

# المستقبل

*(reads "Al Mustaqbal": The Future)*

**YEMEN**

COUNTRY ECONOMIC  
MEMORANDUM

**2022**



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# Yemen Country Economic Memorandum – 2022

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Glimmers of Hope in Dark Times



YEMEN FUND  
RESILIENCE, RECOVERY  
AND RECONSTRUCTION



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# Preface

Working in situations of fragility, conflict, and violence is a complex challenge, and Yemen is no exception. A growing body of literature on Yemen's wartime economy highlights the binding limitations imposed by a lack of uniformly collected and verifiable data, and recent analyses often present a grim view of the country's prospects. By contrast, this report uses innovative, technologically advanced data-gathering methodologies to overcome data constraints. The analysis focuses on opportunities for recovery and renewed growth. This approach has allowed Bank staff to overcome (albeit with important caveats) many of the limitations of earlier work. The availability of data has shaped the content of the CEM.

This report is designed to inform the efforts of policymakers and other stakeholders as they build the foundation for long-term growth and shared prosperity in Yemen. Some of the report's findings

are unsurprising. A far-reaching reform agenda will be critical to bolster the resilience of Yemen's macroeconomic framework and strengthen the country's institutional governance. Large-scale investments in fixed assets and human capital development will be vital to restore economic opportunity for a generation of young people who have grown up amid a devastating war. Other conclusions are perhaps less obvious. Advanced data analytics, for example, indicate that Yemen's de facto decentralization can help ground its future growth, corroborating a perspective repeatedly voiced in informant interviews. The World Bank stands ready to continue working in cooperation with the government and its other development partners to support the Yemeni people during a delicate transition towards stability, peace, and security; restore the economy to a sound footing; and advance the ambition of the Yemeni people to achieve renewed prosperity and a brighter future.



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# Executive Summary

## Change and Continuity

**Yemen's economy has been transformed by eight years of violent conflict.** War has shattered the country's already fragile economic equilibrium, touching upon virtually every aspect of life. The compounded shocks of the COVID-19 pandemic and rising global prices have only deepened the economic and humanitarian disaster precipitated by the war. Since the start of the conflict, economic analyses have tended to focus on the deterioration of macroeconomic indicators, the sharp rise in poverty and food insecurity, and the destruction of infrastructure and the capital stock, but relatively little attention has been paid to the current structure of the economy or what prospects can be envisaged for the country. Also, it is important to situate this analysis within the political economy dynamics of the country (including key political and economic players, institutions and centers of powers, both formal and informal) which majorly affect the economic development challenges of the country.

**Data constraints and the unique characteristics of Yemen's recent experience limit the effectiveness of traditional growth-analysis methodologies.** Consistent data are rare at the

national level, and the limited available data are often contested for political reasons. While these data constraints are not insurmountable, coping with them demands a more innovative and holistic approach to growth analysis. This Country Economic Memorandum (CEM) uses novel data-collection methods and analytical techniques, triangulating its findings with traditional approaches and direct data collection to close the economic knowledge gap. Information sources include extensive key-informant interviews, household phone surveys, and remotely sensed geospatial data based on satellite imagery, including nighttime illumination data. Econometric simulations of structural transformation produced by a general-equilibrium model calibrated for the Yemeni economy complete the diverse array of analytical approaches used in this report.

**This CEM also combines an in-depth political economy analysis with economic development investigation.** Given Yemen's history of recidivism to political instability and clashes, this CEM matches a rigorous and extensive political science analysis—regarded as one of the pivotal elements to support Yemen's path towards permanent peace, and ultimately economic development—with more traditional macro and microeconomic analysis.

## Yemen's Fragile Context

**Before the outbreak of war in late 2014, Yemen was already a poor country with weak governance that had recently sustained a series of economic and political shocks.** A centralized patrimonial state in Sanaa relied on the dwindling returns from the country's hydrocarbon sector to generate revenues in a broadly underperforming economy. Oil and gas exports also financed a rising import bill that accounted for about 40 percent of the consumer price index, while the state heavily subsidized electricity and used government jobs as a form of welfare. A culture of rent-seeking and patronage severely hindered meaningful economic reforms, and as oil output fell from the early 2000s onward, Yemen's elites shifted from a posture of cooperative rent-seeking to competition over a shrinking pool of resources. In 2011, an increasingly high-stakes, zero-sum struggle among elites contributed to a political crisis that resulted in the ouster of longtime President Ali Abdullah Saleh.

**The transition process was troubled from the start, and the incoming administration failed to implement vital macroeconomic and governance reforms.** By 2014, when the World Bank's last CEM was being prepared,<sup>1</sup> Yemen was at an inflection point. Worsening fiscal and external balances, faltering public service delivery, mounting insecurity in cities, and open conflict in Yemen's hinterlands had brought the country to the brink of the humanitarian disaster that would shortly materialize.

**In mid-2014, a coup initiated under the cover of popular grievances preceded a full-scale war.** Amid regular power outages and fuel shortages, a sudden cut to subsidies in July sparked widespread protests, which the Houthi movement, popularly known as the Houthis, used as a motivation for its takeover of Sanaa in September. Working with forces loyal to former President, Ali Abdullah Saleh, the Houthis pursued then-President Abed Rabbo Mansour Hadi to the southern port city of Aden, launching air strikes that precipitated a Saudi-led

military intervention. The Houthis would ultimately consolidate control over Sanaa and the main population centers in northwest Yemen. However, former President Saleh was killed by the Houthis following a schism in December 2017.

## Yemen at War

**The conflict has accelerated Yemen's political and economic fragmentation.** Since early 2015, Yemen has been divided into multiple zones of political and military control. The conflict extends beyond the often simplistic, binary view of a Houthis-led government in Sanaa, referred to throughout this report as the de facto authority (DFA), and Yemen's internationally recognized government (IRG) based in Aden. Disagreements among groups nominally united under either the Houthis or IRG banner are often as sharp as the conflict between the two overarching factions.

**The war has not just divided the country territorially; it has splintered the public sector and solidified subnational identities.** Over the course of the conflict, the institutions and processes of formal civil administration have fragmented and morphed into new hybrid governance arrangements, often fused with informal practices and traditional norms. The line between state- and nonstate institutions (both civil and military) has become increasingly blurred, particularly since the formation of the Political Leadership Council (PLC) in April 2022. The PLC is an eight-member council comprising the leaders of military forces that have fought against the Houthis but which, in many cases, did not fully recognize the authority of the administration of President Hadi, who stepped down in April 2022 to make way for the PLC.

**The costs of the war have not been evenly distributed across these different zones of control, reflecting asymmetries in institutional and**

<sup>1</sup> The CEM was published in 2015 due to delays caused by the outbreak of war.

**quasi-institutional capacity, as well as disparities in access to financial resources.** New state-like capacity has emerged in some parts of Yemen and across the economic system, fostering surprisingly robust governance and development in previously deprived and insecure areas. In certain areas, local and traditional institutions have filled the gaps left by weak national governance. In other areas, however, already poor living standards have plummeted amid social atomization and administrative neglect. Some private firms have managed to flourish despite the conflict, while many previously dominant players have withered.

**The civil war has had complex ramifications for women, some clearly and deeply negative, but others positive or at least potentially so.** Women were active participants in the popular uprising that removed Saleh from power, but men have dominated the wartime leadership and peace negotiations, and the recently formed PLC has no female members. Nevertheless, women were active participants in the popular uprising that removed Saleh from power and made up one-quarter of all participants in the 2014 National Dialogue Conference (NDC). The civil war has also created new opportunities for women by enabling them to assume social and economic responsibilities formerly dominated by men.

**Pre-war patronage networks have been uprooted and reordered.** The factors driving this process include the Houthi takeover of Sanaa and its seizure of assets from rival groups, the freezing of oil exports and their later resumption under an IRG-backed revenue-sharing scheme, and the formation of multiple local power centers with no meaningful ties to the Saleh administration. However, these changes have not fundamentally transformed a political culture that continues to be marked by clientelism and corruption.

**The conflict has not altered the core structure of the public finances.** Despite disruptions in production and exports, oil remains vital to Yemen's economy. Fiscal dependence on oil exports remains

high, while revenue efficiency has worsened. After plunging in 2015–17, public spending as a percentage of GDP has rebounded, though it remains volatile and far below pre-war levels. Utility subsidies continue to weigh heavily on IRG finances, generating arrears and widening budget gaps. Yemen has become more import-dependent than ever, increasing its vulnerability to external shocks, while government debt has more than doubled since 2015.

## An Economic Conflict

**Both major factions are attempting to assert control over the national economy.** Yemen has been broadly divided into two competing economic zones, each with its own currency and governance arrangements—however limited, arbitrary, or ad hoc—which generated a regulatory vacuum in the financial sector and precipitated a massive depreciation in the value of the Yemeni rial (YRI) in areas under IRG control. In the rest of the country, under Houthi control, economic information is extremely limited; these regions also experienced high levels of inflation, although far less than the IRG ones, likely due to the absence of monetary financing of the fiscal deficit.

**International and domestic constraints on the movement of people and goods have negatively affected growth.** Repeated standoffs over fuel shipments into Houthi-controlled areas have disrupted supplies, created space for price gouging, and driven up the cost of fuel. Over the past seven years, establishing control over revenue-generating ports, informal trade routes, and oil infrastructure has become a key economic, military and political objective. Road closures have increased the complexity of supply chains, compounding other domestic and external inflationary pressures and contributing to a massive cost-of-living crisis with deeply negative implications for poor and vulnerable households.

**A complex and hostile operating environment has discouraged trade and investment,**

**sharply limiting opportunities for young workers.** The deteriorating business climate has greatly reduced economic activity outside of commodity trading and construction. Most forms of employment offer low wages, poor working conditions, and little or no job security. A lack of economic opportunity continues to push young people to join armed groups, which frequently offer higher and more stable prospects than the private sector.

**International aid also plays an increasingly important role in Yemen's political economy.** Since 2015, Yemen has been designated as one of the world's worst humanitarian crises, placing it alongside fragile and conflict-affected countries such as Afghanistan, the Democratic Republic of Congo, South Sudan, and Syria. The country has received billions of dollars<sup>2</sup> in aid since 2015. International organizations have faced allegations that aid is being diverted by local actors to reward their preferred constituencies and deprive less favored groups. Just as pertinently, on account of money's fundamental fungibility, key actors in positions of power have allegedly been able to redirect available funds from service delivery to political patronage. The recent decline in aid inflows reflects a rapidly shifting geopolitical context, growing competition among global humanitarian and development priorities, and increasing hesitancy among donors to engage with an opaque and unreliable public administration.

### Costing the Conflict: Shattered Growth, Productivity, and Wellbeing

**The conflict has catalyzed negative trends and reversed positive ones, shrinking economic output and making future growth harder to achieve even if peace is secured.** World Bank estimates<sup>3</sup> suggest that real GDP contracted by approximately 50 percent between 2011 and 2021. Remotely sensed data broadly corroborate these estimates, while suggesting a greater level of improvements in GDP than the available statistics indicate.

Nevertheless, the economy has clearly contracted while the population has grown. Oil production and exports have declined, undermining the government's ability to support a significant share of the population through public employment. Looking at fixed capital, the conflict is estimated to have damaged or destroyed more than one-third of the country's homes, schools, hospitals, and water and sanitation facilities. Productivity indicators were already weak before the conflict, and productivity plunged as the violence intensified.

**Despite production disruptions, oil remains crucial to the economy.** Oil production collapsed in 2015, and exports did not resume until August 2016. Production and exports rates remain below pre-conflict levels.<sup>4</sup> In 2014, Yemen produced an estimated 167,000 barrels per day of oil. However, government estimates suggest that oil production averaged just 50,000–60,000 barrels per day between 2020 and 2022.<sup>5</sup>

**Remittances are increasingly vital to sustain consumption, and annually they are estimated to one-quarter—or more—of Yemen's GDP.** In 2021, official sources estimated remittance inflows

<sup>2</sup> Before the civil war, ODA had already risen from an average of US\$628 million (1.84 percent of GDP) in 2011–12 to US\$1.23 billion (2.93 percent of GDP) in 2013–14 (Figure 1). As the war intensified, ODA inflows increased significantly, averaging US\$2.55 billion (8.19 percent of GDP) over 2015–17. In 2018, Yemen's ODA inflow recorded a peak of US\$5.45 billion or 25.24 percent of GDP; since then, it has been on the decline. Between 2019 and 2021, the trend shows a clear decrease in the requirement-to-incoming funding ratio, with 2021 having a coverage of only roughly 30% of funds required by the UN system. It should be stressed that data on total aid commitments is inconsistent, as commitments are made by each country or entity through a variety of mediums that are hard to track, including speeches, conferences, social media, and closed-door meetings.

