (al-Shaibani, 2020; AlSamawi et al., 2020). From 2014 to 2019 on average, 45% of total banking sector asset (and about 75% of total banking sector loans and advances) was extended to the government.[20]

Commercial banks have also limited participation in supporting economic activities and rural areas. As of 2016, the loans to the private sector are equivalent to only 8% of GDP (versus 43% in Arab countries) (MPIC, 2018). In terms of financial access, there are 433 bank branches and offices in Yemen as of 2019 (roughly 1.4 bank branches per 100,000 Yemenis vs 11.9 in Arab countries) (AlSamawi et al., 2020). Most banking services are concentrated in main cities while financial services in rural areas rely mostly

[19] The microfinance banks are discussed in more detail in section 3.2.3.
[20] Authors' computations based on data from MPIC (2021).

on a limited number of bank branches, exchange companies and post offices (ibid.).

Nevertheless, commercial banks are the main channel for humanitarian agencies to make international transfers to Yemen (ODI interviews, 2021). This is for reasons ranging from legal and/or organisational compliance, to logistics, and to established networks/branches in areas where humanitarian agencies are focused on disbursing cash.

Banks are also the first point of contact for large businesses such as food importers in securing dollars to pay for international supplies or for other cross-border banking transactions, according to one key informant (ODI interviews, 2021). This is influenced by the fact that some of the major food importers and businesses hold shares in various Yemeni banks, and/or sit on these banks' management team, according to a Yemeni analyst we interviewed (ibid). Banks are also one of the service providers – in addition to *hawalas* – available to the Yemeni diaspora to send for much-needed remittances. For example, the partly government-owned Yemen Bank for Reconstruction and Development (YBRD) historically attracts a large share of foreign currency deposits accumulated abroad by Yemeni migrant workers (SCSS, 2020a). There are also partnerships between banks, money exchange companies and *hawalas* in disbursing these remittances and cash transfers to beneficiaries especially in remote areas (see section 3.3).

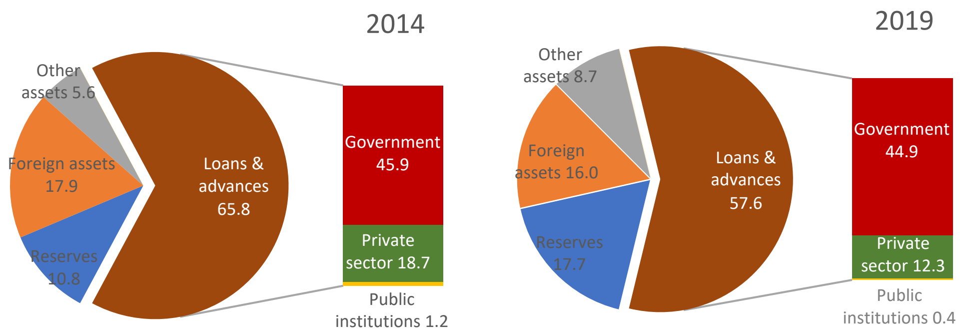
Impact of CBY fragmentation on banking-sector operations
Recent competing policies between the CBY-Aden and CBY-Sana'a with direct repercussions on banking operations include:

- **Control over bank assets**. Both CBY-Aden and CBY-Sana'a have frozen commercial banks' cash balances accumulated prior the relocation of CBY headquarter in Aden. CBY-Aden only allows cash withdrawals on the net balance of cash deposits made since September 2016, while CBY-Sana'a only allows commercial banks to use cash balances accumulated since 2017 (Al-Muslimi, 2019). In addition, banks have largely not been able to collect loans offered to the government and collect (cash) interest due on these loans (MPIC, 2018). As of 2017, almost 60% of the total banking sector assets (almost YER 2.1 trillion) are in the form of government securities (44%) and deposits and required reserves at the central bank (15%) (ibid.).
- **Control over import regulations**. To benefit from the CBY-Aden's LoC support scheme, traders have been restricted to opening these LoCs from commercial banks in Aden and depositing YER accounts in CBY accounts. However, the DFA-AA ordered banks to use cheques to cover these CBY-Aden-facilitated LoCs. Non-compliance with CBY-Sana'a and CBY-Aden conditions are sanctioned, including imprisonment of senior staff in Sana'a and fines in Aden (Al Muslimi, 2019). Amid the liquidity crisis and to comply with CBY-Aden's cash requirements for LoC access, commercial banks turn to money exchange companies to obtain overpriced cash (ibid.).
- **Control over supervision of financial institutions**. CBY-Aden instructed Yemeni commercial, Islamic, and microfinance banks, as well as money exchange houses, to share their data exclusively with CBY-Aden. This led to these financial institutions entering into a dispute with the CBY-Sana'a, which is the supervising authority in Sana'a (YBA, 2020; SCSS, 2020). Banks complying with CBY-Aden requirements were

reported to experience threats and kidnapping of employees and forced closures (YEC, 2019; SCSS, 2020). Meanwhile, banks that fail to comply with CBY-Aden requirements are imposed with fines (Al Muslimi, 2019; YBA, 2020c).

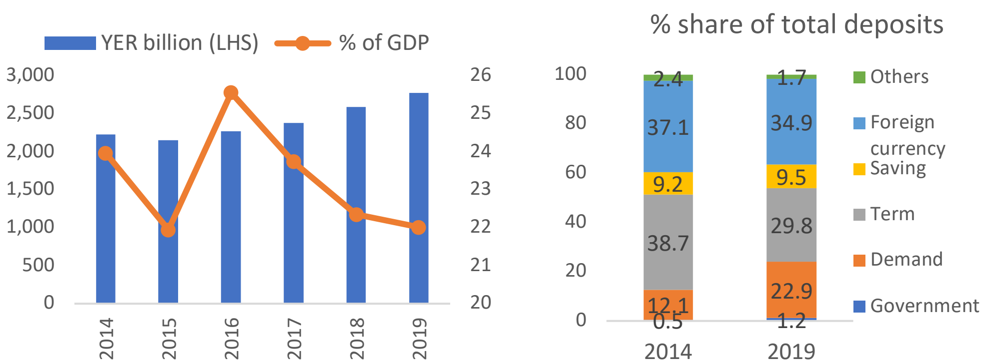
Impact of the reduced capacity of the banks on the financial sector
The retaliatory policies and threats of non-compliance on opposing regulations of the CBY-Aden and CBY-Sana'a, combined with bank de-risking[21] and frozen assets, resulted in detrimental repercussions on the banks' operational efficiency and profitability (see Annex 1). The share of banking sector assets extended as loans to the private sector fell from 19% in 2014 to 12% in 2019 (Figure 3). External suppliers of goods imported by Yemen expressed doubt in the ability of Yemeni banks to ensure payment (SCSS, 2020). Yemeni depositors were reluctant to keep their money in the banks, resulting in withdrawals from the banking system and held privately or circulated on the country's parallel market (Rageh et al., 2016; Figure 4). Deposits (as % of GDP) declined since 2016, and the uncertainty induced by the conflict shifted depositors' preference from term to demand deposit (Figure 4), further constraining banks to extend longer-term loans for economic activities.

Figure 3. Structure of Yemen's banking sector assets and loans (% share of total banking sector assets)



Source: Authors based on data from MPIC (2021)

Figure 4. Evolution of bank deposits in Yemen



Source: Authors based on banking data from MPIC (2021), GDP data based on IMF (2021a).

[21] De-risking refers to the removal of bank accounts of customers or the withholding of services from clients or regions associated with a high risk of funding terrorism, money laundering or other forms of financial crime. Individual Yemenis, Yemeni non-profit organisations and businesses have been adversely affected by bank de-risking regulations, both those residing in the West and in Yemen (El Taraboulsi-McCarthy and Cimatti, 2018).

Engagements between formal and informal financial actors became necessary in order to obtain financial services in Yemen (ODI interviews, 2021). Even before the conflict, ordinary households showed a widespread preference for engaging with money changers and *hawalas*, in part due to the limited access to formal financial institutions.[22] This preference expanded in the business sector and among traders following the fragmentation and politicisation of the CBY, as money exchange companies (both licensed and unlicensed) became the relatively reliable option to secure physical old YER banknotes and foreign currency, in view of the weakened capacity of the banking sector (ODI interviews, 2021; World Bank, 2018c). Commercial banks have also been securing expensive cash from money exchange companies to facilitate trade financing for their clients in the context of the liquidity crisis, especially in areas under the DFA-AA control (Al Muslimi, 2019).

In light of this, the YBA and the Yemeni Money Exchange Association (YMEA) consistently appealed to the warring parties to unify the CBY and to be neutral to banking and money exchange operations to prevent the worsening of the humanitarian crisis. In October 2020, the YBA (2020a) released a statement encouraging both CBY-Aden and CBY-Sana'a to stop exerting pressure and threats to institutions and to adopt a geographical scope in bank supervision (even on a temporary basis) and appealing to international organisations to intervene in this process. Several strikes have been announced by the YBA and YMEA in 2019 to 2020, to put pressure on both CBY-Aden and CBY-Sana'a to review and reconsider the restrictions and imposed on the banking and money exchange sectors (YBA, 2019a, 2020b, 2020c).

One key informant suggests that some banks that are members of the YBA are playing a key role for both warring sides because of the critical financial services they provide in facilitating public-sector salaries and collecting remittances, and for their network of mobile agents (ODI interviews, 2021). Such banks may be in a better position to negotiate and mediate with both CBY-Aden and CBY-Sana'a and strengthen the voice of the YBA. This is reflected in the recently reported creation of a high-level banking mediation committee comprising the heads of the International Bank of Yemen, Yemen Kuwait Bank, Tadhamon International Islamic Bank and Al Kuraimi Islamic and Microfinance Bank (SCCS, 2020b). Both CBY branches reportedly agreed to setting up this committee, which is mandated to negotiate with both CBY-Aden and CBY-Sana'a in reaching a compromise on their contradictory measures imposed on financial institutions (ibid.).

2.2.3 Microfinance banks and institutions

Background: The role of microfinance industry in Yemen

Microfinance Banks (MFBs) in Yemen are regulated by the central banks and can finance their activities by mobilising public savings and deposits (al-Shaibani, 2020). MFBs began to be licensed by CBY in 2007 and have been regulated by the central bank since 2009 as part of the effort to promote microfinance within the formal financial sector (ibid.). To date, there are ten

[22] Since 2010 to 2015, there are less than 2 bank branches for every 100,000 Yemenis (WDI, 2021).

microfinance entities in Yemen – three MFBs and seven unregulated microfinance institutions (MFIs). Compared with commercial banks, microfinance entities appear to issue more loans to broader population.

In early 2014, the World Bank (2015) indicated that the three main MFBs and MFIs, Al Awael (non-profit), Al Amal Bank (initially established as a MFI), and Al Kuraimi Islamic and Microfinance Bank (started as money exchange company) have a collective loan portfolio close to $50 million and deposit accounts of around $130 million, with 100,000 active borrowers and 280,000 savers. In comparison, Yemen's commercial banks reach only 121,102 borrowers, with fewer than 80 accounting for an estimated 70% to 80% of private lending by commercial banks (ibid.). Despite this, there seems to be more room for microfinance entities to expand financial services in rural areas where two thirds of Yemenis live. Al-Shaibani (2020) highlights that all ten MFBs/MFIs currently operating in Yemen are based in urban areas where 93% of their clients live.

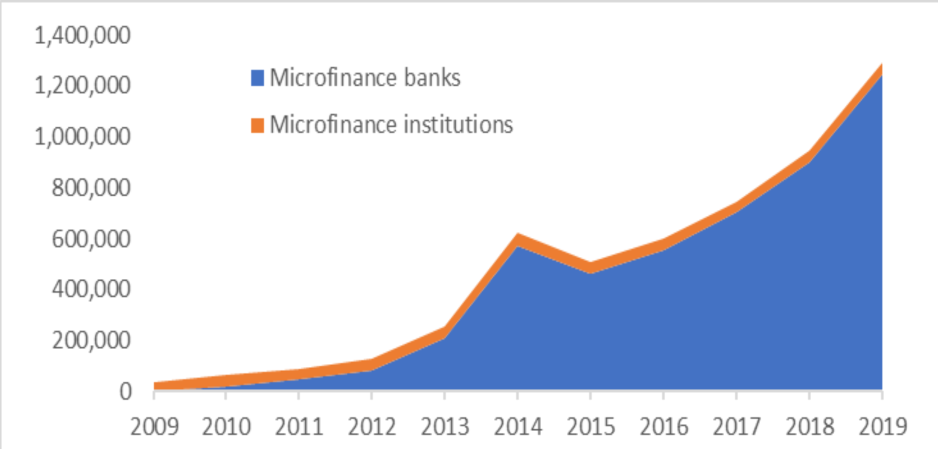
Impact of conflict and CBY fragmentation on microfinance operations
With the intensification of the conflict in 2015, the Yemen Microfinance Network (YMN, 2015) found that the biggest problem facing MFBs and MFIs was the displacement and relocation of thousands of their clients. During the conflict, there was also a reported increase in unregulated lenders (e.g., retailers, FX businesses) offering credit in both rural and urban areas on easier terms and competitive rates (ibid.). In response, the microfinance industry increased its write-offs, shifting and rescheduling the majority of loans. To cut conflict-related operational costs and maintain short-term sustainability, MFBs and MFIs have also taken the following measures (ibid.):

- Complete closure of all microfinance branches in conflict-affected areas and other directly affected governorates
- Temporary closure of some branches to reduce operational costs
- Suspension of loan disbursements (even to good clients)
- Decrease in the number of staff, working hours and salaries
- Suspension of expansion plans for 2015 and focus on short-term sustainability
- Postponement of launching new microfinance services by microfinance providers in partnership with commercial banks.

More recent analysis suggests that the number of active microfinance savers increased after 2015. Particularly in MFBs, the number of depositors grew annually by 28% on average from 2016 to 2019, reaching 1.2 million in 2019 (Figure 5). Noticeably, the sharp increase of MFB depositors was driven by the Al-Kuraimi Islamic Microfinance Bank, which accounts for 82% of savers in microfinance industry (al-Shaibani, 2020). As an Islamic bank, Al-Kuraimi did not invest in CBY treasury bonds (ibid.), which enabled it to retain liquidity when the CBY-Aden suspended treasury bill payments owed to banks. The perceived stability of Al-Kuraimi (and other MFBs) compared to the loss of confidence in the commercial banks led savers to shift their savings to MFBs (ibid.). In turn, MFB loans grew by 28% in 2017, by 43% in

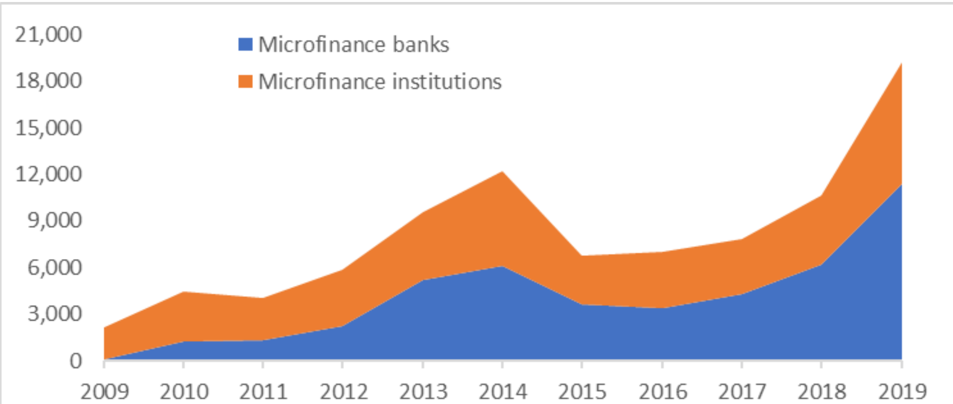
2018, and by 85% in 2019 reaching YER11.4 billion or about $19 million[23] (see Figure 6). Overall, the microfinance industry extends an average loan of YER89,072 (about $148) at an average interest rate of 18%, with women comprising 35.4% of loan recipients in 2019 (al-Shaibani, 2020).

Figure 5. Active savers in the Yemeni microfinance industry



Source: al-Shaibani (2020)

Figure 6. Value of microfinance industry's outstanding loan portfolio (million YER)



Source: al-Shaibani (2020)

2.3 Informal financial institutions and agents

2.3.1 Loosely regulated money exchange companies

Money exchangers (or *sarafeens*) have historically been important in Yemen's financial system, owing to the substantial role of remittances and money transfers among Yemeni households and businesses. With the deteriorating confidence in banks (as the first to suffer from the CBY branches' tit-for-tat measures), money exchange companies have become critical in facilitating trade, financial inclusion and exchange rate stabilisation (or destabilisation) in Yemen. Various reports differ regarding the number of

[23] Computed at YER600 per US dollar, following al-Shaibani (2020).

exchange companies in Yemen. MPIC (2018) estimates that there are about 1,421 exchange companies and offices as of 2017, an increased by 77% from 2014. More recently, a news report quoted CBY-Aden sources estimating 1,700 exchange offices and companies, including 1,100 without licenses (NewsYemen, 2021). Al Samawi et al. (2020) suggests that the number of exchange companies and houses which also largely engage in remittance operations increased from 767 in 2015 to 3,244 in 2019. One Yemeni economist indicates that currently, the CBY-Aden requires a $500,000 deposit before a money exchange license is issued (Al-Batati, 2020a).

The resulting divergent exchange rates between Aden and Sana'a following the banning of new YER banknotes in the DFA-AA areas has created arbitrage opportunities, exacerbating the exchange rate depreciation especially in IRG area. On 9 June 2020, the CBY-Aden launched an extensive campaign to curb currency speculation in order to arrest deterioration of the YER (World Bank, 2020d). CBY-Aden instructed exchange bureaux to trade the YER at a specific exchange rate and tightened supervision of money exchangers and local money transfer networks (e.g., Kuraimi Express, Al-Najm Transfers), with non-compliant money traders, unlicensed operators and those suspected of speculation (including banks) to be subjected to legal measures, including license withdrawal, heavy fines and judicial processes (ibid.).

In protest of CBY-Aden's 'arbitrary' measures against them, the Money Exchange Association of Aden closed exchange bureaux in the city in late June 2020 (World Bank, 2020d) to which the CBY-Aden responded in early July 2020, reiterating that implemented measures are within the law (CBY-Aden, 2020). Money exchangers closed shops again in early July 2020, in rejection of the STC's self-administration and repeated attacks on offices and employees (YPA, 2021).

Meanwhile, in DFA-AA areas, exchange bureaux were prohibited to sell foreign currency directly or indirectly to merchants and importers of selected sectors whose FX needs are already being supported by the Payment Committee in Sana'a (World Bank, 2020d). The measure was reported to have eased market jitters and strengthened YER in Sana'a (ibid.). In addition, reports suggest that the DFA-AA imposed a fixed exchange rate and observes daily transactions of local exchange companies in their territory (al-Batati, 2020a).

Key informants suggest that CBY-Aden face challenges enforcing its regulations on informal local exchange firms, partly due to limited CBY-Aden capacity and other ongoing instability (e.g. STC) in Aden (ODI interviews, 2021). To arrest continued depreciation of YER and accelerating inflation in the IRG areas, the CBY-Aden banned all local money transfer networks, closed several unlicensed exchange companies, prohibited internal transfer of foreign currencies while providing dollars for oil importers around late September to October 2020 (al-Tamimi, 2020; EG24 news, 2020; Al-Batati 2020a, 2020b). Despite this, YER continued to be volatile and depreciated during the same period. By November 2020, CBY-Aden reached an agreement with local exchange companies to establish a 'unified company' mandated to monitor and regulate cash transfers (News Yemen, 2020; SCSS, 2020b). On 1 December 2020, CBY-Aden closed 30 private exchange firms for violating currency speculation rules (Al-Batati, 2020b). Meanwhile, the Money Exchange Association in Aden denied any role on sharp YER depreciation, claimed to have helped inject millions of dollars into CBY-Aden, and expressed support for its measures against unauthorised and non-compliant exchange firms (Al-Batati, 2020a, 2020b). A key informant also said that CBY-Sana'a also announced in 2021 its intention to create its own unified network (ODI interviews, 2021).

The restrictive regulations imposed on money exchanges require a balancing act between financial inclusion and exchange rate management objectives of CBY-Aden and CBY-Sana'a. Strict monitoring, supervision and necessary closure of certain money exchangers may help address currency speculation. However, such measures would also be likely to disrupt money transfer and remittance flows to beneficiaries in dire need of accessible financial services and further limit the sources of foreign currency for traders and banks. As one economic analyst highlighted, 'The central bank attempts to regulate money exchangers but they [central bank] cannot push them [money exchangers] too hard. Without money exchangers, the house would fall down' (ODI interviews, 2021).

2.3.2 Microfinance institutions

MFIs are unregulated by the central bank and their activities have limited outreach, particularly in rural areas. Yemeni MFIs rely almost wholly on external funds and programmes and have been historically challenged by poor infrastructure for financial services, high operating and financing costs, and lack of strong and effective governance and management (al-Shaibani, 2020). Thus, when the conflict escalated, active MFI borrowers fell by 26% from 64,384 in 2014 to 47,888 in 2015 and MFIs' outstanding loan portfolio almost halved, from YER6.1 billion in 2014 to YER3.1 billion in 2015 (ibid.).

To assist the MFIs, the World Bank and United Nations Development Programme (UNDP) sponsored the Yemeni Emergency Crisis Response Project in April 2017. Since its commencement, the project has funded nine MFIs to continue providing financial services to their over 84,300 clients and has extended grants to over 5,000 owners of small- and medium-sized enterprises (SMEs) (48% of which are owned by women) to pay their debts and continue their businesses (UNDP, 2021).

2.3.3 Hawalas

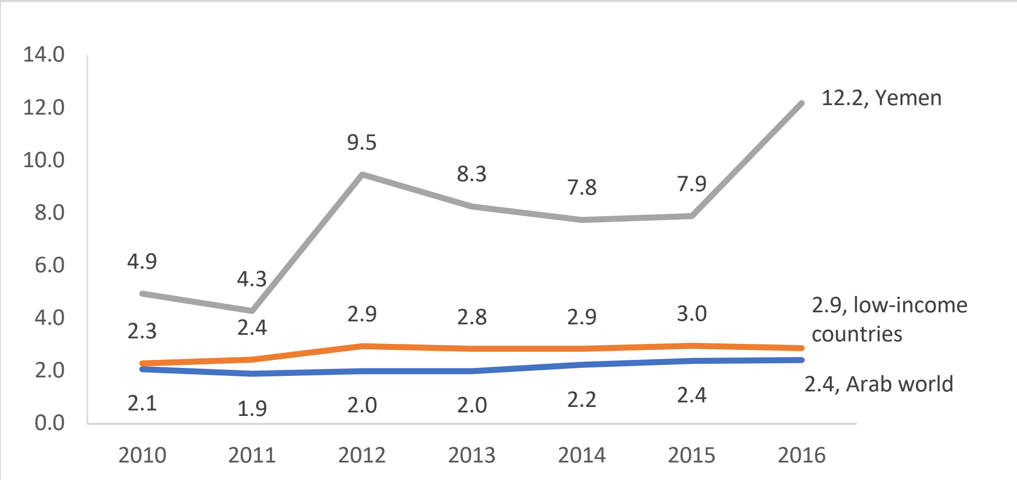
Hawala is a semi-informal system of many kinds of international money transfers that do not involve the physical transfer of cash (Bahadur, 2020). The process involves customers using brokers in their local areas to send or receive money, where senders pay a small commission and recipients use a password to release the funds (ibid.). Since the traditional hawala networks, for example in Yemen and Somalia, are based on a system of honour and trust, Bahadur (2020) highlights its advantages, such as that they:

- can function in environments with weak or non-functioning banking system
- offer competitive pricing
- can transmit money relatively rapidly in specific cultural contexts.

With these advantages, the hawalas are critical to the functioning of the economy and the operations of humanitarian and development agencies, especially in environments with weak or absent formal financial institutions. Clearly, one of the major risks of the hawala system is its capacity to conceal criminal proceeds and evasion of currency controls, sanctions, and taxes, given that hawala operators often fail to enforce Anti-Money Laundering/ Combating the Financing of Terrorism (AML/CFT) controls (Bahadur, 2020).

In Yemen, hawalas, with their existing local and regional networks, are an accepted and integral part of the financial system (Hutton et al., 2018). Registered hawalas also operate openly for private cash and humanitarian cash transfers in areas not served by the formal banking sector (ACAPS, 2020). A key informant indicated that hawalas and local money transfer organisations partner with formal banks and international transfer companies such as Western Union to disburse remittances within Yemen, ensuring both liquidity and financial access to the wider Yemeni population (ODI interviews, 2021). Remittances (as % of GDP) entering Yemen are usually higher than in Arab and low-income countries and have become more important following the peak of the conflict, increasing to $3.8 billion (12.2% of GDP) in 2016 from $3.4 billion (7.9% of GDP) previously (Figure 7).

Figure 7. Personal remittances, received (% of GDP)



Source: WDI (2021)

The role of hawala network is also intertwined with the delivery of financial services for banks and international organisations in remote and high-conflict areas of Yemen, according to our informants (ODI interviews, 2021). For example, a trusted formal financial institution such as Al Kuraimi relies on a network of people to deliver the cash in areas where there is no functioning bank branch. A key informant also said that although commercial banks attempted to employ a SWIFT code for domestic transfers to minimise the uncertainty and complexity of inter-bank transfers across areas, its high cost maintained the popularity of *hawalas* and *sarafeens* as the preferred channel for customers (ibid.). For local businesses and NGOs, the popularity of working with the *sarafeen* and the hawala system came from – as one respondent noted – the promise that money will be immediately transferred to where you need it and that it will be done 'cheaper, faster and easier' than through a formal bank whose assets have been largely frozen since the fragmentation of the central bank (ODI interviews, 2021; see section 2.2.2).

Key informants confirmed that the network of *hawalas* and *sarafeens* had surged, particularly after 2016, when the crisis in the formal banking system (discussed above) forced traders to rely more on hawalas and other providers to access financial services and foreign currency. During the last quarter of 2020, however, in an attempt to curb currency speculation and money laundering, the CBY-Aden started banning all informal remittance via the hawala system, and initiated plans to replace this system with a formal electronic 'unified network' under the CBY-Aden (Al-Batati, 2020a, 2020b). To date, the CBY-Aden's planning process for the unified network is still underway according to a key informant (ODI interviews, 2021).

2.4 Evolution of Yemen's financial sector and implications for households and firms

There are two central themes that drive the evolving structure of Yemen's financial sector. One is the conflict between the IRG and DFA-AA, which extends into an economic war over monetary, fiscal and trade policies. This has led not only to a suffering economy, but also to inequalities (e.g., higher inflation tax in IRG areas; uneven distribution of civil servant wages; constrained access to trade financing support) and inefficiencies within the financial system (e.g., expensive fees for money transfers across the warring territories). The banking sector's balance sheets and operations directly suffered from de-risking, frozen assets as well as threats for non-compliance to conflicting regulations of CBY-Aden and CBY-Sana'a. The weakened banking sector capacity led to a loss of confidence in the formal financial sector, as evident from the substantial increase of share of money outside the banking system to total money supply – from 26.1% or YER811 billion in 2014 to 51% or YER3 trillion in 2019 (MPIC, 2021).

The above environment paved the way to another key feature of the evolving financial sector – the increasing reliance on informal financial institutions and agents for financial services. Money exchange operators (both licensed and informal *sarafeens*) appear to be the engine that keeps financial flows running within Yemen's financial sector. Their remittance operations and strong connections with *hawala* networks enable them to secure domestic (old and new YER banknotes) and foreign currency (US dollars and KSA riyals) necessary for trade and money transfers. Informal financial institutions and agents also fill the financial inclusion gap, as they are critical in disbursing facilitating disbursements of money transfers and loans to hard-to-reach and conflict areas. However, the increasing informality is not without risks—including increasing opportunity for currency arbitrage and rising AML/CFT concerns due to lack of transparency and tracing of informal financial transactions (ODI interviews, 2021).