<sup>3</sup> Reflecting official exchanges with country authorities and based on figures in use also by the International Monetary Fund.

<sup>4</sup> <https://www.reuters.com/article/yemen-energy-masila-idUKL8N1AS4E8>; World Bank, "Yemen Economic Monitor: Clearing Skies Over Yemen?," Spring 2022.

<sup>5</sup> CBY (2022) Quarterly Bulletin: Economic and Monetary Developments, Issue no. 6, March.

at about US\$4 billion, though the actual figure could be more than twice as high.<sup>6</sup> Even at just US\$4 billion, remittances would have clearly supplanted hydrocarbon exports as the main source of foreign exchange. Remittances finance imports of essential commodities, enabling households to mitigate the negative impact of the socioeconomic shocks that the country has suffered over the course of the conflict. However, remittance income is not **evenly distributed across the population.**

**Despite declining agricultural output due in part to climate-change-related extreme weather events, agriculture has grown as a share of overall output and Yemeni workers are increasingly dependent on agriculture for employment, despite the precariousness of the sector.** Men and women are both most likely to say they work in agriculture. Labor market conditions and food security conditions are substantially different in IRG and Houthi areas of control, likely reflecting the more regular payment of government salaries in IRG areas. Yet in aggregate, most workers are employed in the private sector, primarily in agriculture.

**The prevalence of agricultural work represents both a step back from efforts to shift the economy towards value-added services, and deepening insecurity in the labor market due to climate change.** A geospatial data analysis conducted for this report confirms that Yemen's territory has become increasingly prone to climate-related shocks. Alternating periods of drought and flooding likely weakened agricultural productivity, exacerbating the overall decline in productivity across the economy. Farmers in rural areas experienced a considerable loss of income, buying inputs at considerably higher prices and selling produce at significantly lower prices because of transport disruptions. Consequently, many were forced to abandon their farms or limit production for subsistence purposes.<sup>7</sup> Households without working members or with working members employed as seasonal agricultural labor are the most likely to be food insecure.

**Yemen is acutely vulnerable to exogenous shocks, especially climate change and health-related crises, which pose additional threats to productivity and growth.** Yemen is the 22<sup>nd</sup> most vulnerable country and the 14<sup>th</sup> least ready country to adapt in the Notre Dame Global Adaptation Initiative (ND-GAIN) Index<sup>8</sup>. Recurrent flooding has extensively damaged roads and bridges, rendering the movement of people and goods virtually impossible in several governorates, with especially severe floods occurring between April and August of 2020. The pandemic compounded the shock of the conflict, and almost two years after the global rollout of COVID-19 vaccines, only about 1 percent of the population has received a single dose.

**The agricultural sector has shifted from growing food crops to Qat, a mild stimulant, posing a series of threats to food security and nutrition.** Machine-learning models and remotely sensed data enable an estimate of changes in qat cultivation areas in selected Yemeni regions from 2016 to 2021, revealing that the area devoted to qat increased by over 40 percent during the period. Qat cultivation has expanded faster than overall cultivation, suggesting that Qat is expanding at the expense of food crop lands. Higher food prices may therefore reflect a shift in cultivation from food crops to qat, a mild stimulant widely consumed across Yemen.

**Qat use and production on such a massive scale likely decreases Yemen's economic productivity.** While it is reasonable to assume that increased Qat production has a positive effect on overall economic output—since the value added of

<sup>6</sup> Remittances are originated mostly from GCC countries and Egypt, and in North America. Source: Cash Consortium of Yemen, Remittances Tracker (<https://reliefweb.int/report/yemen/cash-consortium-yemen-ccy-remittances-tracker-june-2022>).

<sup>7</sup> *Yemen's agriculture in distress, Conflict and Environment Observatory, October 2020*, <https://ceobs.org/yemens-agriculture-in-distress/>.

<sup>8</sup> ND-Gain <https://gain.nd.edu/our-work/country-index/rankings/>.

the qat is likely higher than the agriculture plantations that would have theoretically otherwise been cultivated—Qat poses risks for large productivity losses, hinging on significant health risks and lack of basic nutrition.

**Productivity—a key driver of wealth and job creation—was historically sluggish and plummeted as the conflict progressed.** The destruction of fixed capital exacerbated negative growth dynamics, and has slowly been eroding human capital. Labor productivity continued an already worrying pre-war trend of gradual thinning. According to the Human Capital Index, a child born in the Republic of Yemen in 2020 will be only 37 percent as productive as an adult than he/she would have been if they had enjoyed complete education and full health. This is lower than the average for Middle East & North Africa region and also slightly lower than the average for Low Income Countries.

**Emergency food-security assessments highlight the household-level impact of declining economic activity since 2015. Most of the population has experienced a steep decline** in living standards since the start of the conflict, and the deepening humanitarian crisis has severely eroded productivity and earnings. Working conditions are poor, employment income is not sufficient to cover basic needs, and underemployment is increasingly pervasive. A comparison of households before and after the Houthi takeover of Sanaa in 2014 shows a substantial increase in the share of household enterprises but a sharp decline in the average earnings of those enterprises—indicating that entrepreneurship was being used as a coping strategy.<sup>9</sup> Such evidence is consistent with an increase in underemployment rather than an increase in livelihood opportunities. Labor-market data suggest that both in Houthi and IRG areas, workers remain engaged in increasingly tenuous and low-quality employment rather than relying exclusively on external support, and the private sector continues to provide livelihood opportunities despite massive disruptions. While Yemeni firms and workers have proven remarkably resilient,

over time conflict-induced losses in physical, financial, and human capital will inflict permanent scarring on Yemen's economic potential.

**Some of the most critical economic challenges faced by Yemeni households stem from currency depreciation, barriers to market access, and a shift from food to cash crops.** The bifurcation of monetary policy and foreign-exchange flows, coupled with the monetization of fiscal deficits, have driven the steep depreciation of the rial since the beginning of the war, and the rising real cost of living has played a major role in pushing Yemen's population into a humanitarian crisis. A factor decomposition analysis of inflation shows that the depreciation of the riyal has played a central role in the rising cost of living for the Yemenis. International and internal barriers to movement have further increased the cost of living.

**Violence, including airstrikes, shelling, and the widespread use of landmines has damaged and destroyed roads and bridges, creating internal frontiers between warring factions.** At the same time, key international land borders have been closed. De facto barriers around the city of Taiz have increased the cost of transporting basic goods by up to 100 percent, while the cost of transport via the Aden-Ar Rahidah road appears to have roughly doubled since the beginning of the war.

**The public sector was once a major employer of Yemenis and is still an important source of income.** In a recent phone survey, 17 percent of respondents had a public-sector job before the war, while this had gone down to 8 percent of current employment. However, public-sector wages are paid irregularly if at all, especially in Houthi areas.

**In the absence of crucial governmental functions, Yemen's private sector has assumed**

<sup>9</sup> The 2014 Household Budget Survey continued uninterrupted despite the Houthi takeover of Sanaa. See: Tandon, S. 2019. "When Rebels Attack: Quantifying the Impacts of Capturing Territory from the Government of Yemen." *World Bank Economic Review* 33 (2), 328–352.

**an ever-greater role in managing the country's interrelated security, economic, and demographic challenges.** The private sector contributes to the provision of social services and has proven surprisingly resilient, but Yemen's firms face enormous challenges. Recent estimates suggest that the private sector incurred US\$27 billion in direct and indirect losses during the first three years of war.<sup>10</sup> Moreover, 25 percent of all businesses closed after 2014, and over 80 percent of firms experienced a drastic drop in sales, signaling further waves of business closures. Based on the 2020 Yemen Business Climate Survey Report, profits fell among 45 percent of businesses between 2017 and 2019.

**The conflict has also dampened international trade and deterred foreign investment.** An inhospitable environment for investment and trade discourages foreign investors and commercial traders. Yemen's foreign direct investment (FDI) dynamics are very weak, even by the standards of conflict-affected countries and low-income economies. Net FDI inflows have turned negative since 2011, indicating that foreign entities are disinvesting from Yemen.

## An Uncertain Outlook

**Yemen's political economy is highly volatile, and while a peace agreement would be a critical step towards recovery, it would not guarantee a return to macroeconomic stability.** Beyond an end to the war, an increase in hydrocarbon production, the reopening of the country's main transport routes, and better integration in regional and global trade markets would all be vital to renewed growth. Moreover, Yemen's social and political fragmentation is likely to persist into the post-conflict period, with divided territorial control and multiple overlapping formal and informal administrative frameworks. In this context, the international community's cooperation, assistance, and continued presence in Yemen will be critical to secure a lasting peace.

**In other words, Yemen's immediate future remains uncertain, and the path to robust and inclusive growth is extremely narrow, but with ground for some qualified optimism.** Despite the complexity of the conflict, the ongoing struggle for control of the economy, and the sheer scale of Yemen's humanitarian crisis and economic deterioration, there are reasons for qualified optimism. One of Yemen's most promising latent assets is its class of entrepreneurs, who have survived decades of political and economic turbulence. Yemen is surrounded by wealthy markets that share cultural ties and import most of their consumption goods. Given peace, stability, and adequate investment, the combination of a resilient private sector and a range of viable export markets could enable a broad-based recovery led by agro-processing and light manufacturing.

**It is critical to stress that Yemen had a history of conflict well before the current one, which stresses the importance of linking the political science analysis to economic development.** Large economic literature shows that such a history of repeated conflicts is also a predictor of a higher likelihood of falling back into new conflicts.<sup>11</sup> Once again, this is why the political economy analysis of Yemen is a subject of key focus within this CEM, so as to look into the elements that could help the country, once peace is reached, to make it lasting and sustainable, and support broad-based, inclusive growth.

**While a political settlement will not be sufficient to ensure renewed growth, peace is a prerequisite for Yemen's recovery.** Despite the fundamentally unpredictable nature of the conflict, the international experience with crisis, conflict,

<sup>10</sup> Central Statistical Organization (CSO), 2020. "Promoting Partnership with the Private Sector," *Socio-Economic Update*, Issue number 53, October.

<sup>11</sup> Among others, see "Conflict Relapse and the Sustainability of Post-Conflict Peace", World Development Report 2011 Background Paper, World Bank, by B. F. Walter.



## Yemen Scenarios Through 2030

Political Economy Scenarios	Macroeconomic Scenarios
<b>Business as Usual</b>	
<b>(Scenario 1) Status Quo</b>	<b>(Scenario 1) Base scenario</b>
The war continues along a similar trajectory to the past eight years, with violence ebbing and flowing.	Economic growth is slow and living conditions do not improve, with GDP growth of 2 percent from 2023 onwards. Poverty remains high.
<b>(Scenario 2) “No War, No Peace”</b>	<b>(Scenario 2) Limbo</b>
Conflict intensity dwindles, perhaps because of a ceasefire, but there is no political settlement.	Growth is marginally better than in the base scenario, around 3.1 percent on average. Exports and imports increase marginally relative to 2022. Poverty remains high.
<b>Path to Recovery</b>	
<b>(Scenario 3) Restored State</b>	<b>(Scenario 3) Limited Recovery</b>
De facto and/or de jure authority are consolidated around a single centralized set of state institutions. This authority is periodically contested by subnational actors.	GDP grows at twice the rate of the base scenario, and public investment increases. Poverty decreases marginally.
<b>(Scenario 4) Imperfect Peace</b>	<b>(Scenario 4) Enhanced Recovery</b>
A political settlement either enshrines de jure decentralization or leads to de facto decentralization that is accepted by national elites.	Growth is three times higher than the base scenario. Government and private sector investment increases and poverty falls to levels approaching those seen pre-war.

and political turbulence yields important lessons for Yemen. The first is the transition from conflict to peace in Sierra Leone since the end of the civil war in 2001. Sierra Leone is not a development miracle, but it is a peace and stability miracle. The reason is the strength and legitimacy of its traditional institutions. The traditional institutions of Yemen are different, but they are equally as legitimate and strong. The second example is Somaliland, Yemen’s near neighbor, which harnessed the legitimacy of local institutions to build a culturally relevant but modern accountable state and provide the basis for economic growth. The third is Abu Dhabi, where tribal ties underpinned rather than impeding state building as many Eurocentric paradigms would assume would happen in a tribal society. And the fourth is Colombia, which has experienced intermittent political turmoil and internal conflict since a ten-year civil war that began in 1948 but nonetheless has experienced solid economic growth, providing a less optimistic but also likely very realistic additional comparison for Yemen.