Drawing on our analysis of different segments in Yemen's financial system, Figure 8 maps out the evolving financial structure of Yemen's financial regulators, institutions and agents amid the ongoing conflict. Figure 9 then illustrates the following five main channels through which the conflict affects the financial sector as a whole, with knock on effects in food security. The five main channels are as follows:

1. **reduced availability of FX**, as a result of the conflict- and economic-induced BoP shock. This has disrupted trade financing and in turn

contributed to increases in the price of food imports through exchange rate depreciation;

2. **conflicting monetary policy** between the IRG and DFA-AA, which have led to dual exchange rates and restricted cash liquidity in DFA-AA areas. This contributed to increasing financial sector transaction costs and reducing operational efficiency, whilst also contributing to soaring price inflation and eroded purchasing power, especially in IRG areas;

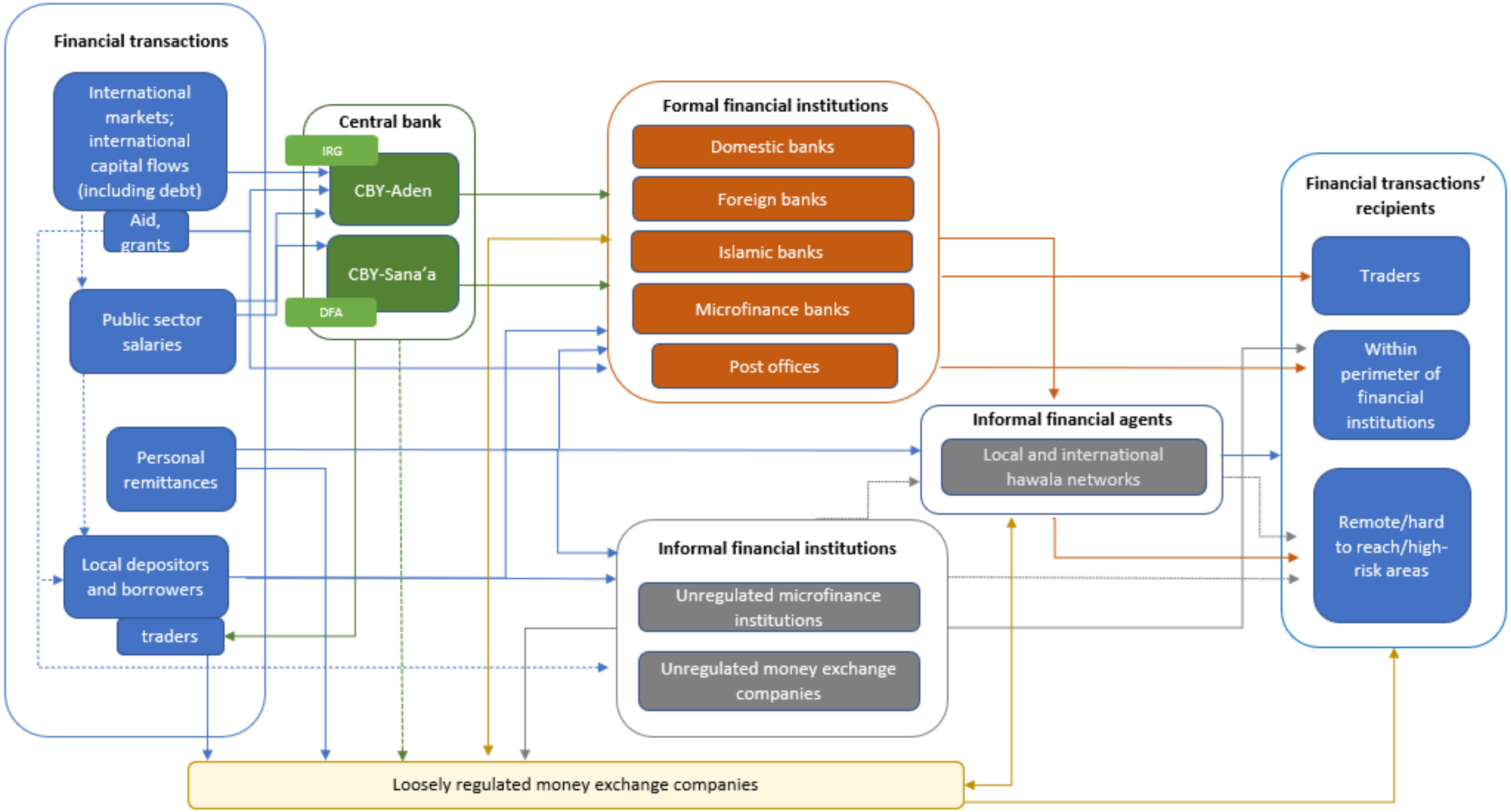
3. **conflicting regulation for financial institutions** between the IRG and DFA-AA, which have led to higher transaction costs for financial sector institutions, impeded financial sector liquidity, disrupted bank operations in some cases and complicated traders' access to FX. These in turn, partly explain the increasing cost of capital, declining overall credit, and low share of loans extended to the agricultural sector.

4. **contraction of public sector revenues**, which amongst other things have led to the non-payment of public sector debt held by domestic financial institutions, severely affecting financial sector liquidity and the ability of the financial sector to support private sector actors in the food supply chain.

5. **uneven distribution of payment of public sector salaries**, which have been financed by issuance of new bank notes in IRG areas, and disbursed sporadically in half-payments in DFA-AA areas. Increased money supply by CBY-Aden prompted inflation and eroded purchasing power in IRG areas, while controlled inflation in DFA-AA areas was partly explained by the ban on the use of new banknotes and depressed civil servants' income.

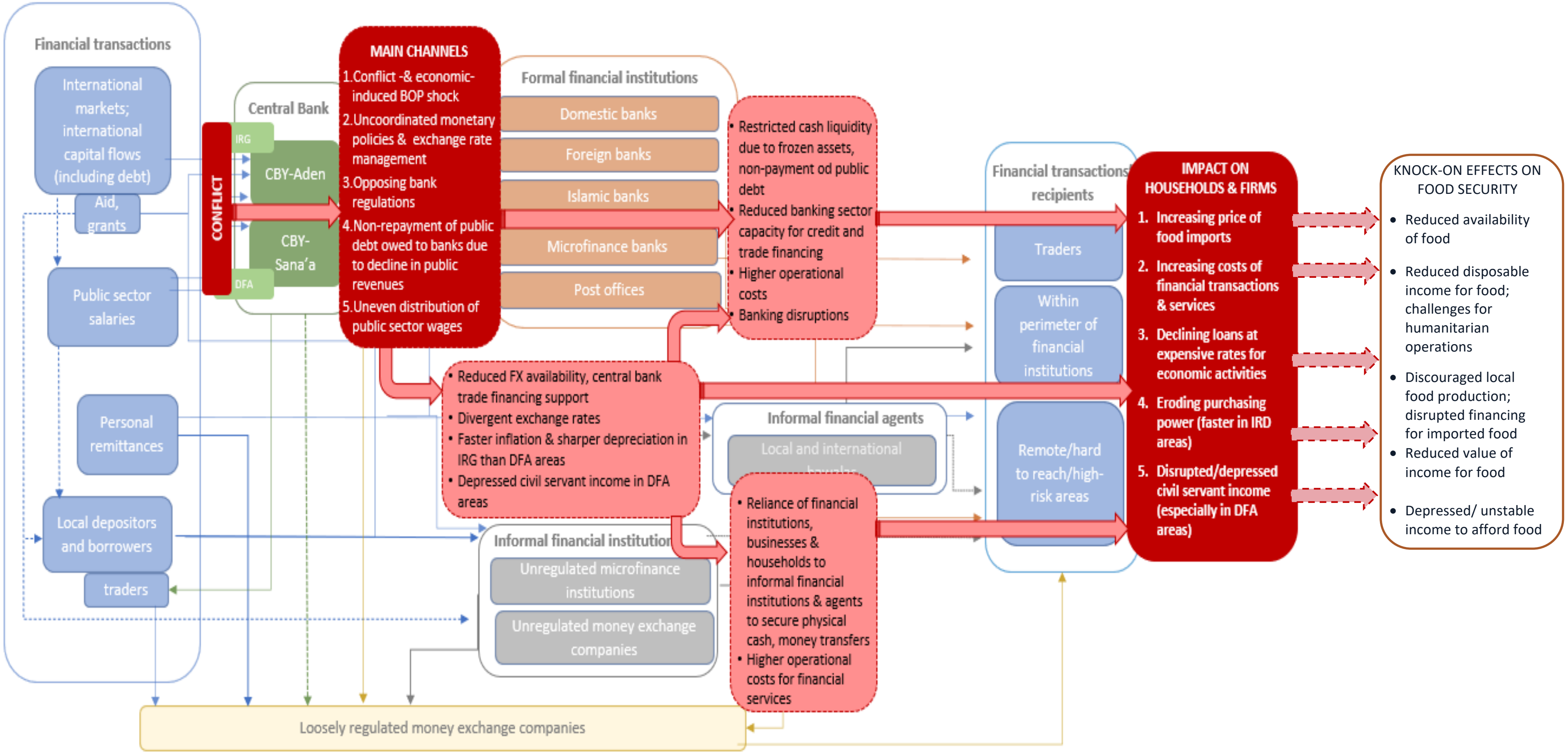
In summary, the impact of the conflict on the financial sector and the resulting increased reliance on informal financial institutions and agents come with high costs for ordinary Yemenis in the form of higher consumer prices, limited and expensive access to credit, and high financial transaction costs. In the next section, we will investigate in further detail on how these conflict impacts on the financial sector influence food supply and demand, and thus exacerbate food insecurity in Yemen.

Figure 8. Current dependencies within Yemen's financial sector structure to facilitate the delivery of financial services



Note: Solid line arrows indicate direct connection/relationship between financial institutions; broken line arrow indicates a degree of connection/relation.
Source: Authors

Figure 9. Channels of impact of conflict on Yemen's financial sector and knock-on effects on food security



Note: The red box in the left hand-side highlight conflict as the root cause that generates the five main channels through which the conflict affects the financial sector. The pink boxes describe the specific channels through which specific financial sector segments are affected by the conflict. The red box in the right-hand side enumerates major impacts on households and firms, and their corresponding knock-on effects on food security in Yemen.

Source: Authors

3 Knock-on effects of fragmented and deteriorating financial sector on food security

The Food and Agriculture Organization of the United Nations (FAO, 1998) defines food security as ‘a situation where both food supply and demand are sufficient to cover food requirements[24] on a continuous and stable basis’, with the following three key interconnected dimensions.

- **Food availability** (or food supply in economic terms) refers to the level of food supplies, comprising market supplies from domestic production, food stocks and food imports; non-market supplies such as free food aid or feeding programmes; and subsistence production that does not enter the market and directly contributes to household consumption. For this analysis, we cover the market and non-market food supplies that are affected by disruptions in the financial sector discussed in Section 2.
- **Food accessibility** (or food demand in economic terms) refers to the ability to afford to meet food needs (beyond subsistence production) as effective demand. For this analysis, we will focus on impact of disruptions in the financial sector on household income, which is a major determinant of households’ ability to gain access to market supplies of food.
- **Food stability** refers to variations and risks of shortfalls in food production, supplies and/or demand over time.

Refer to Annex B on the detailed discussion of factors driving the economic relationships behind food supply, food demand and resulting food prices in a small open economy such as Yemen, as well as the role of (stable or unstable) economic policies, institutions and infrastructure in such relationships.

Table 1 below summarises how the five channels of the conflict to the financial sector and the resulting deterioration of the financial system (identified in previous section 2.4) are translated to knock-on effects on food security (also see Figure 9), followed by detailed discussions in next sub-sections.

[24] An approximate expression of the aggregate food requirements are a country’s calorie or staple food requirements (FAO, 1998).

Table 1. Knock-on effects of fragmented financial sector on food security

<table>
<tr><th rowspan="2">Channels of impact of the conflict to the financial sector</th><th rowspan="2">Impact of the fragmented and deteriorating financial system</th><th colspan="2">Knock on effects on food security</th></tr>
<tr><th>Food demand</th><th>Food supply</th></tr>
<tr><td>1. Reduced FX availability following conflict- and economic-induced BOP shock</td><td>• Exchange rate depreciation
• Disrupted trade financing (e.g., LoC support by the central bank, trade financing services by banks)</td><td>• Reduced affordability of imported food</td><td>• Operational disruptions in food importing due to lack of FX financing</td></tr>
<tr><td>2. Conflicting monetary policy (e.g., money supply, circulation) between IRG and DFA-AA</td><td>• Dual exchange rates
• Sharper depreciation and faster inflation in IRG areas
• Restricted cash liquidity in DFA-AA areas
• Higher financial sector's transaction costs and reduced operational efficiency associated with dual exchange rates</td><td>• Eroded purchasing power for food especially in IRG areas
• Reduced disposable income for food due to higher costs of financial services (e.g., remittances, money transfers)</td><td>• Challenges for humanitarian operations (e.g., for food aid delivery) due to higher financial transaction costs</td></tr>
<tr><td>3. Conflicting regulation for financial institutions between IRG and DFA-AA</td><td>• Financial sector's impeded liquidity and operational disruptions associated with banks' frozen assets, and compliance to conflicting regulations on bank supervision and on access to trade financing support
• Resulting weakened banking sector capacity for lending to economic activities</td><td rowspan="2"></td><td rowspan="2">• Reduced food importing capacity with declining trade financing services from the weakened banking sector
• Discouraged local food production due to persistently low credit at expensive rates extended by banks to small businesses and agricultural sector</td></tr>
<tr><td>4. Contraction of public sector revenues</td><td>• Non-payment of public sector debt held by financial institutions
• Resulting weakened banking sector capacity for lending to economic activities</td></tr>
<tr><td>5. Uneven distribution of public sector wages</td><td>• Faster inflation in IRG areas with central bank financing of public sector wages largely distributed in IRG areas
• Controlled inflation in DFA-AA areas, partly explained by sporadic civil servants' wages and ban on new banknotes</td><td>• Eroded purchasing power for food especially in IRG areas
• Depressed/unstable income for food among civil servants in DFA-AA areas</td><td></td></tr>
</table>

3.1 Food availability

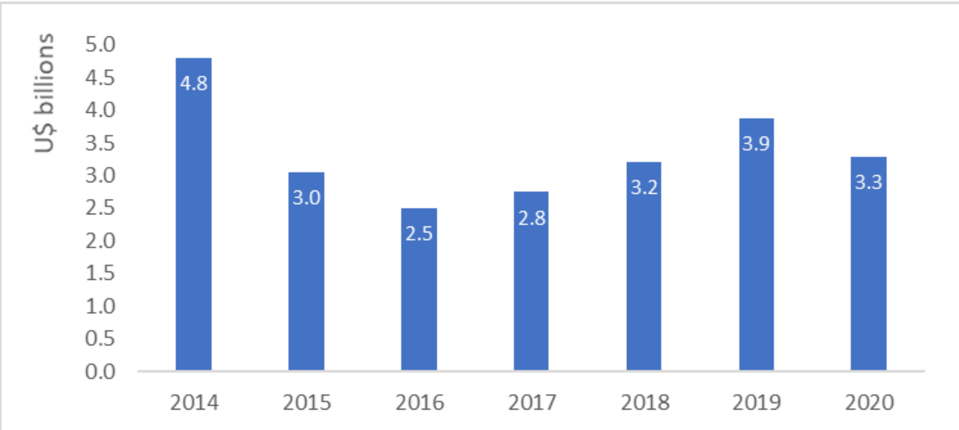
The fragmented central bank and interdependencies among layers of financial actors in the conduct of financial services in Yemen affect food availability (supply) mainly through the following channels: i) operational disruptions in food imports due to scarcity of FX and LoCs for payment to suppliers; ii) high cost of capital (e.g. high interest on loans) as an input to local food production; and iii) challenges for humanitarian operations due to multiple financial transactions involved in converting US dollar aid into divergent exchange rates and in securing old and new YER banknotes necessary to facilitate the supply of food aid in different jurisdictions.

First, Yemen's imports substantially since 2014 – falling by 30% from $4.8 billion in 2014 to $3.3 billion in 2020 (Figure 10). This decline was driven by many factors such as depressed demand, perhaps also importantly by the fall in FX revenue from oil exports (by 89% from

2013 to 2020), which used to facilitate commodity imports and replenish foreign reserves for the central bank's exchange rate management. Estimates by interviewed analysts suggests a FX financing gap (demand less supply of foreign currency) of about $2 billion (ODI interviews, 2021).

In addition, LoCs facilitated by the KSA liquidity injection in CBY-Aden are not fully used by traders and commercial banks in the DFA-AA controlled areas due to restrictive policies by the DFA-AA (as discussed in Section 2), exacerbating the difficulties food importers experience in paying food suppliers. Consequently, a World Bank (2018) analysis find that food importers mostly required advance payments from their clients (wholesalers and retailers), leading small businesses which cannot afford such payment terms to cease operations. Overall, the lack of physical foreign currency support from the central bank and/or the high cost of acquiring foreign currency through informal financial channels curtail import activities, partly contributing to reduced and/or delayed essential food supply in Yemen.

Figure 10. Yemen's imports of animal, vegetables and other food products ($ billion)



Note: Data are based on products with HS codes 01–24. ITC data 2012–2015 are from Yemen's official data; 2016–2020 data are mirrored from data collected by Yemen's trading partner. The ITC advises caution in interpreting this indicator as data coverage of imports and exports might be different between Yemen and partner countries.
Source: Authors, based on data from International Trade Centre (ITC) Trade Map.

Second, the political fragility and weakened banking sector capacity makes loans – a capital input for local food production and distribution – more expensive, if not inaccessible, for small local farmers and sellers. This further limits the already minimal credit extended by the formal financial institutions for the domestic food suppliers and subsistence production. From 2014 to 2017, the share of total bank loans extended to the agriculture and fisheries sector hovered around only 2.5% (MPIC, 2018). A more recent survey among SMEs suggests that only 8.4% of micro enterprises[25] in Yemen succeeded in securing bank loans between 2017 and 2019 (SMEPS, 2020). In addition, conventional banks' lending rates have been historically high reaching 24%,[26] and 18% from MFBs and MFIs.[27] This higher cost of production inputs would tend to reduce the overall volume of food supply, pushing prices up and depressing demand (see economic mechanisms in Annex B).

[25] SMEPS (2020) defined micro enterprises as businesses with 1-4 employees.
[26] Authors' calculations based on available data for Yemen (average, 2011–2013) in World Development Indicators.
[27] As of December 2019 (al-Shaibani, 2020)

Third, humanitarian operational agencies' funds were in the past reportedly provided with banking services that offered them lower-than-market exchange rates (YEC and CBY-Aden, 2019), although informants suggest that international organisations are now able to access closer to market exchange rates in Aden and Sana'a (ODI interviews, 2021). The difference between the YER value of old banknotes (in DFA-AA/Sana'a) and new banknotes (in IRG/Aden) against the US dollar had reached YER392 by 29 July 2021. Theoretically, the multiple financial transactions involved in exchanging humanitarian US dollar aid funds at different exchange rates and in securing old and new YER banknotes would have created sub-optimal facilitation of food aid supply in different jurisdictions. This sub-optimal scenario is indicative based on recent estimates of associated cost of financial transfers from new to old bank notes between January to July 2021, which reached as high as 40% to 60%[28] of the value of the transfers.

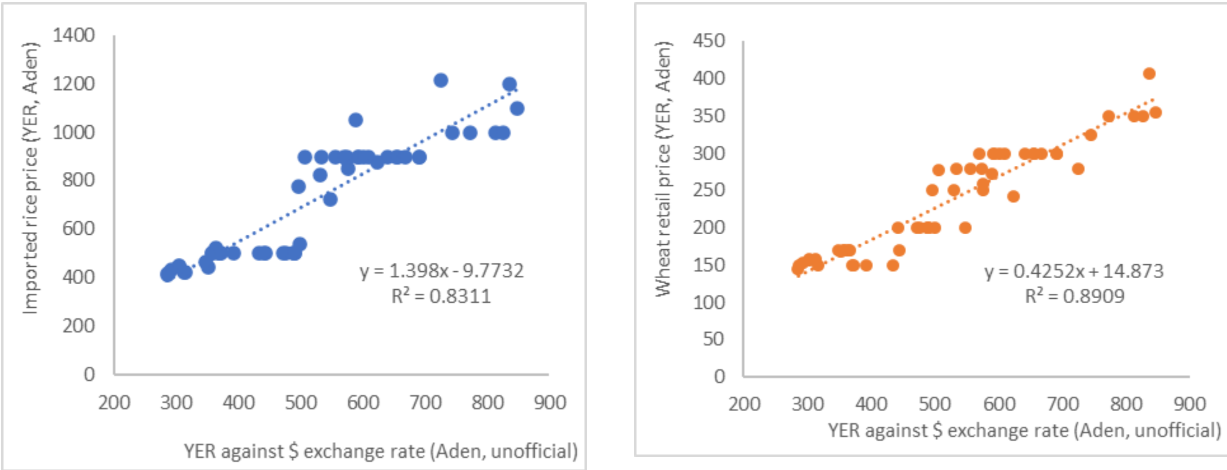
3.2 Food accessibility

The fragmented CBY and interdependencies among layers of financial actors in the conduct of financial services in Yemen affect food accessibility (demand) mainly through the following channels: i) the increased price of food imports following YER depreciation; ii) deteriorating purchasing power due to inflation, especially in the IRG areas; iii) sporadic half-payments of salaries for public servants in the DFA-AA controlled areas, depressing disposable income; and iv) increasing cost of financial services, which also erodes disposable income.

First, through the 'exchange rate pass through', a depreciated YER makes imports more expensive, which in turn increases the price of food and accelerates overall prices. Figures and 12 show the co-movement of exchange rates and staple food prices in Aden and Sana'a from July 2016 to December 2020. Simple correlation regressions suggest that for every YER1 depreciation against the US dollar, price of imported rice increases by YER1.4 in Aden and YER1.7 in Sana'a (not accounting for other factors, left panel of Figures 11 and 12). Prices of wheat increase by YER0.4 and YER0.3 in Aden and Sana'a, respectively (not accounting for other factors, right panel of Figures 11 and 12). Without stable FX reserves, a central bank would not be able to intervene to arrest depreciation. Since 90% of Yemen's food supplies depend on imports, increased prices of food imports will continue to be passed through domestic prices, making food less affordable for the poorest Yemeni population, consequently depressing food demand and contributing to national food insecurity.

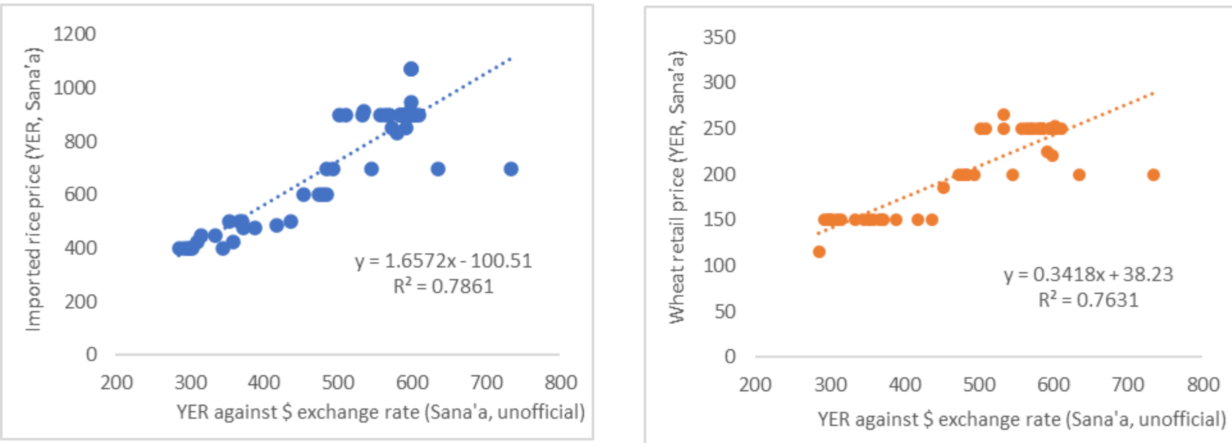
[28] Associated fees of transfers between IRG and DFA areas could reach 40% to 50% to 60% of the value of the amount transferred, as cited in World Bank (2021b), MPIC (2021) and Mukhashaf and Al-ansi (2021) respectively.

Figure 11. Correlations of exchange rates and food staple prices in Aden, July 2016–December 2020



Source: Authors' computations based on YETI/WFP data

Figure 12. Correlations of exchange rates and food staple prices in Sana'a, July 2016 to December 2020



Source: Authors' computations based on YETI/WFP data

Second, the resulting inflation from YER depreciation (among other factors) results in reduced purchasing power of the YER. The situation is exacerbated in IRG areas, following an expansionary monetary policy (i.e., printing new money) of CBY-Aden. This fuelled sharper deterioration of YER in Aden, resulting to divergent exchange rates in DFA-AA and IRG areas. For instance, in 2020, the relatively sharper depreciation of the YER (new banknotes) was accompanied by the higher cost of the Minimum Food Basket (MFB) at YER 43,717 in Aden versus YER 38,062 in the Sana'a (FAO-FSTS, 2020). The more expensive food items would have created less demand for food, which might have partly contributed to pushing more Yemenis experiencing food insecurity (Phase 3 and above) from 10.6 million in 2014 to 13.5 million in 2020 (FAO-FSTS 2014; IPC-TWG, 2020).

In addition, the sharper depreciation in Aden may reduce the purchasing power of cash aid transfers at the expense of beneficiaries in IRG area. Table 2 presents scenario 1 in which disbursing similar aid worth YER5,980 across the country would enable Sana'a beneficiaries to buy 6.64 kilograms of rice but only 4.98 kilograms for Aden beneficiaries – a difference of 2 kilograms of rice, a foodstuff critical for aid recipients' daily survival. Scenario 2 estimates relative purchasing power for people receiving cash assistance from actors using location-based exchange rates. Under this scenario, beneficiaries in Aden and Sana'a receive about the same amount of rice. This illustrative example highlights the importance of taking into account location-based exchange rates for cash aid or remittances in achieving similar food security outcomes in both IRG and DFA-AA areas.

Table 2 Illustrative example of purchasing power of cash aid in Aden and Sana'a (December 2020)

Location of beneficiaries	$ cash aid	YER against $	YER cash aid equivalent	YER price of imported rice per kg	Kg of imported rice
Scenario 1 (same amount of YER across the country)					
Aden			5,980	1,200	4.98
Sana'a			5,980	900	6.64
Scenario 2 (using location-based exchange rates)					
Aden	10	837	8,365	1,200	6.97
Sana'a	10	598	5,980	900	6.64

Source: Authors' computations based on WFP and YETI database

Third, the politically driven suspensions or delays in paying the salaries of public servants via the CBY-Aden also deny these employees a predictable income with which to purchase food. The DFA-AA was also reported to divert revenues partly dedicated for civil servant salaries towards their war efforts (UNSC, 2021). The public sector is a major employer in Yemen – comprising a third of all employed Yemenis even before the conflict (ILO, 2015). In 2017, 40% of the population in the governorates of Marib, al-Jawf, Abyan and the Capital Secretariat (Sana'a) reported that they depend on government salaries (ibid.). With the non-payment of the salaries of public servants, who typically support large families and act as safety nets for villages, millions of Yemenis have been deprived of the breadwinner's income and source of personal loans (ibid.). This reduces the demand for food of public servants and their dependants and thus food security, and is expected to discourage additional food imports, further reducing the availability of food in Yemen (see relationships in Annex 2).

Another channel through which the financial sector is affecting the disposable income with which to buy food is the persistent lack of access to formal financial services and recently increased fees charged for money transfers. By 2019, only about 10% of the population had at least one bank account and there are only 1.4 bank branches per 100,000 Yemenis (AlSamawi et al., 2020). Financial access is even more difficult in times of intensified conflict, as demonstrated by the closure of microfinance branches in conflict-afflicted areas and suspension of loans even to good clients (YMN, 2015). This deprives the general population of access to finance to smooth their consumption, or led them to use expensive informal financial channels[24] that also erode their disposable income.

4 Conclusion: Rehabilitation of the financial sector to improve food security

The findings of this paper highlight that the channels through which the fragmentation and deterioration of the financial sector which exacerbates food insecurity in Yemen are deeply rooted in the political conflict. Thus, ending the war and striving for sustained peace are the ultimate policy priorities for Yemen. Without a political solution to the conflict and a significant increase in international and regional financial support, eradicating hunger and reversing the International Food Security Phase Classification (IPC) in Yemen will be difficult, if not impossible. The number of Yemenis experiencing food insecurity reached 13.5 million as of 2020 (IPC-TWG, 2020). The conflict has now extended to Marib governorate[29] where one million people are estimated to be displaced (UNHCR, 2021).

Despite the ongoing conflict, and although food insecurity in Yemen is a multidimensional problem (rooted in economic, social and environmental issues), a focused approach to ensuring financial access to business and increasing household purchasing power could improve food security. We present five main recommendations that could serve as entry points for international humanitarian, development and financial actors to help rehabilitate the financial sector and contribute to alleviating the worsening food security crisis in Yemen:

Recommendation 1: International actors and financial institutions initiate a third-party mediation the CBY-Aden and CBY-Sana'a to maintain the political neutrality of financial services.