**The examples of Sierra Leone, Somaliland, and Abu Dhabi all highlight how local customary**

**rule and informal institutions can be assets that support post-conflict recovery and development, not barriers to progress.** In Yemen as elsewhere, classic state-centric approaches to economic and political development are unlikely to represent a comprehensive solution. A best-case outcome for Yemen is that its post-conflict order matches the “Red Queen Effect” described as the path to inclusive institutions by Acemoglu and Robinson (2019). Acemoglu and Robinson argue that the best way to build a prosperous and inclusive society is by balancing the power of state and society. If the state become too powerful and dominates society then this leads to a “despotic Leviathan” which has some potential for growth but where the uncontrolled power of the state inevitably leads to overreach that dulls innovation. If society becomes too powerful relative to the state, then this leads to an “Absent Leviathan” with very limited economic potential. It is in the middle, where society and state balance each other, that a dynamic emerges which can lead to a “Shackled Leviathan”. In this dynamic process the state and society complete with each other, and in the process, both become stronger

in ways which lead to public good provision and inclusive economic growth, and puts the country into what Acemoglu and Robinson describe as the “narrow corridor” of sustainable economic development. The negotiation in Somaliland is a real-world example of how a society can bootstrap their way into such narrow corridor of coexistence and cooperation between the state and society. Despite the immense damage incurred by the conflict, there is some evidence that the collapse of the patrimonial state after 2014 created opportunities for good governance and entrepreneurship by replacing an oppressive and sclerotic central administration with new local power centers. Formalizing and integrating these decentralized systems could establish the foundation for an effective post-conflict governance model.

## Imagining Yemen’s Future

**Any attempt to propose policy directions for Yemen is complicated by the fundamental uncertainty surrounding the country’s political future.**

Yemen possesses a broad roadmap for the future in the form of the outcomes of the National Dialogue Conference, a 10-month series of broadly inclusive talks held in Sanaa in 2013 and 2014.<sup>12</sup> However, given the country’s extreme territorial and institutional fragmentation, deep political polarization, and ongoing competition among rival power centers, it is unclear what importance decision-makers and political elites attach to these outcomes. Policymaking is further complicated by lack of reliable official data and by suboptimal coordination on data collection among local and international partners.

**Data constraints notwithstanding, some broad political and economic scenarios can be sketched out based on Yemen’s macroeconomic context and the political economy analysis that is found throughout this report.** In Chapter 4, alternative political economy and macroeconomic scenarios are presented for 2022–2030, reflecting different institutional and economic trajectories, while

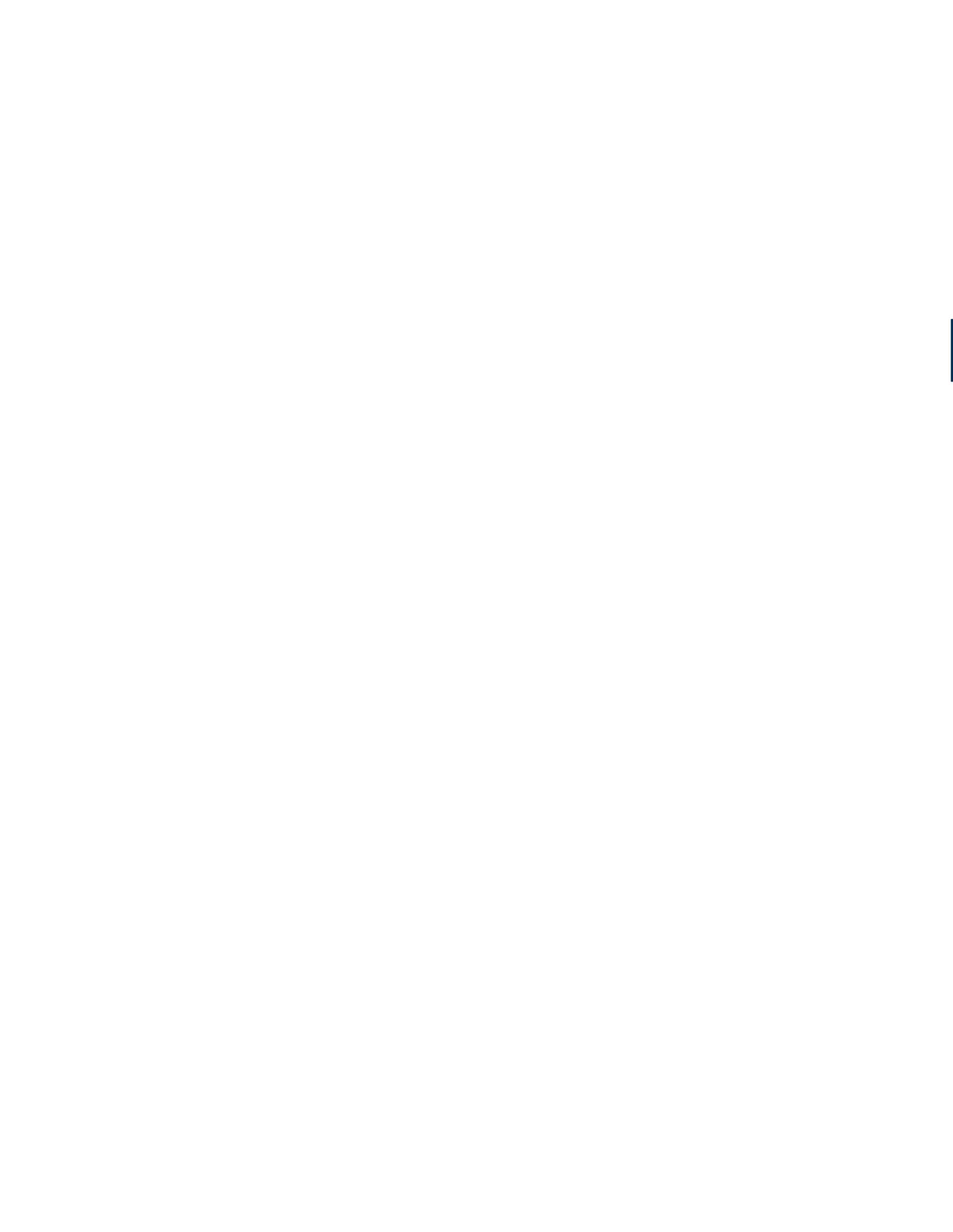
not representing development forecasts. Based on key informant interviews and a review of the literature on Yemen, the report outlines the following scenarios (see table above).

**While the scenario analysis does not represent concrete predictions or forecasts, the exercise does provide some useful policy take-aways.** First, Yemenis witness at least some modest improvements in their economic situation in all non-Status Quo / Base scenarios, including a pessimistic No War, No Peace scenario, in which the conflict is frozen but there is no progress towards a political settlement. In other words, if the fighting is significantly reduced or completely stops, life gets better for Yemenis even if the political outcome is unsatisfactory. Second: peace, decentralization<sup>13</sup> and increased public investment efficiency can yield dramatic gains in employment and poverty reduction. And third, the private sector makes an important contribution to growth across scenarios.

**In the most optimistic reading of this analysis, if the conflict subsides, the donor community is supportive, and the economy responds positively to increased investment in infrastructure and human capital, Yemen could achieve considerable gains in renewed growth and poverty reduction by 2030.** Given Yemen’s low levels of infrastructure and human development, investments in these areas should yield high returns. However, effective public spending will require stronger governance, including more efficient public expenditure management and tax collection, with adequate support for poor households and positive incentives for the private sector. International aid will be vital to finance investments in Yemen’s development.

<sup>12</sup> *National Dialogue Conference Outcomes Document*, Feb 2014, Collated by the UN Special Envoy for Yemen’s Office.

<sup>13</sup> if, as a large platform of key informants and the macroeconomic scenarios assume, this leads to improved security and stability.



## Introduction: Change and Continuity

**Yemen's economy has been transformed by eight years of violent conflict.** The war has plunged Yemen into a dire humanitarian crisis. Already deeply fragile before the conflict, Yemen has effectively been tipped into state failure. Economic output has fallen by half, while the country's infrastructure has been devastated (see Table 1). The poverty rate has shot to over 66 percent. The supply of basic services has plummeted, government effectiveness is weak or nonexistent in much of the country, and levels of food insecurity, severe malnutrition, and physical violence are among the highest in the world.

**The conflict has exacted a devastating human toll.** The war's intensity has fluctuated over the course of eight years of fighting, but on average more than a thousand people have been killed every month, with Armed Conflict Events Database (ACLED) estimates of reported fatalities rarely dipping below that number (see Figure 1). According to ACLED, by mid-2022 150,000 people had died as a direct result of violence, including more than 15,000 civilians. In 2019, the UN Development Program (UNDP) estimated that more than 133,000 people had died from the war's indirect impacts, including a lack of access to food and health services.

**Yemen's reconstruction needs are estimated at US\$20–25 billion.**<sup>14</sup> More than one-third of all homes, schools, hospitals, and water and sanitation facilities have been damaged or destroyed during the war. Data from a 2020 World Bank Dynamic Needs Assessment (DNA)<sup>15</sup> found that the housing sector had been the most severely affected by the conflict, with about 40 percent of the housing stock suffering physical damage (see Figure 2).<sup>16</sup> About

<sup>14</sup> World Bank's Yemen Dynamic Needs Assessment, 2020 Update; <https://documents1.worldbank.org/curated/en/490981607970828629/pdf/Yemen-Dynamic-Needs-Assessment-Phase-3-2020-Update.pdf>.

<sup>15</sup> The World Bank conducted a multi-phased Dynamic Needs Assessment (DNA) in Yemen, first in September 2015, to assess the impacts of the ongoing crisis in the country and to provide a preliminary estimate of recovery and reconstruction needs. A first phase, completed in early 2016, covered the education, energy, health, housing, transport, and WASH sectors in Sanaa, Aden, Taiz, and Zinjibar. The second phase, finalized in June 2017, updated the first-phase results and expanded the assessment to 10 cities and seven sectors. The third phase, conducted in 2018, further expanded the number of cities and sectors assessed. Its findings were updated in early 2020 to reflect conflict dynamics.

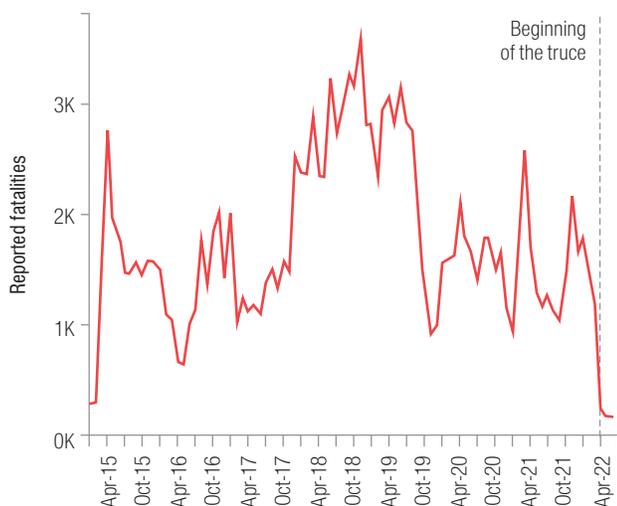
<sup>16</sup> Damage estimates are based on: (i) the replacement cost per asset; (ii) number of assets damaged in each category assessed within the sector; and (iii) physical status of the damaged assets.