1.1 *Initiate a third party-facilitated and well-represented dialogue mechanism to enable IRG and DFA-AA* to *identify concrete common ground and mutually agreed compromises that will insulate financial transactions in Yemen from political influences.* Key areas include coordinating and harmonising the CBY-Aden and CBY-Sana'a's stance on monetary circulation, liquidity management and supervision of bank and money exchanges. The third-party intermediation and coordination should engage all levels of stakeholders in the financial sector – including representatives from associations such as the YBA, chambers of commerce, businesses, money transfer companies, central banks at the decision-making and technical levels and major international and bilateral donors. Ensuring that discussions would be well-represented could incentivise participation, help identify targeted interventions affecting all parties, and restore trust among financial actors and regulators.

[29] New offensive attacks in Marib started in September 2021, with the latest incident of exploded artillery shell reported on 17 November 2021 (UNHCR, 2021).

1.2 *Facilitate a multi-stakeholder dialogue among CBY-Aden, CBY-Sana'a, financial institutions, private sector associations, bilateral and international development partners in order to identify concrete steps aimed at restoring banks' liquidity*. Key areas include enabling banks to fully access their accumulated deposits in the central bank, payment of public debt owed to financial institutions, allocation of external FX support, and de-risking positions on Yemeni banks. Increased capacity of the banking sector will not only help smooth out trade financing and lending to economic activities, but would also encourage international financial inflows and investment via banks' safe formal transmission channels.

1.3 *International actors should persistently encourage the relevant parties to meet their commitment under the Stockholm agreement to channel revenues from Hudaydah port to paying the salaries of civil servants.* The public sector accounts for a third of Yemen's total employed population. They also include many teachers, doctors, sanitation workers and other staff who are critical partners for the humanitarian response. Public sector employees also act as safety nets (a source of personal loans) in villages where there are seldom any formal financial services. Doing so would *remove* a major block to improving household income and food security.

One model to be considered is Somalia's Financial Governance Committee (FGC) – a high-level forum for dialogue and independent advice on strategic financial governance issues among various government agencies, bilateral donors and IFIs (see Annex C). The FGC is largely funded by the World Bank-administered multi-donor fund and has resulted in increasing government efficiency, building trust among stakeholders, and restoring the credibility of Somalia's financial governance. One of the key success factors of the FGC is the international community's efforts to not try to steer the discussions remotely. The World Bank would be well-placed to spearhead the creation of an FGC-model forum on insulating financial services from political influences, backed up by predictable financing from international donors and coupled with the deployment of strong impartial experts and advisers to work with local actors.

Recommendation 1 and the corresponding entry points might entail sustained and patient efforts against a backdrop of intensifying conflict and repeated failures before reaching a consensus among parties to the ongoing conflict, but the potential returns of this recommended confidence-building measure would be significant at the national and household level. As seen in Figure 9, even if only one financial transaction is neutralised or unlocked (e.g., salary payments for public servants), it would have multiplier effects in stabilising household incomes and safety nets in rural areas to obtain food. In addition, one key agreement – no matter how small – can signal a willingness among the relevant parties and other stakeholders to compromise towards a solution. This can provide a basis for future larger-scale negotiations and greater momentum for peace-building.

Recommendation 2: International donors and financial institutions should provide higher levels of aid (i.e., inject new FX funds) than previous commitments as a means to help stabilise the exchange rate in Yemen.

Substantial and predictable inflows of FX, similar to the KSA deposit of 2018 but on a more regular schedule, would help stabilise the currency, which in turn would help facilitate imports of essential food, abate surge in costs of food imports, and protect the purchasing power of Yemeni population. An IMF (2000) rule-of-thumb suggest that central banks should maintain reserves worth at least three months of imports that it can readily deploy to correct external imbalances via exchange rate intervention. Based on Yemen's pre-war escalation goods imports (i.e., 2012 to 2014) levels, this means that the CBY needs to maintain at least $3 billion[30] of foreign reserves.

In the past, an injection of capital from KSA helped stabilise and strengthen the YER for a brief period from 2018 to 2019 (see Figure 1), but it began to be depleted in 2020 to early 2021 (World Bank 2019d; ODI interviews, 2021). While reviving the oil export sector is one of the top priorities that would substantially help replenish foreign currency in the system, the sector's reduced capacity due to war-related physical damage, attacks and politically driven restrictions makes unlikely that this potential source of FX will be realised in the immediate term.

In this context, international donors and financial institutions will have to play a more important role in injecting substantial and predictable foreign funds in Yemen as a means to stabilise the currency. This will entail providing higher levels of aid than previous commitments. This will require multi-year financial planning and commitment on the part of donors, and sound governance structures and increased transparency regarding the management of such funds on the part of the implementing financial regulator and/or institutions. The IRG has indicated eagerness to work with donors to develop a feasible programme for these injections.

Recommendation 3: Expedite investments in digital infrastructure and skills (such as mobile money) to provide a trusted channel for remittances at lower cost, facilitate financial access to marginalised groups, displaced families and small farmers, and increase the use of formal financial channels.

Remittances play a key role in increasing foreign currency reserves in Yemen. They augment the income of households and small entrepreneurs without access to a stable income and credit, especially in times of intensifying conflict. Given its importance at the macroeconomic and microeconomic level, international actors should assume a more important function in nurturing safe channels for remittances and money transfers.

One way is to mobilise projects and investments is mobile money, which is a relatively convenient and cheaper way to transfer remittances to hard-to-reach areas in Yemen. Global average costs of low-volume remittances (less than $200) are only 3.9% via mobile money, compared to 6% via money transfer operators (Naghavi and Scharwatt, 2018). This could be a strong entry point in Yemen since as of 2019, 54% of the population has a mobile phone and remittances reached up to 12% of GDP in 2016 (WDI, 2021).

Since mobile money also offers high levels of security based on strong AML/CFT monitoring capabilities (ibid.), mobile money can also facilitate better financial regulatory oversight and supervision in Yemen and, in the process, reduce the currency arbitrage activities of unregulated financial institutions. The resulting efficiency of sending international remittances via mobile money could be leveraged for other government transactions and humanitarian aid, which could at the same time increase transparency and help restore trust among stakeholders in the financial sector.

With the objective of widening financial inclusion, the CBY started authorising banks to provide mobile money services in 2014. While electronic money accounts in five licensed banks reached only 807,919 (roughly 2.8% of population) in 2019, services remain concentrated in cities, and women accounted for only 13% of total mobile money users between 2016 and 2019 (AlSamawi, 2020).

The low uptake of mobile money services may be related to low levels of digital infrastructure and skills in Yemen (ranked 136/143 countries on the World Economic Forum

[30] Based on World Integrated Solutions database, Yemen's goods imports have an annual average value of $12.2 billion from 2012 to 2014, equivalent to $1billion per month.

digital network readiness index (WEF, 2015), which echoes the reported problems of most Yemeni electronic money users regarding the reliability of the mobile money application, mobile network coverage and mobile money agents (AlSamawi, 2020). There are also risks related to the uptake under intense political situations. One study on the use of mobile money in Afghanistan found that individuals who are exposed to violence are less likely to adopt and use mobile money and more likely to retain cash on hand (Blumenstock et al., 2015). On the other hand, most of the population in Somalia and Somaliland relies on mobile money transfers, given the weak formal banking system (El Taraboulsi-McCarthy, 2018; see Annex D). As the conflict has now extended to Marib and makes access to humanitarian aid more difficult in said governorate, digital money transfers could play a major role in providing fast assistance to millions of displaced families.

Thus, international actors should play an active role to expedite dialogues on potential public–private partnerships, providing financing support or guarantees to prospective investors, blended finance or development projects for mobile money transactions, along with capacity-building assistance for financial regulators in facilitating and supervising mobile money services, and on mobile money literacy for the Yemeni population at large.

Recommendation 4: Increase investment in human capital among financial regulators, financial services providers and consumers in adopting international standards/best practices in financial transactions.

International actors can help empower actors in financial services in Yemen by increasing their capabilities in gradually adopting international best practices and standards. Greater capabilities and increased transparency in the financial sector would also unlock Yemen's access to international markets, which may attract other financial flows (e.g., investments) for economic activities and in the long run make Yemen less dependent on donor-led injections of foreign currency.

This will entail sustained, flexible, and multi-year technical assistance, based on the absorptive capacity of the intended recipients. There are also high risks of potential attrition by providers of technical assistance moving to safer areas and being pulled out of Yemen in periods of intensifying conflict, or from the reluctance of financial regulators and providers of financial services to share the necessary information for donors to assess Yemen's technical capacity needs. Ongoing multi-donor (e.g., World Bank, Arab Monetary Fund and USAID) initiatives exist to build the CBY's payment system capacity (World Bank, 2019c), but there is still a need for a detailed diagnostic of the technical capacity of the financial sector in Yemen, and international donors could learn from World Bank/OECD/bilateral donor strategies on national financial development and inclusion projects LICs with weak banking systems when considering political realities in Yemen.

References

ACAPS (2020a) *Volatility of the Yemeni Riyal: Drivers and impact of Yemeni Riyal's volatility*. Thematic Report. ACAPS Yemen Analysis Hub (https://www.acaps.org/sites/acaps/files/products/files/20200129_acaps_yemen_analysis_hub_drivers_and_impact_of_yer_volatility_0.pdf).

ACAPS (2020b) 'The end of Saudi financial support to Yemen: scenarios' (https://www.acaps.org/sites/acaps/files/products/files/20200609_acaps_yemen_analysis_hub_end_of_saudi_financial_support_to_yemen_scenarios.pdf).

ACAPS (2021a) 'Yemen risk overview: outlook for December 2020–May 2021 (February update).' Risk Update 11 March (https://reliefweb.int/sites/reliefweb.int/files/resources/20210311_acaps_yemen_analysis_hub_risk_update_february.pdf).

ACAPS (2021b) 'Yemen crisis impact overview. Key humanitarian developments in 2020 and outlook for 2021', 10 May. Crisis Insight. (https://www.acaps.org/sites/acaps/files/products/files/20210510_acaps_yah_crisis_impact_overview_0.pdf).

Addison, T. (2002) 'Conflict and financial reconstruction'. UNU-WIDER Blog. United Nations University (https://www.wider.unu.edu/publication/conflict-and-financial-reconstruction).

Ahmed, R. (2020) *Yemen's currency crisis and the corresponding impacts on markets– analysis and correlation*. Technical Working Group on Currency Exchange. Working Paper. NORCAP (https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/yemen_currency_crisis_and_correlation_with_markets_final_23102020.pdf).

Al-Akhali, R. (2021) 'The panel of experts err on Yemen'. Sana'a Centre for Strategic Studies (https://sanaacenter.org/publications/analysis/13455).

AlSamawi, A.M., Al-Fosail, B.A and Al-Hada, S.Z et al (2020) 'Electronic Payment Services in Yemen: challenges and opportunities for success'. Institute of Banking Studies (https://www.findevgateway.org/paper/2020/10/electronic-payment-services-yemen-challenges-and-opportunities-success).

Al Bashiri, M.A. (2019) 'Economic confidence building measures – civil servant salaries'. Policy Brief No. 11. Rethinking Yemen's Economy. DeepRoot Consulting, in coordination with the Sana'a Center for Strategic Studies and Center for Applied Research in Partnership with the Orient (https://devchampions.org/uploads/publications/files/Rethinking%20Yemen%E2%80%99s%20Economy%20-%20policy%20brief%2011.pdf).

Al-Batati, S. (2020a) 'Yemen food costs soar as currency plunges to new low'. Arab News, 4 November (www.arabnews.com/node/1758576/business-economy).

Al-Batati, S. (2020b) 'Yemen central bank shuts firms linked to currency crash'. Arab News. 2 December (https://arab.news/n4h3w).

Al-Muslimi, F. (2019) 'Revitalizing Yemen's banking sector: necessary steps for restarting formal financial cycles and basic economic stabilization'. Sana'a Center for Strategic Studies (https://sanaacenter.org/files/Digital_Summary-banking_sector_in_yemen.pdf).

Al-Shaibani, M. (2020) 'Microfinance in Yemen: An overview of challenges and opportunities.' Rethinking Yemen's Economy (https://sanaacenter.org/publications/main-publications/9808).

Al-Tamimi, N.A. (2021) 'Central Bank in Aden seeks to stabilise riyal'. Almashareq News, 20 July (https://almashareq.com/en_GB/articles/cnmi_am/features/2020/10/20/feature-01).

Anne, C. (2021) 'Yemen relief groups concerned UN experts report may hurt aid work'. Aljazeera News, 26 May (https://www.aljazeera.com/news/2021/3/26/yemen-relief-groups-concerned-un-experts-report-may-hurt-aid-work).