**Table 1** Economic and Humanitarian Indicators 2014–2022 (averages)

	2002–2009	2010–2014	2015–2022
GDP growth (annual %)	3.9	0.4	-6
GDP per capita (constant 2015 US\$)	2,519	2,393	911
FDI, net inflows (% of GDP)	2.0	-0.4	-1.2*
Human Development Index (HDI)	0.49	0.51	0.46**
Gender Development Index (GDI)	0.66	0.64	0.50**
Percentage of undernourished people	26.8	32.4	44.2***

Source: World Development Indicators, WB; UNDP; FAO.

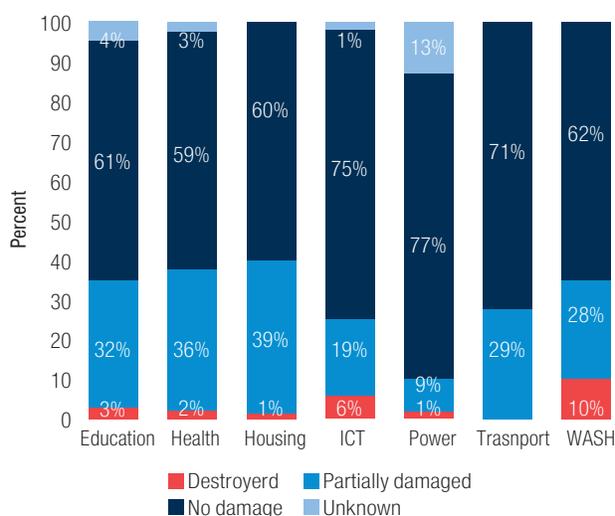
\*data available up until 2019; \*\* data available up until 2021; \*\*\*data available up until 2020.

**Figure 1** Reported Fatalities, 2015–2022

Source: ACLED

38 percent of the country's water supply, sanitation, and hygiene (WASH) infrastructure also suffered physical damage, with about 10 percent of all physical WASH assets having been destroyed outright. In addition, 38 percent of the country's health facilities were either damaged or destroyed, along with 34 percent of education facilities and 29 percent of fixed transportation assets.

**Yemen's vast humanitarian needs are largely unmet.** About 24.3 million people, representing more than two-thirds of the population, require

**Figure 2** Conflict Damage by Sector

Source: World Bank DNA.

some form of humanitarian assistance. Of these, 12.9 million are currently in acute need of assistance. Moreover, the conflict has displaced roughly 4.3 million people. The UN has estimated that US\$4.3 billion will be required to meet the country's humanitarian needs in 2022, but Yemen has received just US\$2.3 billion in donor support.

**The conflict has touched upon virtually every aspect of social and economic life.** Basic public health and education services have been severely disrupted, infrastructure has been damaged or

destroyed, the private sector is a fraction of its former size, and the country's civil service has gone unpaid for years at a time. The COVID-19 pandemic and subsequent international price shocks have compounded Yemen's economic challenges, and the authorities have been ill-equipped to cope with these challenges. Yemen is also increasingly vulnerable to the effects of climate change, including increasingly frequent and severe droughts, flooding, erratic rainfall, agricultural diseases and pests, and rising sea levels. The war's impact has been so severe and sustained that even if the war were to suddenly end, a post-conflict Yemen could face stagnant growth and productivity.

**Data constraints compound Yemen's policy challenges.** For example, while many humanitarian and development actors have warned of high levels of hunger and even a potential famine in Yemen since 2017, others have argued that these claims rest on unreliable data.<sup>17</sup> Similarly, reports of a banking system in disarray and a market truncated by blockades are belied by evidence of ongoing commercial transactions and imports of food, fuel, and other vital commodities.<sup>18</sup> Addressing these and other apparent contradictions underscores the importance of this Country Economic Memorandum (CEM) and other innovative analytical work in Yemen.

**The World Bank's last Yemen CEM was completed in 2015, when the country was profoundly different than it is today.** An updated CEM, providing an in-depth analysis of Yemen's socioeconomic context, political economy, and conflict dynamics is crucial to support effective country engagement. However, several analytical instruments that the World Bank typically leverages to produce a CEM are not available due to data constraints and the limited policy dialogue with domestic authorities. In response, this CEM draws on a combination of traditional and innovative data sources, as well as qualitative assessments and perspectives, to fill knowledge gaps and assess economic conditions.

## Pre-War Yemen

**Prior to the war, Yemen was already a very poor country facing severe governance challenges.** In 2014, Yemen's GDP per capita was about US\$1,600.<sup>19</sup> The country was dominated by a centralized, patrimonial state in Sanaa, characterized by weak accountability and poor governance that distorted incentives and stifled growth.<sup>20</sup> Yemen was a case of what Migdal (1988) called a "strong society and a weak state." Outside of the country's urban centers, informal local governance arrangements and customary law were as common as state-provided services, if not more so.

**Yemen's pre-war economy hinged on the country's dwindling hydrocarbon resources.** The increasing importance of the hydrocarbon sector was the dominant trend in Yemen's pre-war economy. Oil and gas directly contributed 12.5 percent of value added between 1994 and 2014. By the 2010s, hydrocarbons accounted for roughly 90 percent of exports, about 75 percent of government revenue, and roughly 20 percent of GDP. Meanwhile, growth and productivity stagnated outside of the hydrocarbon sector and the domestic activities were financed by oil and gas exports. A growth accounting analysis conducted by the World Bank in 2014<sup>21</sup> found that productivity growth was driven by capital accumulation and by a labor force that was increasing in size while its marginal productivity stagnated. The economy struggled to create jobs or allocate resources to high-value-additive activities, and most workers were engaged in low-productivity agriculture.<sup>22</sup>

**Along with remittances, oil and gas exports underwrote a rising import bill that included**

<sup>17</sup> See: Tandon and Vishwanath (2021) and Vuylsteke (2021).

<sup>18</sup> For example, see International Crisis Group (2021).

<sup>19</sup> Source: World Bank Databank, <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=YE>.

<sup>20</sup> World Bank, Yemen Country Economic Memorandum, 2015.

<sup>21</sup> Unlocking the Potential for Economic Growth, Yemen CEM, October 2015, World Bank.

<sup>22</sup> Ibid.

**about 90 percent of Yemen's staple foods, 40 percent of basic consumer goods, and a growing share of government revenue.**

Prior to the conflict, oil revenues were estimated at US\$7.9 billion, while remittances were estimated at US\$3.4 billion, though the latter were likely much higher than reported.<sup>23</sup> Elevated global oil prices and rising remittance inflows were not enough to offset mounting import demand, and Yemen ran a negative current-account balance from 2007 onward.<sup>24</sup> The government's share of export revenue from the Yemen LNG Project<sup>25</sup> totaled approximately US\$665 million in 2014, representing 22 percent of total government hydrocarbon export revenue. Income from LNG exports was forecast to more than triple by 2018, when it would account for more than 45 percent of government hydrocarbon export revenue.<sup>26</sup>

**Yemen's dependence on the hydrocarbon sector proved unsustainable.** Oil production peaked at 457,000 barrels a day in 2002, but a decade later output had fallen by more than 65 percent. Nevertheless, government oil revenue increased due to rising export prices, an increasing share of export royalties, and the addition of some LNG revenue. Yemen's gas reserves were estimated at about 430 billion cubic feet in 2014. The Yemen LNG project encompassed about two-thirds of proven reserves, while the remaining reserves stayed untapped or were flared—in part because the country's legislative framework for oil production did not account for gas deposits. By 2014, gas exports were generating around 13 percent of total hydrocarbon revenues, but initiatives to use the remaining gas reserves to produce electricity stalled.<sup>27</sup>

**To boost its oil and gas income, the government started increasing public ownership of some of the largest oilfields in 2005.** As a Production Sharing Agreement (PSA) with a U.S. firm came to an end, the government elected to take full control of one of the country's biggest oilfields, the Safer field in Marib. In 2011, the

government elected not to renew its PSA with a Canadian firm for the Masila oil field in Hadramawt, then the country's most productive field. Combined with mounting insecurity, including attacks on oil and gas infrastructure, these actions had a deeply negative impact on investor sentiment, and several post-2007 bidding rounds failed to draw significant credible interest.

**Fiscal rigidities limited government opportunities to maximize the hydrocarbon sector's potential.** A series of fiscal crises and the prioritization of short-term cashflow management contributed to chronic underinvestment in the oilfields the government had taken over, despite their vital importance as a source of revenue. Before 2009, oil-field development policies and PSAs did not include provisions for natural gas extracted as a byproduct of oil production. Numerous analyses proposed that such gas could be used to produce cheap, clean energy for domestic consumption, but gas-based electricity generation projects struggled to progress due in part to confusion over who owned Yemen's gas.<sup>28</sup> Because oil firms and the government could not agree on how to share the profits, gas was either reinjected into oilfields or flared. By this point, Yemen's oil-export pipelines and terminals, which

<sup>23</sup> IMF, WB data.

<sup>24</sup> The CA balance went from an average of +3.2 percent of GDP (surplus) in 2000–2006 to a deficit of –6.6 percent of GDP, in the remainder years of the decade (2007–2010), and onwards.

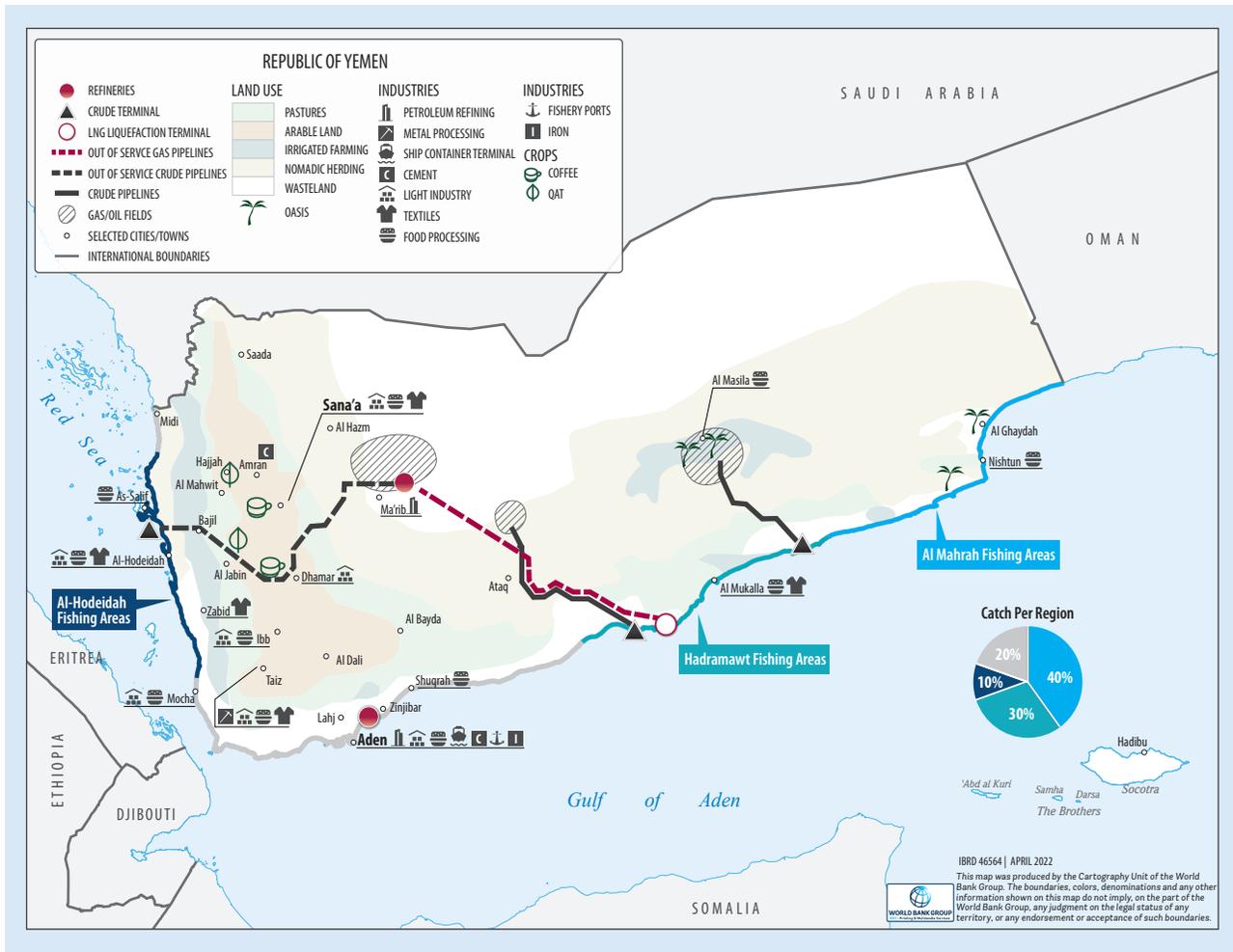
<sup>25</sup> The Yemen LNG project was launched in 2005 as a partnership between the government and several major international oil companies. It started producing and exporting LNG from a non-associated gas field in Marib in 2009. Cost-recovery provisions in the development agreement combined with low gas export prices limited government revenue during the initial phase.