Ayieko, O. (2020) 'Somaliland adopts e-shilling payment service for civil servants'. Busiweek, 15 January (https://www.busiweek.com/somaliland-adopts-e-shilling-payment-service-for-civil-servants/).
Bayoumi, Y. (2016) 'Exclusive - Yemen's central bank denies irresponsible use of external reserves'. Reuters, 8 August (https://www.reuters.com/article/uk-yemen-security-centralbank-exclusive-idUKKCN10K015).
Biswell, A. (2019) 'The war for monetary control enters a dangerous new phase'. Yemen Economic Bulletin. Sana'a Center for Strategic Studies (https://sanaacenter.org/files/The_War_for_Monetary_Control_en.pdf).
Bolton, L. (2020). 'Establishing Mobile Money Systems' K4D Helpdesk Report. Brighton: Institute of Development Studies (https://core.ac.uk/download/pdf/334956439.pdf).
Browning, N. (2016) 'How Yemen's wartime central bank keeps country afloat', Reuters Business News (https://www.reuters.com/article/us-yemen-security-cenbank-insight-idUSKCN0YW0F7).
CBY-Aden (2020) Central Bank of Yemen 'Statement' (https://www.cby-ye.com/archives/709).
Dickson, A. and Loft, P. (2021) 'Yemen: UK Government's aid reduction'. House of Commons, UK Parliament (https://commonslibrary.parliament.uk/yemen-uk-governments-aid-reduction/).
El Taraboulsi-McCarthy, S. and Cimatti, C. (2018) *Counter-terrorism, de-risking and the humanitarian response in Yemen: a call for action*. HPG Working Paper. London: ODI (https://www.odi.org/sites/odi.org.uk/files/resource-documents/12047.pdf).
Elsabbagh, D., Kurdi, S. and Wiebelt, M. (2021) 'Model: Impact of falling remittances amid Covid-19 on Yemen's war-torn economy'. IFRPI Blog. Washington DC: International Food Policy Research Institute (https://www.ifpri.org/blog/model-impact-falling-remittances-amid-covid-19-yemens-war-torn-economy).
EG24 News (2021) 'The "Yemeni Central Bank" stops all local remittance networks'. Erm News (https://www.eg24.news/2020/10/the-yemeni-central-bank-stops-all-local-remittance-networks-erm-news.html).
FAO – Food and Agriculture Organisation of the United Nations (2016) 'FAO warns of rapidly deteriorating food security in Yemen'. Press release, 26 January (https://www.fao.org/news/story/en/item/380653/icode/).
FAO - Food Security Technical Secretariat (FSTS) (2014) '4th round IPC analysis – summary of findings Acute Food Insecurity Current Situation Overview'. Yemen Food Security Information System Development Programme. (https://reliefweb.int/report/yemen/yemen-4th-round-ipc-analysis-summary-findings-acute-food-insecurity-current-situation).
FAO-FSTS (2015) 'IPC Indicative Acute Food Insecurity Situation Overview in Yemen – June 2015' Yemen Food Security Information System Development Programme. (https://reliefweb.int/report/yemen/yemen-indicative-ipc-acute-food-insecurity-situation-overview-june-2015).
FAO-FSTS (2020) 'Monthly Market Monitoring Bulletin' May 2020. Issue number 58. (https://fscluster.org/sites/default/files/documents/fao_fsts_market_monitoring_bulletin_may_2020_en.pdf).
Hutton, J. Boeser, S. and Turnbull, M. (2018) 'CTP in challenging contexts: case study on CTP and risks in Yemen 2015–2018'. The Cash Learning Partnership (https://www.calpnetwork.org/wp-content/uploads/2020/03/1540822102.CaLP-Yemen-CTP-Case-Study-1.pdf).
Iazzolino, G. (2015) *Following mobile money in Somaliland*. Rift Valley Institute Research Paper 4 (https://www.refworld.org/pdfid/565552aa4.pdf).
IMF – International Monetary Fund (2021a) World Economic Outlook Database, April (https://www.imf.org/en/Publications/WEO/weo-database/2021/April/download-entire-database).
IMF (2021b) 'IMF staff concludes visit on Yemen'. Press release, 3 June (https://www.imf.org/en/News/Articles/2021/06/02/pr21156-yemen-imf-staff-concludes-visit-on-yemen).
IMF (2014) 'Article IV Consultation and Request for a Three-Year Arrangement Under the Extended Credit Facility – Staff Report; Press Release and Statement by the Executive Director for the Republic of Yemen'. IMF Country Report No. 14/276 (https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Republic-of-Yemen-2014-Article-IV-Consultation-and-Request-for-a-Three-Year-Arrangement-41901).
IMF (2000) 'Debt- and reserve-related indicators of external vulnerability'. Policy Development and Review Department (https://www.imf.org/external/np/pdr/debtres/#III_C).
ILO – International Labour Organization (2015) *Yemen Labour Force Survey 2013-2014*. ILO Report (https://www.ilo.org/beirut/publications/WCMS_419016/lang--en/index.htm).

ILO (2021) 'SDG labour market indicators'. ILO database (https://ilostat.ilo.org/data/).
IPC – Integrated Food Security Phase Classification (2019) 'Technical Manual Version 3.0. Evidence and Standards for Better Food Security and Nutrition Decisions'. The IPC Global Partners (http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/manual/IPC_Technical_Manual_3_Final.pdf).
IPC – Technical Working Group (Yemen IPC-TWG) (2020) 'IPC Acute food insecurity analysis October 2020 – June 2021' (http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/201224_Yemen%20IPC%20AFI%20Brief_En_Final[3].pdf).
IRC – International Rescue Committee (2021) 'Over 100% price increase in staple food contributes to dire humanitarian need as Yemen enters 7th year of war, says IRC' IRC Press release, 26 March (https://www.rescue.org/press-release/over-100-price-increase-staple-food-contributes-dire-humanitarian-need-yemen-enters).
Khan, M. and Casswell, J. (2019) 'Telesom ZAAD: Pushing the mobile money CVA frontier'. GSMA (https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/06/Somaliland_Mobile_Money_CVA_Case_Study_Web_Singles.pdf).
KSA-MOF – Kingdom of Saudi Arabia, Ministry of Finance (2018) 'Saudi Arabia deposits $2 billion in Yemen central bank'. Press release. (https://www.mof.gov.sa/en/MediaCenter/news/Pages/news_16032018.aspx).
Kern, A., Reinsberg, B. and Rau-Goehring, M. (2020) *The role of IMF conditionality for central bank independence*. Working paper series number 2464. European Central Bank (www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2464~154c556fff.en.pdf).
Lederer, E. (2021) 'UN experts pull back on corruption claims against Yemen' The Associated Press, 29 March (https://apnews.com/article/middle-east-yemen-united-nations-united-arab-emirates-fce26f460b73def2afcc86806ab589a6).
Lowcock, M. (2021) 'Briefing to the Security Council on the humanitarian situation in Yemen', delivered by Mark Lowcock, Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator. New York, 12 May (https://reliefweb.int/sites/reliefweb.int/files/resources/20210512_USG%20Statement%20to%20Security%20Council%20on%20Yemen.pdf).
MPIC – Yemen Ministry of Planning and International Cooperation (2017) 'Whither Yemen's Economy?' Yemen Socio-Economic Update (https://fscluster.org/sites/default/files/documents/yseu30_english_final.pdf)
MPIC (2018) 'Banking system in Yemen…Lives on hope' Yemen Socio-Economic Update (https://fscluster.org/sites/default/files/documents/yseu33_english_final.pdf).
MPIC (2020) 'Economic Recovery, Reconstruction and Sustainable Peacebuilding in Yemen' Yemen Socio-Economic Update. Issue 51. (https://reliefweb.int/sites/reliefweb.int/files/resources/YSEU51_English.pdf).
MPIC (2021) 'Economic and humanitarian developments and major issues for 2020'. Yemen Socio-Economic Update (https://fscluster.org/sites/default/files/documents/yseu-56-english_version.pdf).
Mukhashaf, R. and Al-ansi, A. (2021) 'Prices soar as Yemen's rival central banks tussle away from the battlefield' Reuters Middle East, 14 July (https://www.reuters.com/world/middle-east/prices-soar-yemens-rival-central-banks-tussle-away-battlefield-2021-07-14/).
Naghavi, N. and Scharwatt, C. (2018) 'Mobile money Competing with informal channels to accelerate the digitisation of remittances' GSMA (https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/05/Mobile_Money_Competing_with_informal_channels_to_accelerate_the_digitisation_of_remittances.pdf).
Nasser, A. (2018) 'Private sector engagement in postconflict Yemen'. Sana'a Center for Strategic Studies. DeepRoot Consulting and CARPO (https://carpo-bonn.org/wp-content/uploads/2020/01/Rethinking_Yemens_Economy_white_paper_3.pdf).
News Yemen (2021) 'The Central Bank in Aden begins establishing a new company to standardize' (https://www.newsyemen.life/new/62466).
OSESGY – Office of the Special Envoy of the Secretary-General for Yemen (2020a) 'Briefing of the Special Envoy of the United Nations Secretary-General for Yemen to the open session of the UN Security Council' 16 January 2020. (https://osesgy.unmissions.org/sites/default/files/secco_briefing_16_jan_2020_-_as_delivered-eng_1.pdf).
OSESGY (2020b) 'Concerns and hopes of Yemenis at hear of UN plans for better future' Special Envoy Statements. 16 July (https://osesgy.unmissions.org/concerns-and-hopes-yemenis-heart-un-plans-better-future).
Rageh, M., Nasser, A. and Al-Muslimi, F. (2016) 'Yemen without a functioning central bank: the loss of basic economic stabilization and accelerating famine'. Open Democracy,

26 November (https://www.opendemocracy.net/en/north-africa-west-asia/yemen-without-functioning-central-bank-los/).
REACH (2019) 'Financial Service Providers Assessment' (https://reliefweb.int/sites/reliefweb.int/files/resources/reach_yem_report_financial_service_provider_fsp_assessment_1.pdf).
Reuters (2021) 'U.N. monitors backtrack on Yemen money-laundering accusations – document' Reuters Middle East and Africa News, 29 March (https://www.reuters.com/article/yemen-security-un-int-idUSKBN2BL2O7).
Reuters (2018) 'Update 1-Saudi Arabia makes $200 mln grant to Yemen central bank -state media' Reuters Financials News, 1 October (https://www.reuters.com/article/yemen-security-saudi-idUSL8N1WH70S).
SCSS – Sana'a Center for Strategic Studies (2020a) 'Yemen economic bulletin: Battle to regulate banks threatens to rupture the financial sector' (https://sanaacenter.org/files/Battle_to_Regulate_Banks_Threatens_to_Rupture_the_Financial_Sector_en.pdf).
SCCS (2020b) 'Yemen Economic Bulletin: November Updates'. Sana'a Center for Strategic Studies (https://sanaacenter.org/publications/analysis/12056).
SCCS (2020c) 'Hostage on the Red Sea'. The Yemen Review, July–August. Sana'a Center for Strategic Studies (https://sanaacenter.org/files/TYR_July_August_2020_en.pdf).
SCCS (2020d) 'Yemen economic bulletin: Another stage-managed fuel crisis'. Sana'a Center For Strategic Studies (https://sanaacenter.org/publications/analysis/10323)
SCCS (2021) 'Yemen economic bulletin: The CBY-Aden's crisis of confidence – assessing the UN panel of experts' corruption allegations'. Sana'a Center For Strategic Studies https://sanaacenter.org/files/The_CBY_Adens_Crisis_of_Confidence_en.pdf
SMEPS (2020) 'Yemen business climate survey report 2020. Impact of conflict and COVID-19 on private sector activity' Small and Microenterprise Promotion Service (https://smeps.org.ye/upfiles/posts/SMEPS_File_17-12-2020-8842.pdf).
Sofan, S. (2019) *Yemen bringing back business project: Risky business – impact of conflict on private enterprises*. World Bank Report. Washington DC: World Bank (https://openknowledge.worldbank.org/handle/10986/32048).
Stremlau, N. and Osman, R. (2015) 'Courts, clans and companies: Mobile money and dispute resolution in Somaliland' *Stability: International Journal of Security and Development* 4(1) (http://doi.org/10.5334/sta.gh).
The Economist (2020) 'A possible oil leak in the Red Sea adds to Yemen's crises' The Economist, 3 October (https://www.economist.com/middle-east-and-africa/2020/10/03/a-possible-oil-leak-in-the-red-sea-adds-to-yemens-crises).
UNDP – United Nations Development Programme (2021) 'Yemen Emergency Crisis Response Project (YECRP) – World Bank', UNDP Yemen (https://www.ye.undp.org/content/yemen/en/home/projects/yemen-emergency-crisis--response----wb.html).
UNHCR – United Nations High Commission for Refugees (United Nations High Commissioner for Refugees) (2018) 'UNHCR cash provides lifeline for Yemeni war displaced' (https://www.unhcr.org/news/latest/2018/10/5bd1d9d14/unhcr-cash-provides-lifeline-yemeni-war-displaced.html).
UNHCR (2021) 'Displaced Yemenis struggle to access aid as fighting intensifies in Marib' Briefing note (https://www.unhcr.org/news/briefing/2021/11/619cb1e84/displaced-yemenis-struggle-access-aid-fighting-intensifies-marib.html).
UNSC – United Nations Security Council (2021) *Final report of the Panel of Experts on Yemen*. UNSC (https://undocs.org/S/2021/79).
World Bank (2015) 'World Bank takes innovative action to support remittance flows to Somalia'. Press release, 28 October (https://www.worldbank.org/en/news/press-release/2015/10/28/world-bank-takes-innovative-action-to-support-remittance-flows-to-somalia).
World Bank (2017a) Yemen's Economic Outlook – April 2017 (http://pubdocs.worldbank.org/en/777611492266548883/Yemen-MEM2017-ENG.pdf).
World Bank (2017b) 'CPIA Criteria 2017'. World Bank (https://pubdocs.worldbank.org/en/597681562869817624/CPIA-Criteria-2017-new-version.pdf).
World Bank (2017c) 'Securing imports of essential food to Yemen. An assessment of and options for intervention' Washington, DC: World Bank Group (http://documents.worldbank.org/curated/en/376891524812213584/Securing-imports-of-essential-food-commodities-to-Yemen-an-assessment-of-constraints-and-options-for-intervention).
World Bank (2018a) 'Yemen's Economic Outlook – April 2018' (http://documents.worldbank.org/curated/en/722171523637393846/pdf/125265-replacement.pdf).