<sup>26</sup> Increases were calculated on the basis of an end to the cost-recovery process on the Yemen LNG project, the expiration and renegotiation of long-term LNG export contracts, and expected shifts in market pricing.

<sup>27</sup> Estimates sourced from IMF (2014) and World Bank (2015).

<sup>28</sup> *Yemen – A natural gas incentive framework*, World Bank, 1 June 2006.

## Map 1 Geographic Distribution of Economic Activity



Source: World Bank (reflecting status in the 2020s).

had been built before unification in 1990, were in dire need of rehabilitation.

**Sizeable energy subsidies impose an unsustainable burden on the public finances.** Even as it exported crude oil and LNG, Yemen increasingly relied on imported refined fuel products from abroad, which the government resold at subsidized prices to meet local energy needs.<sup>29</sup> Energy subsidies cost the equivalent of 7.2 percent of GDP in 2013 and 6.4 percent in 2014. This subsidy system remains in place. It is regressive and reportedly subject to pervasive corruption.<sup>30</sup> However, it is

also an issue of extreme political sensitivity, and attempts to cut subsidies in 2005 and in 2014 led to mass protests.<sup>31</sup>

<sup>29</sup> Republic of Yemen : Unlocking the Potential for Economic Growth, World Bank, October 2015.

<sup>30</sup> See Engelke et. al., *Petroleum Subsidies in Yemen: Leveraging Reform for Development*, World Bank, June 2013; *Yemen Corruption Assessment*, USAID, September 2016.

<sup>31</sup> See: *Yemen subsidy riots leave 16 dead*, Associated Press, 22 July 2006; *Yemen protests erupt after fuel price doubled*, Al Jazeera English, 30 July 2014.

## Patronage Systems Dominated Pre-War Yemen

**Yemeni society is highly heterogeneous: the country encompasses multiple religious confessions, tribal structures, political and societal elites, and business networks.** These multiple overlapping identities have profoundly influenced state-building efforts. Paul Dresch, among the most eminent scholars of modern Yemen, writes that

[T]he idea of Yemen as a natural unit has been embedded in literature and local practice. Unified power has not. Political structures through the nineteenth century were defined by reference to religion or dynasty, not territory, and a list of rulers would be indefinitely long for their claims overlap in both time and space.... Much of Yemen's history through the twentieth century connects with efforts to form [a] state, which was finally established in 1990. Before that there were two states, North and South, with their capitals at Sanaa and at Aden, each with its view of the country's past and future. [In] the years around 1900 there were myriad little centers of power—hence myriad different histories...and a few great claimants, two of which were foreign empires.<sup>32</sup>

**After the unification of north and south Yemen in 1990, the central government in Sanaa struggled to establish sound governance arrangements in areas outside of the country's urban centers.** Nadwa al-Dawsari, a leading Yemeni scholar of tribal society, argues that

Yemenis have relied on indigenous tribal traditions to regulate conflict and establish justice for centuries, if not millennia. Tribal law has effectively handled conflicts between various tribes, between tribes

and extractive companies, and between tribes and the government. It has successfully prevented and resolved conflicts over resources, development services, and land, and has sometimes managed to contain complex revenge-killing cases. Nationally, tribal mediators have played an important role in promoting political dialogue and building consensus among political groups. (...) Most Western observers and urban Yemenis believe that tribes and the tribal system have been an impediment to state building and development in Yemen. And, indeed, there have been tribal leaders who traded the needs of their people for political influence and who were part of the corrupt patronage network that undermined the state. However, tribes have played an important role in holding Yemen together in the face of increasing political conflicts and harsh economic conditions. Moreover, as the tribal system is increasingly under stress, tribal leaders and citizens in... tribal areas...are eager to see legitimate and functioning state institutions in their areas and have the desire and willingness to contribute to achieving that.<sup>33</sup>

**Pre-war Yemen was marked by a complex and deeply embedded patronage system (see Box 1).** Throughout the 1990s and 2000s, corruption and rent-seeking dominated the public and private sectors. To remain stable, this system was forced to accommodate a growing number of clients as the population grew and previously marginalized groups gained power.<sup>34</sup> Perceptions of state

<sup>32</sup> Dresch, Paul, *A History of Modern Yemen*, Cambridge University Press, 2000.

<sup>33</sup> Al-Dawsari, Nadwa, *Tribal Governance and Stability in Yemen*, Carnegie Endowment for International Peace, 24 April 2012.

<sup>34</sup> Republic of Yemen : Unlocking the Potential for Economic Growth, World Bank, October 2015.

## BOX 1: AN OVERVIEW OF THE WORLD BANK'S 2015 CEM

**Prior to the start of the war, Yemen was already the poorest country in the Middle East and North Africa (MENA) region.** Home to over 30 million people, Yemen has one of the highest birth rates in MENA at about 4.4 births per woman in 2014. Life expectancy is only 66 years, and infant mortality is approximately 46 per 1,000 live births, 77 percent higher than the average for Arab states. The poverty rate in 2014 was estimated at about 48 percent of the population. Yemen is a net importer of food, fuel, livestock, and machinery. It exports some crude oil, qat, coffee, and seafood.

**In 2014, the World Bank prepared a CEM for Yemen just as the political crisis that had started in 2011 was metastasizing into a civil war.** The CEM highlighted the country's lackluster economic performance and heavy dependence on the hydrocarbon sector, noting that oil and gas production remained the key source of rents and the engine of the economy, and that the government had proven unable to diversify economic output beyond the extractive industries. The CEM also identified the country's deeply entrenched patronage system as a major obstacle to reform. While patronage was particularly acute in the hydrocarbon sector, it was also prevalent in agriculture, WASH, telecommunications, and financial services. The CEM argued that the struggle for control of rents had distorted economic policies and undermined the influence of the private sector and civil society.

**The CEM found that few major enterprises were held by nonelite actors and that elites routinely used the power of the state to undermine the competitiveness of firms they did not control.** Arbitrary discrimination in favor of elite interests represented a substantial barrier to private-sector development, worsening an already weak business environment marked by the poor quality of infrastructure and services. In line with the outcomes of the National Dialogue Conference (NDC), the CEM proposed the adoption of a federalism framework to strengthen accountability, oversight, and citizen engagement while reducing corruption and promoting economic competition.

corruption in Yemen were among the highest in the world and helped set the stage for the conflict.<sup>35</sup> Falling oil output intensified intra-elite competition, as rival factions sought to capture larger shares of a shrinking pool of resources.<sup>36</sup> As oil rents dwindled, elites fought over what remained rather than implementing painful but necessary reforms to promote growth outside the oil sector.

**In 2011, a political crisis further weakened the macroeconomic environment.** Mass protests against the government of then-President Ali Abdullah Saleh precipitated an open conflict between rival military units and private militias in Sanaa and other major cities.<sup>37</sup> The resulting security vacuum was exploited by rebels in the north, secessionists in the south, and other extremist elements, who seized control of provincial capitals. Civil war was averted when neighboring Gulf Cooperation Council (GCC) states brokered a transitional initiative that led to the formation of a unity government and the ouster of President Saleh.<sup>38</sup> Interim President Abed Rabbo Mansour Hadi was appointed to oversee a two-year transition to democracy while implementing economic and security-sector reforms.

**The transitional period failed to foster improvements in economic governance.** Political elites in the new unity government accelerated their competition for institutional and financial resources, as historical rivals and emerging factions sought to improve their positions and weaken their opponents.<sup>39</sup> Tens of thousands of employees were added to state payrolls, particularly in the security and military sectors, while elites reputedly sabotaged oil, gas, and electricity infrastructure in an effort to undermine one another.<sup>40</sup> An inclusive National Dialogue Conference (NDC) organized by the United Nations provided the basis for a new

<sup>35</sup> In 2010, Yemen was ranked 146 out of 183 countries for perceived corruption by Transparency International. In 2011, meanwhile, Gallup found that seven out of 10 Yemenis polled on drivers of that year's uprising said that corruption was widespread in government and was a major cause of the unrest. See Gallup, 'Widespread Corruption in Government', June 2011.

<sup>36</sup> *Ibid.*

<sup>37</sup> *Yemen: Enduring Conflicts, Threatened Transition*, International Crisis Group, 3 July 2014.

<sup>38</sup> *Ibid.*

<sup>39</sup> *Yemen: Corruption, Capital Flight and Global Drivers of Conflict*, Chatham House, 1 September 2013.

<sup>40</sup> *Ibid.*

national constitution, but its contents—and particularly its provisions related to federalism—were disputed and at times contradictory.

**By 2014, Yemen was at an inflection point.**

Worsening fiscal and external balances, faltering service delivery, mounting insecurity in cities, and open conflict outside the capital had pushed the country to the brink of a humanitarian disaster. In July 2014, a sudden reduction in subsidies amid regular power outages and fuel shortages sparked widespread protests, which the Houthi movement, popularly known as the Houthi rebellion, used as a motivation for seizing Sanaa in September of the same year.<sup>41</sup> The Houthis and their allies placed Hadi under house arrest after he attempted to ratify the new constitution, then moved to consolidate their control over the entire country. The Houthi movement joined forces with Saleh's loyalists, and when Hadi fled to the southern port city of Aden, the Houthi-Saleh alliance pursued, launching airstrikes that precipitated a Saudi-led military intervention. The Houthis would ultimately consolidate control over Sanaa and the main population centers in northwest Yemen. However, former President Saleh was killed by the Houthis following a schism in December 2017.

## The War Reshaped Yemen's Political Economy

**The conflict has exacerbated preexisting social, political, economic, and geographic disparities.**<sup>42</sup>

The Houthi-Saleh campaign faltered outside of the country's northern highlands, as the alliance struggled to make progress in areas where religious, tribal, and political affiliations supported organized resistance. Tribal groups in Marib (to Sanaa's east) and al-Bayda (southeast of Sanaa), as well as Salafist and pro-independence fighters in the formerly independent south, along with military and tribal forces in the industrial and cultural hub of Taiz formed various resistance movements. In 2018, shortly after the Houthis killed former President Saleh, his nephew Tareq Saleh emerged

at the head of another faction battling the Houthis on the western Red Sea coast.<sup>43</sup>

**Yemen is divided among multiple competing power centers.** The Houthis' fatal split from Saleh in December 2017 left them as the dominant force in northwest Yemen, where the bulk of the population lives and GDP is produced. The international community has largely upheld Hadi's Internationally Recognized Government (IRG) as Yemen's rightful sovereign authority; on the other hand, the Houthi forces are the De Facto Authority (DFA) in large portions of the country. Hadi sustained alliances with political, tribal, and military forces in Taiz, Marib, eastern Abyan, northern Shebwa, and northern Hadramawt, but his forces were pushed out of Aden by the pro-independence Southern Transitional Council (STC) in 2019. Other independent factions include Salafist militants and the forces of Tareq Saleh on the Red Sea coast and elsewhere.

**The conflict has divided the country physically and administratively, as formal state institutions have fragmented and morphed into new hybrid governance arrangements.** Yemen's formal and informal public administration has been transformed over the course of the conflict, and the lines between state and nonstate military and civilian institutions is increasingly blurred. New state-like capacity has emerged in some parts of the country, fostering surprisingly robust governance and significant development in previously marginalized and insecure areas. Elsewhere, local institutional capacity has withered, while public service delivery has partially or completely ceased. Meanwhile, some areas that were already deprived have seen further declines in living standards.

**A Political Leadership Council (PLC) formed to replace Hadi in April 2022 has struggled to overcome national and subnational divides,**

<sup>41</sup> *Yemen: Stemming the Rise of a Chaos State*, Salisbury, 2016.

<sup>42</sup> *Regionalism and Rebellion in Yemen*, Stephen Day, 2013.

<sup>43</sup> *The Yemen Matrix: Untangling the Relationships that Drive the War*, DeLozier, 2020.

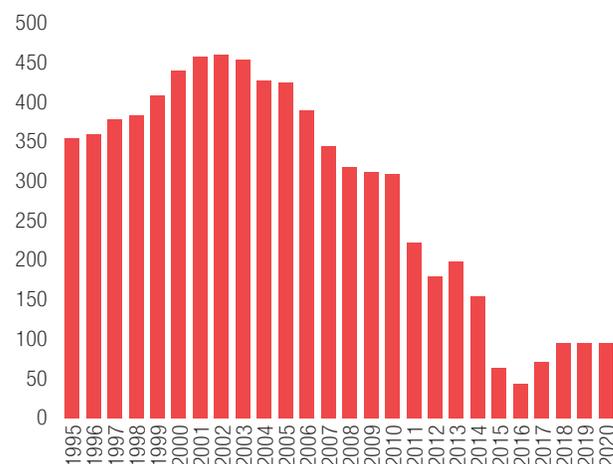
**while governance quality has not significantly improved.** The council includes senior leaders from the STC; Tareq Saleh the governor of Marib; a powerful Salafist-led faction; the pre-2011 ruling party, the General People's Congress; and, less directly, Islah, the country's main pre-war Sunni Islamist political bloc. Just over three months after the PLC's formation, Salafist and local forces pushed Islah-aligned military and security units out of northern Shebwa, while the STC seized control of eastern Abyan and began to threaten a complete takeover of Hadramawt. Conflicts between PLC factions continue, and of US\$3.3 billion in economic support pledged by Saudi Arabia and the UAE to the PLC only \$1bn has materialized, and only 15 percent of this amount has been dispersed to the government.<sup>44</sup>

## Yemen Remains Heavily Dependent on Oil Production

**Despite disruptions in production and exports, oil remains vital to Yemen's economy.** Oil production collapsed in 2015, and exports ceased until August 2016. Production and exports remain below pre-conflict levels, and both were threatened by Houthi attacks on IRG oil export infrastructure in October and November 2022.<sup>45</sup> Oil output is only around one-third of its pre-war average: In 2014, Yemen produced an estimated 167,000 barrels per day of oil. However, government estimates suggest that oil production averaged just 50,000–60,000 barrels per day between 2020 and 2022, while gas exports dropped to zero (see Figure 3).

**Fiscal dependence on oil exports remains high, while revenue efficiency has worsened.** Official IRG estimates suggest that the government earned about US\$479 million from oil exports in 2021, representing about 27 percent of total government revenue, standing at \$1.7bn, the same year, per official figures. These figures do not include revenues earned by the Houthis from customs and tax collection, as no reliable estimates exist, though informal

**Figure 3** Oil Production (thousands of Barrels Per Day)



Source: BP annual statistical review 2021<sup>a</sup>.

<sup>a</sup> See: <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>.

reports indicate that such revenues may exceed IRG income.<sup>46</sup> Citing internal Houthi documents, a 2021 report by a UN expert panel estimated formal Houthi revenues at US\$1.8 billion in 2019.<sup>47</sup> Local authorities in Marib and Hadramawt also collect and redistribute their own revenues, which are included in the national accounts. Fiscal oversight of Yemen's ports and oilfields is uneven, and actual revenues could be far higher than these estimates suggest.

**Public spending has fallen far below pre-war levels.** IRG revenues and expenditures dropped by 35 percent and 26 percent (nominal YR terms), respectively, between 2014 and 2021. Meanwhile, the rial depreciated by about 75 percent, compounding the fiscal contraction. No reliable estimates are

<sup>44</sup> This report has been completed as of end-January 2023 and reviewed before publication in March.

<sup>45</sup> <https://www.reuters.com/article/yemen-energy-masila-idUKL8N1AS4E8>; World Bank, "Yemen Economic Monitor: Clearing Skies Over Yemen?," Spring 2022.

<sup>46</sup> *How Huthi-Saudi Negotiations Will Make or Break Yemen*, Crisis Group, 2022.

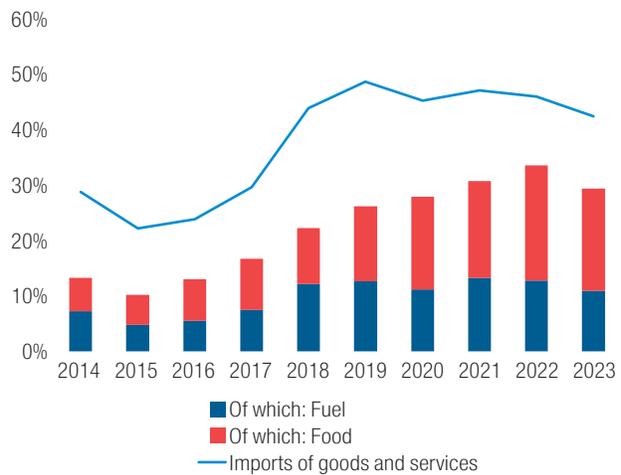
<sup>47</sup> *Final Report of the UN Panel of Experts for Yemen*, United Nations, 29 January 2021.

available for Houthi spending, and some regions under nominal IRG control collect and redistribute their own revenues, complicating efforts to form a complete picture of revenues and expenditures nationwide.<sup>48</sup>

**Utility subsidies weigh heavily on IRG finances, generating arrears and widening budget gaps.** Although the government has not subsidized fuel sold on the open market since 2017, it does subsidize fuel used to produce electricity. In 2021, the IRG spent an estimated US\$400 million on subsidies, representing about one-third of total expenditures and a lion's share of oil export revenues. While figures are not yet available for 2022<sup>49</sup>, high international fuel prices may have tripled subsidy spending. Despite enormous public spending on the sector, the electricity supply remains extremely unreliable in towns and cities under IRG control, prompting allegations of widespread fuel theft and corruption in the electricity sector (see Chapter 3). As consumers are rarely billed for electricity, most public spending on electricity production is never recouped.<sup>50</sup>

**Yemen is more import-dependent than ever before (see Figure 4).** After falling in 2015, the official import bill has risen steadily over the course of the conflict. According to official estimates, the country spent US\$9.2 billion on imports in 2021, with food and fuel accounting for 65 percent. The government expects imports to rise to US\$12.5 billion in 2022, a 35 percent increase, which would make this the first year since the conflict began that the cost of imports exceeded the pre-war peak of US\$12.26 billion in 2014. However, total exports in 2014 were almost three times higher than the government's projection for 2022.<sup>51</sup> Anecdotal evidence from World Bank staff and key informant interviews strongly suggests that official data significantly undercount imports due to high levels of informal trade. As imports strongly correlate with overall economic activity, this is circumstantial evidence—also suggested by Night Time Light activity—that economic activity may be stronger than official figures indicate.

**Figure 4** Estimated Imports, 2014–2022\* (% of GDP)



Source: IMF, World Bank, IRG authorities. (\*2022-23 figures are projected).

## Remittances Remain Critical to Macroeconomic Stability

**Remittances, along with official development assistance (ODA), play a vital role in financing imports and preventing further currency depreciation.** Remittances are also an object of competition between the Houthis and IRG. Key informant interviews indicated that the dollars used to pay for imports of essential commodities, including food and fuel, are sourced from remittances from organizations, firms, migrant workers, and expatriates.<sup>52</sup> Remittance payments are not distributed evenly across the population. A large percentage of remitted funds flows to households in more populous Houthi-controlled northwestern governorates. The IRG has repeatedly attempted to assert its authority over money-transfer services and banks, and to monitor

<sup>48</sup> See: *Brokering a Ceasefire in Yemen's Economic Conflict*, International Crisis Group, January 2022.

<sup>49</sup> This report was concluded prior to end-2022.

<sup>50</sup> World Bank staff based on consultant Key informant interviews, January-October 2022.

<sup>51</sup> Source: National authorities and IMF data.

<sup>52</sup> Key informant interview, September 2022.

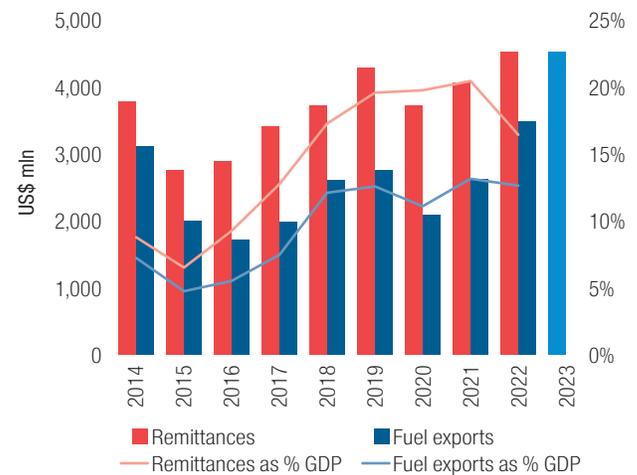
and direct flows through the IRG's Central Bank of Yemen in Aden (CBY-Aden), albeit with mixed results.

**Annual remittances may amount to one-quarter of GDP or more.** In 2021, remittances were about US\$4 billion according to official estimates, but the real figure could be as much as twice this amount. A simple back-of-the-envelope calculation gives a sense of the volume of transactions and the challenge of precisely estimating remittance flows. Yemen's import bill for 2021 totalled roughly US\$9.2 billion.<sup>53</sup> While official IRG figures show US\$1.2 billion in receipts from oil exports for 2021, much of this amount was used to cover external operating costs and finance fuel imports for electricity production. CBY-Aden provided approximately US\$110 million in foreign exchange to the open market over the course of nine auctions during 2021. ODA to Yemen averaged approximately US\$2.9 billion per year between 2015 and 2021, around 40 percent of which (about US\$1.2 billion) was to cover the government's operating expenses.<sup>54</sup> With no other formal source of foreign exchange available to the market, the total value of remitted funds could exceed US\$7 billion, especially since import volumes are likely undercounted (see Figure 5).

**Even at the low-end estimate of US\$4 billion, remittances have clearly replaced hydrocarbon exports as Yemen's main source of foreign exchange.** Over the two decades prior to the conflict, foreign exchange from oil exports was at least double the officially recorded value of remittances, but the war has reversed this relationship. In addition to financing imports and stabilizing the exchange rate, remittances support essential household consumption and have helped mitigate the negative impact of the socioeconomic shocks that the country has suffered over the course of the conflict.

**The formalization of remittance flows may be affecting the balance of economic power inside Yemen.** According to key informants in the financial services sector and migrant workers in Saudi Arabia, official digital remittance services are replacing informal service providers as the preferred channel for

**Figure 5** Remittances and Fuel Exports, 2014–2023



Source: IMF and World Bank Staff Calculations.

remittances.<sup>55</sup> This may indicate a further consolidation of a shift in remittance channels among Yemeni

<sup>53</sup> National authorities and IMF data.

<sup>54</sup> Source: World Bank staff calculations, based on: UN, OECD, OCHA, USAID, US State Department, and UK FCDO data sources.

<sup>55</sup> Key informant interviews, September 2022. As outlined in the ACAPS report, *The impact of remittances on Yemen's economy*, published in October 2021: "In the case of Yemeni migrants and expatriates based in Saudi Arabia, official/formal remittance options are: (1) SWIFT transfers through the formal banking system, (2) international money transfers through global money transfer and remittance companies (e.g. Western Union, MoneyGram, and Xpress Money), (3) electronic remittance services, and (4) licensed money exchange companies, such as Bin Yaala Exchange." The ACAPS report also outlines the different form of electronic or digital remittance services provided by licensed operators in Saudi Arabia: "An electronic remittance is carried out via a Saudi bank that the remitter has an account with and that offers its own, official/formal electronic remittance services, such as Quick Pay (provided by Al-Ahli Bank), Enjaz (provided by Albilad Bank), Ersal (provided by Saudi Post and Alinma Bank), and Fawri (provided by Al Jazeera Bank). Yemeni banks, specifically Tadhamon Bank, Al-Kuraimi Islamic and Microfinance Bank, and Yemen Kuwait Bank (YKB), complete the transfer and pay out electronic remittances to recipients in Yemen. All three banks are licensed by the Saudi Central Bank to operate with

migrant workers and expatriates in Saudi Arabia observed between March 2020 and June 2021. The growing prevalence of official digital remittance services reflects the lower vendor fees charged by Saudi and Yemeni banks versus those charged by unofficial or informal service providers; the implementation of Saudi Arabia's digitalization strategy of financial services; partnerships between licensed money-exchange services and Saudi and Yemeni banks; and digital remittances provided directly by licensed money-exchange services.<sup>56</sup> Bolstered by the formalization of remittance services and the continued economic recovery in the aftermath of the pandemic, official data suggest that 2022 are estimated to be a record year for remittance inflows.