World Bank (2018b) 'Yemen's Economic Outlook – October 2018' (http://pubdocs.worldbank.org/en/547461538076992798/mpo-am18-yemen-yem-9-14-kc-new.pdf).
World Bank (2018c) 'Securing imports of essential food commodities to Yemen' Washington, DC: World Bank Group. (http://documents.worldbank.org/curated/en/376891524812213584/Securing-imports-of-essential-food-commodities-to-Yemen-an-assessment-of-constraints-and-options-for-intervention).
World Bank (2019a) 'Yemen Economic Update April 2019' (http://pubdocs.worldbank.org/en/365711553672401737/Yemen-MEU-April-2019-Eng.pdf).
World Bank (2019b) 'Yemen's Economic Update October 2019' (http://pubdocs.worldbank.org/en/859721570664061868/EN-MPO-OCT19-Yemen.pdf).
World Bank (2019c) 'Yemen Economic Update December 2019' (http://pubdocs.worldbank.org/en/360391580209593452/Yemen-Update-Dec-2019.pdf).
World Bank (2019d) 'Yemen Economic Monitoring Brief. Winter 2019' (https://documents1.worldbank.org/curated/en/161721552490437049/pdf/135266-YemEconDevBrief-Winter-2019-English-12-Mar-19.pdf)
World Bank (2020a) 'FY21 List of Fragile and Conflict-affected Situations' (http://pubdocs.worldbank.org/en/888211594267968803/FCSList-FY21.pdf).
World Bank (2020b) 'Doing business data' (https://www.doingbusiness.org/en/data).
World Bank (2020c) 'Yemen monthly economic update: April 2020' (https://pubdocs.worldbank.org/en/609141590055031061/Yemen-Monthly-Economic-Update-April-2020-eng.pdf).
World Bank (2020d) 'Yemen monthly economic update: June 2020' (https://pubdocs.worldbank.org/en/933471597048500989/Yemen-Monthly-Economic-Update-June-2020-eng.pdf).
World Bank (2020e) 'Yemen monthly economic update: February 2020' (https://www.worldbank.org/en/country/yemen/publication/yemen-monthly-economic-update-february-2020).
World Bank (2020f) 'World Bank Group Strategy for Fragility, Conflict, and Violence 2020–2025' (https://documents1.worldbank.org/curated/en/844591582815510521/pdf/World-Bank-Group-Strategy-for-Fragility-Conflict-and-Violence-2020-2025.pdf).
World Bank (2021b) 'Yemen monthly economic update: April 2021' (https://thedocs.worldbank.org/en/doc/e75a6c6f3262f756492f3135709b2b01-0280012021/original/18-mpo-sm21-yemen-yem-kcm2.pdf).
World Bank (2021c) 'Working for the people of Yemen'. Yemen Country Engagement Note (https://thedocs.worldbank.org/en/doc/523baa9ca5bc42070811f076d7a60aac-0280012021/related/mena-yemen-overview-april21-eng.pdf).
WDI – World Development Indicators (2021) World Bank open access development database (https://data.worldbank.org/).
WFP – World Food Programme (2010) 'Yemen' Market Study (https://documents.wfp.org/stellent/groups/public/documents/ena/wfp230278.pdf).
YBA – Yemen Bankers' Association (2019a) 'A joint statement issued by Yemen Banks Association and Yemen Money Exchange Association regarding the contradictory measures imposed on them by the central bank in Sana'a and Aden' (https://yemen-yba.com/3911/).
YBA (2019b) 'The leadership of the Yemeni Banks Association participates in the expanded meeting to discuss the challenges facing the private and banking sector' (https://yemen-yba.com/5189/).
YBA (2020a) 'Press release by the spokesperson for the Yemeni Banks and Money Exchange Association', 16 October (https://yemen-yba.com/9463/).
YBA (2020b) 'The Yemen Banks Association decides the partial strike and threatens escalatory steps', 3 November (https://yemen-yba.com/9507/).
YBA (2020c) 'The Yemeni banking and money changers associations postpone the strike until further notice', 7 November (https://yemen-yba.com/9512/).
YEC – Yemen Economic Committee (2019) 'Humanitarian Economics in Yemen' (https://ecyemen.com/uploads/2019/07/The-impacts-of-economy-on-yemen-lastv-converted.pdf).
YEC and CBY-Aden (2019) 'Project proposal: providing banking services to international organizations operating in Yemen under the supervision of the Central Bank in Aden' (https://ecyemen.com/uploads/2019/08/Providing-Banking-Services-to-International-Organizations.pdf).

YETI – Yemen Economic Tracker Initiative (2021) 'Daily exchange rate tracker' YETI dashboard maintained by ACAPS (https://yemen.yeti.acaps.org/).
YMN – Yemen Microfinance Network (2015) 'Microfinance in Yemen: Hope vs reality' (https://www.findevgateway.org/sites/default/files/publications/files/microfinance_in_yemen_-_impact_of_war_ymn_july_2015.pdf).
YPA – Yemen Press Agency (2020) 'An important statement from the Supreme Economic Council regarding the payment of salaries of state employees' . Press release, 16 April (http://www.ypagency.net/252865).
YPA (2021) 'All money exchange shops closed in Aden' (http://en.ypagency.net/179158/).

Annex A. Financial sector performance

This annex presents the performance of Yemen's financial sector by examining indicators of financial depth, inclusion, efficiency, and stability and comparing these with those in other countries across the Arab world – including those that are also in fragile and conflict-affected situations (FCAS).[31] The descriptive statistics are complemented by analysis based on published surveys.

Financial Depth
Indicators of financial depth for Yemen suggest that even before the escalation of the conflict in 2014/2015, the contribution of financial sector to Yemen's economy has been more limited than in other Arab countries. For instance, banks' credit to the private sector was equivalent to only 5.1% of Gross Domestic Product (GDP) from 2011 to 2013, compared to 25.6% in other FCAS Arab countries and 45.9% in non-FCAS Arab countries (Table A.1). The lack of credit may also be attributed to the relatively lower liquidity and assets of banks in Yemen compared to other FCAS Arab countries, with banks' assets and deposits (as a percentage of GDP) equivalent to only around a third of what is available in other FCAS countries (Table A.1). This somewhat echoes the findings of a 2018 survey indicating firms' large preference for cash transactions (rather than via financial intermediation) (Sofan, 2019). In 2018, 97% of firms paid employees in cash (and only 2.1% use the banking system), along with a majority of suppliers (65%) (ibid.).

Even in terms of the most liquid form of assets such as currency in circulation, Yemen is lagging behind: broad money[32] is equivalent to only 33.6% from 2011 to 2013, much lower than the 77% in other FCAS Arab countries or 69% in non-FCAS Arab group. Given the shallow financial market, the latest World Bank (2020b) 'ease of doing business' data ranked Yemen at 186/190 countries in terms of ease of getting credit, given the virtually absent credit reporting systems and lack of effectiveness of collateral and bankruptcy laws in facilitating lending in the current unstable political environment.

[31] Arab countries are based on the World Bank grouping, within which sub-groupings of FCAS and non-FCAS countries are based on the World Bank's list of countries in FCAS (World Bank, 2020). FCAS Arab countries (except Yemen) include Comoros, Iraq, Lebanon, Libya, Somalia, Sudan, Syrian Arab Republic, and West Bank and Gaza. Non-FCAS Arab countries include Algeria, Bahrain, Djibouti, Arab Republic of Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and United Arab Emirates (UAE).
[32] WDI (2021) defines broad money as the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and travellers' cheques; and other securities such as certificates of deposit and commercial papers.

Table A.1 Financial depth

Indicator	Years covered	Yemen	Other FCAS Arab countries 1/	Non-FCAS Arab countries 2/
Domestic credit to private sector by banks (% of GDP)	2011–2013	5.1	25.6	45.9
	2011–2019		30.1	52.5
Deposit money banks' assets to GDP (%)	2011–2013	15.4	42.9	63.1
	2011–2019		50.2	71.4
Bank deposits to GDP (%)	2011–2013	20.7	68.8	55.2
	2011–2019		81.8	60.8
Broad money (% of GDP)	2011–2013	33.6	77.0	69.1
	2011–2019		90.5	75.4

Notes: [1.] Other FCAS Arab countries include: Comoros, Iraq, Lebanon, Libya, Sudan and West Bank and Gaza; [2.] Other non-FCAS Arab countries include: Algeria, Bahrain, Djibouti, Arab Republic of Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and United Arab Emirates (UAE).

Source: Authors' computations (simple average) based on data from World Bank development indicators and global financial development databases

Financial Inclusion

In 2014, only 2.5 million people (about 9.5% of the population) had at least one bank account (current and savings accounts), including accounts opened with microfinance banks and electronic money accounts (AlSamawi et al, 2020). Following the intensified conflict, and the subsequent the move of the Central Bank function from Sana'a to Aden and its politicisation, people with at least one bank account fell by 40% to 1.5 million (about 5.5% of the population) in 2016, before gradually increasing to 2.9 million people with accounts (about 10% of population) in 2019 (ibid.). This is still significant compared to share of population with at least one bank account in the Middle East region (43.5%) and LICs (35%) as of 2018. 33 In addition, there were only 433 bank branches in 2019, roughly 1.4 bank branches per 100,000 Yemenis, much lower than the global average ratios (12.7) and among Arab countries (11.9).2 While there is limited information on lending rates, latest data from World Bank development indicators suggest that these were as high as 24% from 2011 to 2013, compared to around 9% in other Arab countries.

Financial access for business has probably become more difficult since 2015. Based on a World Bank survey of 141 firms in 2018, while half of the large businesses reported having access to a functioning bank branch, only 18.5% of medium firms and 6.1% of small firms did (Sofan, 2019). Among all the surveyed firms, only 19.9% rely on bank loans, and 50% claim that the cost of financing has increased since 2015 (ibid.). For money transfer services in particular, 47.5% of the surveyed firms relied on money exchange companies and only 13.5% used the banking sector. A more recent SMEPS (2020) enterprises survey suggests that about 30% firms face financial constraints, including the inability to obtain loans and liquidity from banks, and lack of access to funding. In particular, the SMEPS (2020) survey suggests that only 8.4% of private businesses were able to secure credit between 2017 and 2019.

[33] 2018 Financial Inclusion Report, cited by AlSamawi et al. (2020).

Financial Efficiency
While there is relatively limited financial access and credit extended to the Yemeni population, the financial institutions' efficiency was on a par with other FCAS at least until 2016, as indicated by around the same level of bank overhead costs relative to total assets (2.0–2.4%) and interest rate spread (5.6–5.7%) (Table A.2). Bank profitability seems to be higher in Yemen in terms of interest rate margins and bank returns on equity, especially since 2017. For instance, banks' net interest margin more than doubled from 5.2% in the 2011–2016 period, to 11.1% in 2017, while bank returns on equity increased by 10 percentage points from its 2011–2016 average of 19% to 30.6% in 2017 alone.

The 2017 data indicate that this overhead cost ratio jumped to 7.9% and the interest rate margin reached 11.1%. These two indicators suggest higher operational costs, which are probably passed on to customers through higher risk premium and fees charged on loans and other financial services in more difficult political circumstances including the fragmented central bank, FTO sanctions, the COVID-19 pandemic and the widening divergence of values of domestic currencies in Aden (new banknotes) and Sana'a (old banknotes). For instance, the World Bank (2021b) reports that fees associated with financial transfers through commercial banks and exchange bureaux from new to old banknotes reached more than 40% by the end of January 2021, eroding the value of remittances.

Financial Stability
While the relatively higher returns on equity may have lowered the likelihood of banking system default in Yemen as indicated by the lower Bank Z-score compared to the average in Arab countries, other indicators highlight the vulnerability of the financial system (Table A.3). The ratio of liquid assets relative to deposits and short-term funding is below 30%, only half of provisions in other FCAS Arab countries. In addition, 23.3% of gross loans are non-performing loans (NPL), way higher than the average NPL ratio in Iraq (4%) or in non-FCAS Arab countries (9%).

Table A.2 Efficiency of formal financial institutions

Indicator	Years covered	Yemen	Other FCAS Arab countries 1/	Non-FCAS Arab countries 2/
Bank overhead costs to total assets (%)	2011–2016	2.0	2.4 [3/]	1.9
	2017	7.9	2.5 [3/]	1.8
Interest rate spread (lending rate minus deposit rate, %)	2011–2013	5.6	5.7 [4/]	5.3
	2011–2019		5.4 [4/]	5.1
Bank net interest margin (%)	2011–2016	5.2	3.1 [3/]	3.1
	2017	11.1	5.2 [3/]	3.0
Bank return on assets (%, after tax)	2011–2016	1.7	1.7 [3/]	1.3
	2017	2.3	1.3 [3/]	1.3
Bank return on equity (%, after tax)	2011–2016	19.0	11.2 [3/]	11.8
	2017	30.6	13.3 [3/]	11.4

Notes: 1/ Other FCAS Arab countries include: Comoros, Iraq, Lebanon, Libya, Somalia, Sudan, Syrian Arab Republic, and West Bank and Gaza; 2. Other non-FCAS Arab countries include: Algeria, Bahrain, Djibouti, Arab Republic of Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and United Arab Emirates (UAE); all non-FCAS Arab countries except (3/) Comoros and Somalia; (4/) Somalia, Sudan and Syrian Republic.

Sources: Authors' computations (simple average) based on data from World Bank development indicators and global financial development databases.

Table A.3 Financial stability

Indicator	Years covered	Yemen	Other FCAS Arab countries 1/	Non-FCAS Arab countries 2/
Bank Z-score	2011–2017	14.2	24.1	25.3
	2017	13.1	20.0	26.4
Liquid assets to deposits and short-term funding (%)	2011–2017	28.9	60.1	31.3
	2017	25.8	59.2	32.0
Bank non-performing loans (NPL) to gross loans (%)	2011–2014	23.3	3.9 [3/]	9.0 [4/]
	2011–2017		4.1 [3/]	9.1 [4/]

Notes: 1. Other FCAS Arab countries include: Comoros, Iraq, Lebanon, Libya, Somalia, Sudan, Syrian Arab Republic, and West Bank and Gaza; 2. Other non-FCAS Arab countries include: Algeria, Bahrain, Djibouti, Arab Rep. of Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and United Arab Emirates (UAE). (3/) Data available only for Iraq. (4/) All other non-FCAS Arab countries included except Qatar.

Source: Authors' computations (simple average) based on data from World Bank development indicators and global financial development databases

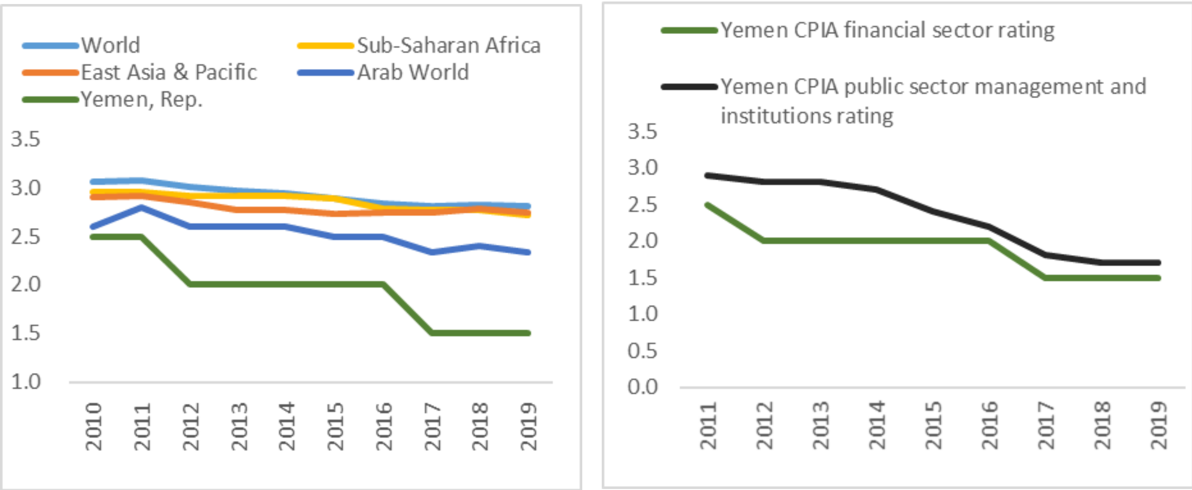
A more recent World Bank country policy and institutional assessment (CPIA) suggests the deteriorating financial-sector policies and regulation that affect the development of the financial sector in Yemen. Yemen's CPIA financial sector rating[34] has been historically way below the world and regional averages (Figure A.1, left panel). In 2019, Yemen's CPIA financial-sector rating is second to the lowest score (at 1.5) among 73 countries with 2019 CPIA financial-sector rating. Unsurprisingly, the rating further deteriorated as a consequence of the political instability after 2011. While the financial-sector structure and policies remain fragile in the context of continuing conflict, it managed to be weakly operational until 2016, when the rating fell once again following the division of the CBY into two branches in Aden and Sana'a in 2016.