**Remittances sent through formal networks likely benefit financial service providers in IRG-controlled areas.** Although Yemeni migrant workers in Saudi Arabia are increasingly using official digital remittance services, estimates suggest that a still sizeable volume of remittances continues to be sent through informal channels. One of the main reasons is that Saudi Arabia caps the total value of remittances that an individual can transfer out of the

country as a percentage of their income. Remitters often opt to send additional remittances via unofficial channels to avoid detection.<sup>57</sup>

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Saudi banks and offer their respective electronic remittance services via mobile phone application technology (Tadhamon Pay by Tadhamon Bank, Kuraimi Express by Al-Kuraimi Islamic and Microfinance Bank, and Yeah Money by Yemen Kuwait Bank). These three Yemeni banks are also authorised to provide other formal remittance services in the form of either SWIFT transfers or as an official agent of Western Union, MoneyGram, and Express Money. For SWIFT transfers, the remitter must have an account with a Saudi bank that then processes the SWIFT transfer with the correspondent Yemeni bank. For Western Union and MoneyGram, the Yemeni banks operate as official agents of these global money transfer and remittance companies;" [https://www.acaps.org/sites/acaps/files/slides/files/20211015\\_acaps\\_yemen\\_analysis\\_hub\\_impact\\_of\\_remittances\\_on\\_yemens\\_economy.pdf](https://www.acaps.org/sites/acaps/files/slides/files/20211015_acaps_yemen_analysis_hub_impact_of_remittances_on_yemens_economy.pdf).

<sup>56</sup> Source: Saudi Arabia official government website; <https://www.my.gov.sa/wps/portal/snp/aboutksa/digitaltransformation>.

<sup>57</sup> This analysis was produced by World Bank staff and consultants based on key informant interviews conducted during July-September 2022.

## Costing the Conflict

**Since the start of the war, most economic analysis in Yemen has focused on broad macroeconomic indicators, the humanitarian crisis, and the destruction of infrastructure and capital.**

Relatively little attention has been paid to the current structure of the economy or its evolution since 2014. Data constraints limit the effectiveness of traditional growth-analysis methodologies, as official data are sparse and often inconsistent. The Central Statistical Office<sup>58</sup> (CSO) has been unable to collect data necessary to update key indicators since before the conflict escalated in 2015.<sup>59</sup> Survey data collected by international institutions and nongovernmental organizations is sometimes alleged to be manipulated by local vested interests.

**These data constraints are not insurmountable, but addressing them demands a more innovative and holistic approach to growth analysis.**

More data are being collected in Yemen, and at a higher frequency, than in other comparable contexts. However, statistics on economic aggregates after 2015 are based on traditionally sourced data that may not fully capture the economic transformation caused by the war. Given the limitations of standard analytical approaches in data-poor environments like Yemen's, the World Bank has sought

to triangulate estimates and projections wherever possible using remotely sensed data, humanitarian data, and extensive key informant interviews, especially at the sub-national level. While these approaches have limitations—for example, household surveys often have limited coverage in conflict-afflicted areas—taken together they provide a strong foundation for updated economic analysis.

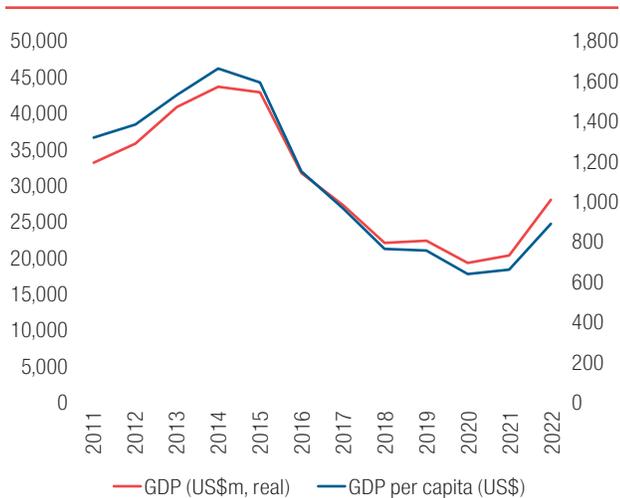
**While innovative methodologies can help overcome data limitations, their findings are subject to important caveats.**

Some of the data sources used in this CEM conflict with one another: for example, World Bank projections suggest that GDP has contracted sharply since the start of the war, yet remotely sensed nighttime lights suggest that economic activity has rebounded to pre-war levels. Similarly, official oil exports are much lower than an analysis of remotely observed gas flaring at oil production sites would indicate. Underestimated GDP and oil output figures coupled with persistently high poverty rates imply that inequality may be far more severe than official estimates show. While

<sup>58</sup> The CSO was based in Sanaa until 2022, when a separate Aden-based CSO was established.

<sup>59</sup> See, e.g., World Bank (2017).

**Figure 6** GDP and GDP Per Capita, 2011–2022



Source: World Bank staff estimates based on official figures and IMF data.

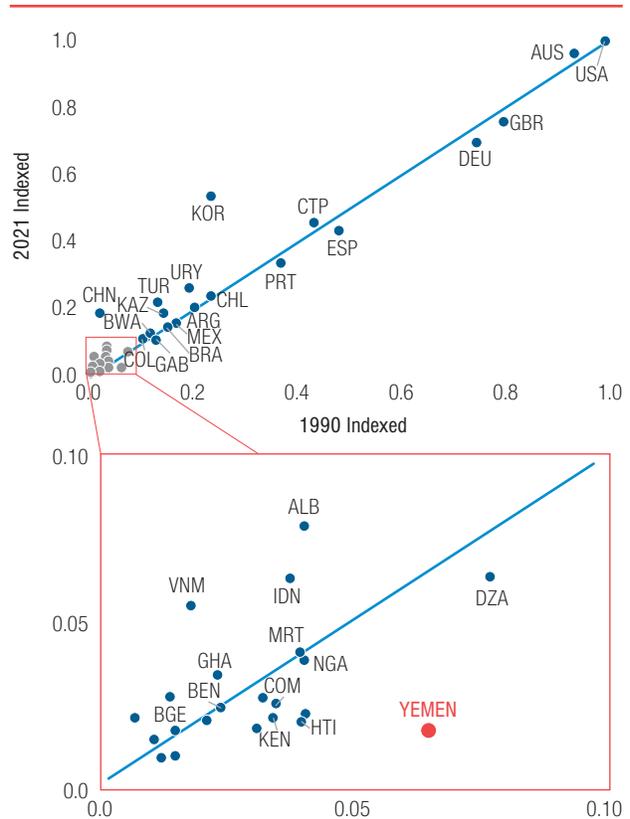
the analysis presented below is based on the best information available, its conclusions cannot be cited with absolute certainty.

## Collapse of Real Economic Activity and Productivity

**The war in Yemen has imposed an immense human and economic cost.** World Bank estimates<sup>60</sup> suggest that real GDP contracted by approximately 50 percent between 2011 and 2021. While analysis later in this report suggests these figures may overstate the contraction, the country's ability to produce and export oil and gas has clearly been diminished along with its ability to support a large share of households through public employment (see Figures 6).

**The conflict has catalyzed negative trends and reversed positive ones, reducing economic output and making future growth harder to achieve.** Economic literature identifies institutional quality and productivity growth in non-resource sectors as vital to the sustained development of commodity exporters. Even before the war, Yemen performed poorly in both areas, and since 2010 it has fallen further behind

**Figure 7** GDP Per Capita, Yemen and Comparators, 1990–2021 (% of U.S. GDP Per Capita)



Source: IMF, World Bank, IRG authorities.

its regional and structural peers. While the sharp drop in hydrocarbon production has had the greatest impact on GDP, several other factors have contributed to the decline in economic activity, including lower agricultural output, weakening institutional quality, and systematic interference in the private sector by rival factions.<sup>61</sup> Between 1990 and 2021, declining economic output caused Yemen's growth trajectory to diverge from other economies. In 1990, Yemen's per capita GDP was equal to about 7 percent of U.S. per capita GDP, but it has since fallen to just 2 percent. Some commodity-dependent economies,

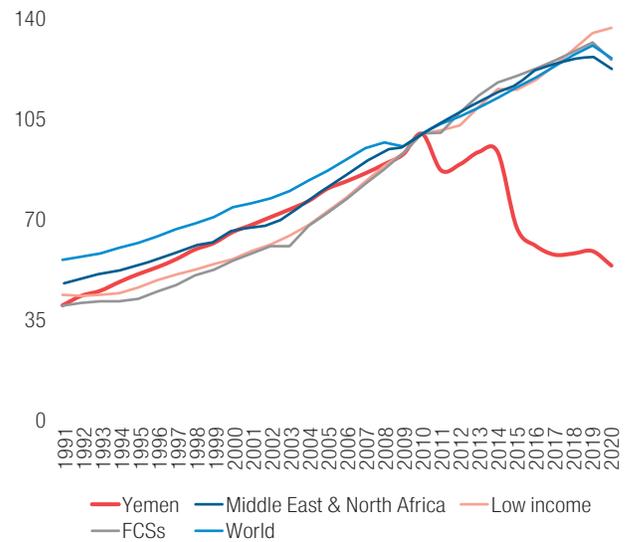
<sup>60</sup> Reflecting official exchanges with country authorities and based on figures in use also by the International Monetary Fund.

<sup>61</sup> FAO (2019); Favari et al. (2021); and ICG (2021). See also Figure 4 in Annex 3.

including Nigeria, Algeria, Botswana, Mauritania, and Mexico, also experienced decline relative to the United States. But others, such as Kazakhstan, Ghana, and Indonesia, remained in lockstep with more advanced economies (see Figures 7, 8).

**Remotely sensed data corroborate traditional growth estimates during the early years of the war but suggest a faster recovery in economic output.** Nighttime illumination is demonstrably correlated with overall economic activity and can be used as a proxy for GDP growth in situations where economic output is difficult to measure.<sup>62</sup> As the conflict escalated in March 2015, nighttime illumination dropped dramatically, a pattern that is broadly consistent with official statistics and pre-war World Bank estimates.<sup>63</sup> Light emissions fell by over two-thirds between February and May 2015 before gradually recovering in subsequent years and ultimately returning to pre-conflict levels in 2021. A regression analysis of nighttime illumination, GDP, and oil production shows a positive, statistically significant relationship across all specifications, suggesting that every 1 percent change in illumination reflected a 0.35 percent change in GDP.<sup>64</sup> This finding is supported by established studies by Henderson (2012) which use panel data for 72 countries, and find this elasticity to be in a similar range, at 0.265 (see Table 2).

**Figure 8** Real GDP Index (2010 = 100)



<sup>62</sup> *Yemen in Transition*, Henderson et al, 2011.

<sup>63</sup> This is corroborated by both Fetzer (2017) and World Bank (2017).

<sup>64</sup> This finding is supported by established studies by Henderson (2012) which use panel data for 72 countries, and find this elasticity to be in a similar range, at 0.265. Henderson used panel data for 72 countries and found a growth elasticity of nighttime illumination of 0.265.