The right panel in Figure A.1 shows that alongside a deteriorating financial sector, the rating of Yemen's public-sector management and institutions[35] also declined, suggesting that poor governance and a weakened financial sector in the context of political tensions might be reinforcing the deterioration of the functioning of government and financial institutions, and amplifying the negative socio-economic impact of political conflict.

[34] The CPIA financial-sector rating assesses the policies and regulations that affect the development of the financial sector, covering three dimensions are covered: (a) financial stability; (b) the sector's efficiency, depth, and resource mobilisation; and (c) access to financial services. The first dimension assesses the financial sector's vulnerability to shocks, its soundness, and funding methods, the degree of adherence to international principles and the quality of risk management and supervision. The second dimension assesses financial sector depth, resource mobilisation, efficiency, and diversity, including analysis of competition, prices (e.g., interest rates), and costs. The third dimension covers the access of households and small and medium-size firms to financial services and other factors such as the quality of payment systems, collateral registry, and the legal and regulatory framework and enforcement to improve financial access (World Bank, 2017b).

[35] The CPIA public-sector management and institutions clustered rating includes assessment of: 1) property rights and rule-based governance; 2) quality of budgetary and financial management; 3) efficiency of revenue mobilisation; 4) quality of public administration; and 5) transparency, accountability and corruption in the public sector (World Bank, 2017b).

Figure A.1 Country Policy and Institutional Assessment (CPIA) rating of the financial sector



Notes: World Bank CPIA score of 2019, with 1=low and 6=high.
Source: WDI (2021)

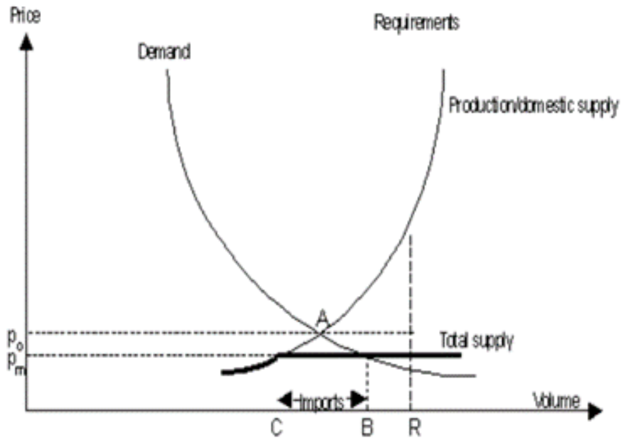
Annex B. Basic theoretical guidance and analytical framework for food security analysis in Yemen's context

In order to analyse the impact of the fragmentation and deterioration of Yemen's financial sector on food security, we are guided by a basic graphic model of a small open economy that determines the relationships between food supply, demand and prices. Figure B.1 shows the negative relationship between prices and the volume of food demand (e.g., the higher the price, the lower the consumer demand for food) and the positive relationship between price and volume of food supply (e.g., the higher the price, the higher the production of food supply). Imported goods enable consumers to increase their demand for food (C to B in Figure B.1) at lower prices (p_m in Figure B.1), at the expense of reduced domestic food supplies.

An illustrative example in Figure B.2 indicates that a currency depreciation such as in Yemen results in more expensive imported food (p'). Based on Figure B.2, a currency depreciation that increases imported food prices should also incentivise domestic food supply, but as there is little evidence of this in Yemen, indicating other constraining factors (such weak institutions, infrastructure, and low level of credit to farmers) for local production.

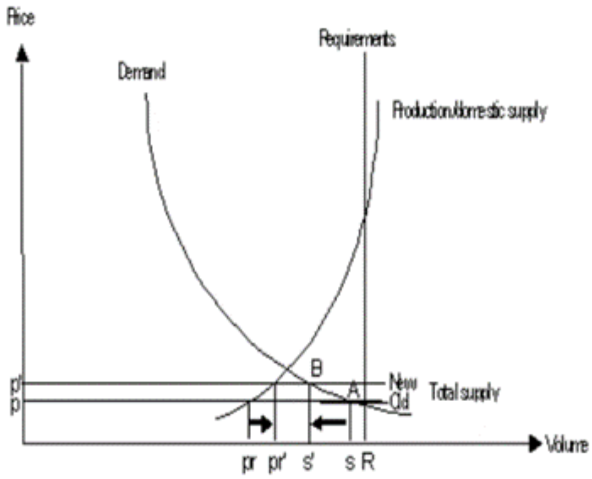
In this regard, we also utilised a macro-meso-micro analytical framework for this paper to determine the influence of the deterioration in financial sector to food consumers, suppliers and producers, and consequently, food prices and stability in Yemen (Figure B.3). While we recognise that long-term macroeconomic structural reforms (e.g., trade policy, agricultural production, market reforms) may increase food stability in Yemen, we focus on investigating the short-term macroeconomic (de)stabilisation policies that are relevant in Yemen's immediate context. These policies include the uncoordinated exchange rate management, monetary policy and bank regulation, and relevant fiscal measures (e.g., uneven public sector salaries, non-payment of public debt) between the IRG and the DFA-AA. The combined theoretical guidance and analytical approach helped us in understanding and identifying the channels through which the conflict-driven fragmentation and weakening of Yemen's financial sector exacerbates food security in the country, as discussed in detail in Section 3.

Figure B.1 Basic model of an aggregate food situation in an open economy



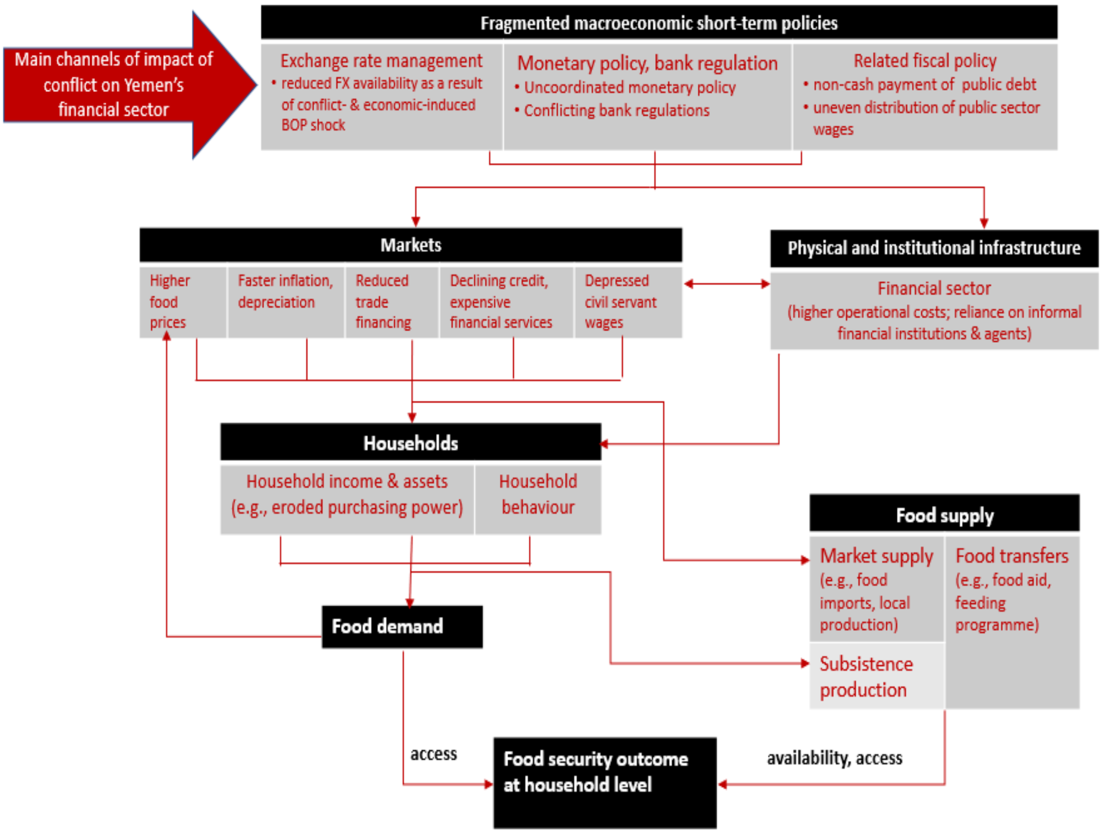
Source: FAO (1998)

Figure B.2 Illustrative impact of a depreciation on aggregate food situation



Source: Graphs lifted from FAO (1998)

Figure B.3 Macro-meso-micro analytical framework for understanding food security in Yemen



Source: Framework adapted from FAO (1998), tailored by the authors for Yemen's context.

Annex C. Lessons from the World Bank's role in Somalia Financial Governance Committee[36]

The FGC was formed in 2014 on the basis of mutual agreement between the Federal Government of Somalia (FGS), donors and international financial institutions (IFIs) to provide a high-level forum for dialogue and independent advice on strategic financial governance issues including: public financial management (PFM); central bank governance; fiscal federalism; oil and gas; procurement, contracts, and concessions; asset recovery and disposal, and other topics arising. Since then, the FGC has achieved tangible results, including competitively tendering rations contracts in the security sector, halving the tender process costs, facilitating security-sector personnel salaries by individual bank accounts, despite high risks, and building international credibility following the confidential advice of a contracts and concessions advisor, among others.

The FGC members meet monthly and the body is chaired by the Ministry of Finance and attended by the governor of the Central Bank of Somalia, Solicitor General, Chair of Parliamentary Finance Committee, representatives from the Office of the President, Office of the Prime Minister, World Bank, African Development Bank, bilateral donors, and an observer/adviser from the International Monetary Fund (IMF). The FGC also has a secretariat that provides support in the areas of i) technical and policy support; ii) monitoring and reporting; iii) FGC operations; iv) information-sharing and communication; and v) identification and support for technical assistance.

The FGC costs roughly $1.5 million a year to run, of which the World Bank contributes $1 million annually from the Multi-Partner Fund (MPF), with contributions from the Danish International Development Agency (DANIDA), the Commission of the European Communities, the Finnish Ministry for Foreign Affairs, the Italian Agency for Development Cooperation, the Royal Norwegian Embassy, the Swedish International Development Cooperation, the Swiss Agency for Development Co-operation, UK Department for International Development (now the Foreign,

[36] Adapted from World Bank (2019a) and Federal Government of Somalia's website (https://mof.gov.so/fgc)

Commonwealth and Development Office (FCDO)), and the World Bank State and Peace-building Fund.

The World Bank identified the success factors of the FGC, some of which could be replicated elsewhere:

- *A shared sense within government and the international community that 'business as usual' will not suffice to address high-level economic governance challenges*. The FGS has showed continued support to discussing sensitive issues and taking action, even though it required important political capital.
- *A willingness to convene a multi-institutional group on a regular basis*. The inter-agency FGC model promotes coordination, reducing information asymmetries, and building consensus among economic decision-makers across government.
- *Strong and sustained international support* is necessary, including resisting the temptation to try to 'steer' discussions remotely and providing adequate funding. The FGC has taken years of sustained effort to advance some reforms, spanning three different Ministers of Finance.
- *Deployment of delegates and advisers with excellent technical and interpersonal skills over a sustained period*. The role of the FGC delegates is very demanding, having to build and maintain trust yet deliver tough messages, maintain regular dialogue often in a highly insecure setting, and provide impartial expert advice on diverse issues at short notice, while remaining at arm's length from their sponsoring partners. Hence, FGS members are able to trust in the quality and confidentiality of FGC discussions.

Annex D. The rise of mobile money in Somaliland[37]

Somaliland broke away from Somalia in 1991 and is not currently recognised internationally as an independent nation. Consequently, at present there are no international commercial bank offices. Somaliland is also excluded from international aid and cannot access World Bank or IMF financing. However, remittance companies in the area have existed since the 1970s and well-established Money Transfer Operators (MTOs) continue to function. Over the last decade, however, the presence of mobile money has challenged the dominance of the MTOs.

Somaliland has two main mobile money platforms: ZAAD (launched in 2009) and e-Dahab (launched in 2015). The platforms have been used to a limited degree by international NGOs to distribute cash-based assistance in the country because of the longstanding lack of a regulatory environment. In 2019, 78% of the population in Somaliland used mobile money services, most of whom were ZAAD customers (96.5%), while 18% had a Somtel e-Dahab account, and 9.1% had a Golis Sahal account.

When Telesom launched ZAAD in June 2009, rather than building a large network of agents whereby customers could cash in and out of the system, it focused on employers paying salaries through their bulk payment system, and stores accepting mobile money. In parallel, ZAAD built its own agent network with salaried staff as well as making money transfers free of charge. Researchers have highlighted the key role played by trust-based networks grounded in the customary Xeer law which favoured adoption through social pressure and the network effect.

ZAAD has also grown because it uses US dollars, meeting the demand for hard currency in Somaliland and giving people a mechanism to cope with a domestic economy where the republic's own currency trades at around a dollar to 8,000 shillings (ShSl). In May 2015, following pressure from the government and Central Bank of Somaliland (CBOS), Telesom unveiled a new ZAAD service in ShSl, and the Somaliland government launched an e-shilling service as the new way to pay civil servants' salaries (Ayieko, 2020). Apart from ZAAD's strategy to increase the uptake of mobile money, transactions through the platform grew exponentially in April 2010 when a severe period of drought created a humanitarian crisis. The Ministry of the

[37] Adapted from Bolton (2020), Stremlau and Osman (2015), Iazzolino (2015), Khan and Casswell (2019).

President created a National Drought Committee and people donated money through ZAAD to support their relatives in different areas of the country.

There remain challenges, however, in relation to the use of mobile money platforms by humanitarian agencies. The regulatory environment in Somaliland is complex given the multiple regulatory bodies and enforcement standards. Although Somaliland established the CBOS in 1994 to manage the Somaliland shilling and provide oversight to financial institutions, when ZAAD was launched there was no existing e-money licence yet, so it obtained a remittance licence from CBOS instead. ZAAD reported that the CBOS Central Bank Act of 2012 officially gave CBOS oversight capacity for mobile money services and has issued a Mobile Financial Service License, which provides operational guidelines for mobile money providers and is audited yearly. This which helps meet concerns expressed by humanitarian agencies on how customer data is protected. ZAAD also noted that Telesom has adopted customer due diligence procedures that are compliant with international guidelines issued by the Financial Action Task Force.