**Table 2** OLS Regression Analysis of Nighttime Illumination, GDP, and Oil Production

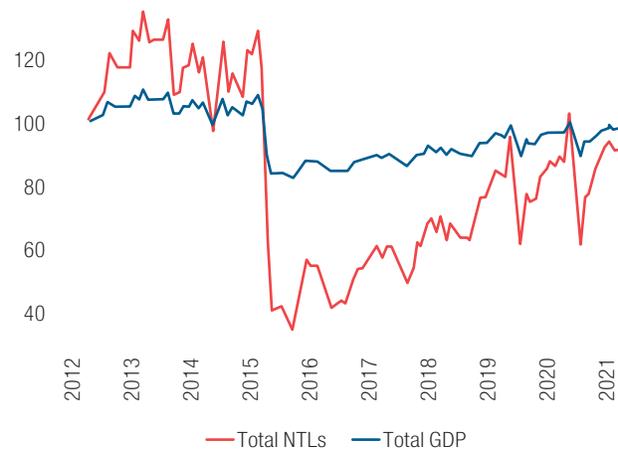
Dependent Variable:	(1) log(RGDP)	(2) RGDP	(3) Oil Prod.
	(1) Index	(2) Index	(3) Mb/d
Independent Variable	(1)	(2)	(3)
log(NTLs)	0.349*** (0.002)		
NTLs		0.0357** (0.004)	
Flaring NTLs			0.648*** (0.025)
Observations	23	23	113
R <sup>2</sup>	0.799	0.788	0.856

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

**Remotely sensed data indicate that the collapse in output between 2015 and 2016 was driven by falling oil production, the departure of extractive-industry firms, and the overall impact of the civil war.** The decrease in nighttime illumination was concentrated in Sanaa and in the oil-producing western regions. But nighttime illumination data show signs of a faster-than-understood economic recovery from 2017 to 2021, which may reflect increased oil production and a resurgent private sector (see Figure 9).

**Satellite-based data suggest that oil production is higher than most official estimates.** The brightness of gas-flaring sites was relatively stable before the conflict, but flaring levels plunged in 2015 as foreign oil companies withdrew. However, production appears to have recovered more quickly than official data suggests. Oil production estimates based on nighttime illumination consistently exceed those provided by the United States Energy Information Administration (EIA). These findings are corroborated by large differences in fuel imports and exports between Yemen and its trading partners. Although modest disparities are common when using mirror data, in this case the magnitude appears to be in the hundreds of millions of US

**Figure 9** Estimated Economic Activity Based on Nighttime Illumination, 2012-2021

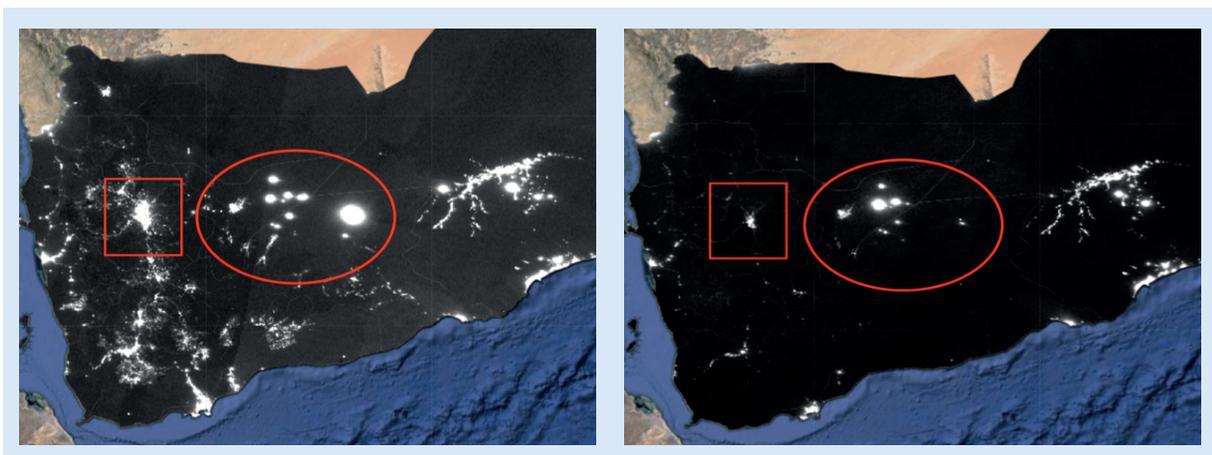


Source: WB staff calculations.

dollars over several years, which cannot reasonably be explained by statistical errors or methodological differences (see Figure 10).

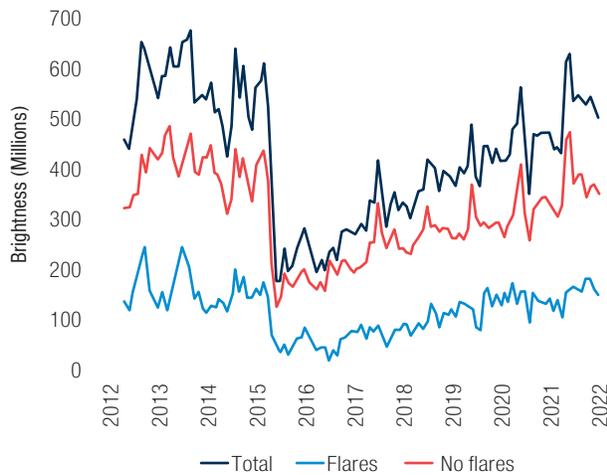
**Emergency food-security assessments reveal the household-level impact of slowing economic activity.** Most of the population has experienced a substantial decline in living

**Map 2** Nighttime Illumination, February 2015 (Left) and May 2015 (Right)



Source: WB staff, based on VIIRS satellite data.

**Figure 10** Monthly Gas Flaring and Non-Flaring Illumination, 2012-2022



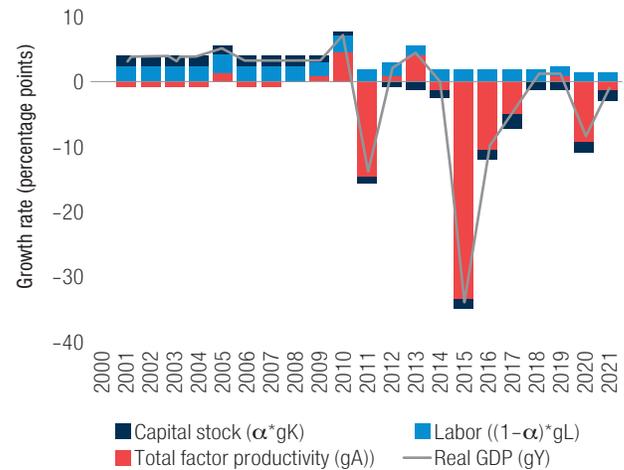
Source: WB staff calculations.

standards since the start of the war. By June 2016, more than half of the population was facing emergency or crisis levels of food insecurity.<sup>65</sup> The World Food Program's November 2016 Emergency Food Security and Nutrition Assessment (EFSNA), the country's first major food-security assessment based on in-person interviews, estimated that 65 percent of the population had poor or borderline food consumption, a 57 percentage-point increase from the World Bank's 2014 Household Budget Survey.<sup>66</sup> While the rate of poor or borderline food security fell to around 36 percent in February 2019,<sup>67</sup> a phone survey conducted by the World Bank in September/October 2022 found that this share had risen to 50 percent.

**Productivity—a key driver of wealth and job creation—was already weak before the war, and plummeted as the conflict intensified.**

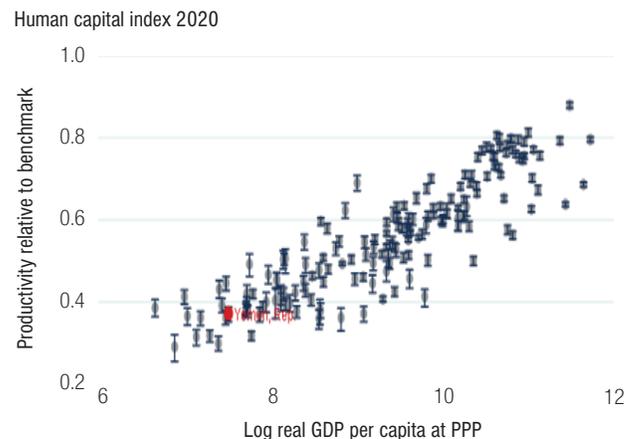
Limited innovation and the inefficient allocation of resources contributed to low levels of total factor productivity (TFP), which deteriorated further after 2014. The destruction of fixed capital exacerbated negative growth dynamics, and the conflict badly eroded labor productivity. According to the World Bank's Human Capital Index (HCI), a child born in

**Figure 11** Contribution to Potential GDP Growth (Solow Decomposition)



Source: WB staff calculations.

**Figure 12** Human Capital Index Scores, 2020



Source: World Bank Human Capital Index.

<sup>65</sup> UN (2016). These estimates are based on the UN's Integrated Phase Classification (IPC) system, which is designed to estimate the severity of food emergencies.

<sup>66</sup> EFSNA (2017); World Bank (2017a). The 2014 estimates are derived from a longer food consumption module in the 2014 Household Budget Survey.

<sup>67</sup> According to the latest publicly available report from the WFP's mobile Vulnerability Analysis and Mapping survey.

Yemen in 2020 is expected to reach just 37 percent of what her lifetime productive potential would have been had she enjoyed a complete education and full health. Yemen's HCI score is below the average for MENA and slightly below the average for low-income countries worldwide (see Figures 11, 12).

**The worsening humanitarian crisis has further dampened Yemen's long-term outlook.** The deterioration of physical and human capital diminishes future output and earnings. The war's adverse effects on nutrition, health, and education, as well as the psychological and physical trauma associated with the conflict, will be felt for generations.<sup>68</sup>

**Since the conflict escalated in March 2015, fuel shortages have been added to a growing list of growth and productivity bottlenecks.** Legal competition over control of the economy, and of the fuel sector specifically, was also pursued through regulatory efforts. Decree 75 increased oversight of fuel imports, while Decree 49 required the payment of duties and taxes before shipments entered Yemeni ports.<sup>69</sup> Disagreements among IRG and Houthi authorities have repeatedly prevented fuel vessels from docking at the Port of Al Hodeida, resulting in reported fuel shortages in northern Yemen.<sup>70</sup> Supplied by imports from the south, a parallel fuel market has emerged, with pump prices up to three or four times higher than the national average. Elevated global oil prices have exacerbated fuel shortages, further suppressing economic activity while eroding household welfare.

**Climate change poses additional threats to productivity and growth.** According to the Notre Dame Global Adaptation Initiative (ND-GAIN) Index<sup>71</sup> for 2019, Yemen is the 22<sup>nd</sup> most vulnerable country and the 14<sup>th</sup> least ready country to adapt to climate change. Recurrent flooding has extensively damaged roads and bridges, severely restricting the movement of people and goods in several governorates. These supply-chain disruptions sharply increased prices for essential commodities. Over 75 percent of the population is engaged in farming or pastoralism, and their

livelihoods depend on favorable climatic conditions.<sup>72</sup> Aden is ranked as the world's 6<sup>th</sup> most vulnerable city to rising sea levels and storm surges.<sup>73</sup> Compounding its exposure to natural hazards, weak governance impairs Yemen's ability to adapt to climate change.

**A geospatial data analysis conducted for this report confirms that Yemen's territory has become increasingly prone to climate-related shocks.** Cross-referencing the Palmer Drought Severity Index (PDSI) with precipitation data at the district level reveals extreme fluctuations in rainfall (see Figure 13). From 2014 to 2015, the climate was very dry, and several districts ended this phase at < -5 on the PDSI. From 2016 to 2017, the climate was dry-to-normal, with more precipitation in IRG-controlled territories. From 2018 to 2020, precipitation levels rose rapidly, particularly in areas controlled by the IRG. These alternating periods of drought and flooding likely weakened agricultural productivity, exacerbating the overall decline in productivity across the economy (see Map 3).

**Yemen also faces acute local environmental risks.** Since the beginning of the conflict, the UN has sought to address the status of the FSO Safer, an aging oil tanker that has not been inspected or undergone maintenance since 2015. The Safer may contain up to 1 million barrels of oil. According to the International Maritime Organization, a spill from the Safer "would be a major humanitarian and environmental disaster. A significant spill is likely to heavily

<sup>68</sup> *Assessing the impact of the war*, Moyer et al., UNDP, 2019.

<sup>69</sup> Cfr. *Brokering a Ceasefire in Yemen's Economic Conflict*, International Crisis Group (ICG), January 2022.

<sup>70</sup> As a part of the recent truce, it was agreed that 18 fuel ships would enter Hodeidah, starting April 2022.

<sup>71</sup> ND-Gain <https://gain.nd.edu/our-work/country-index/rankings/>.

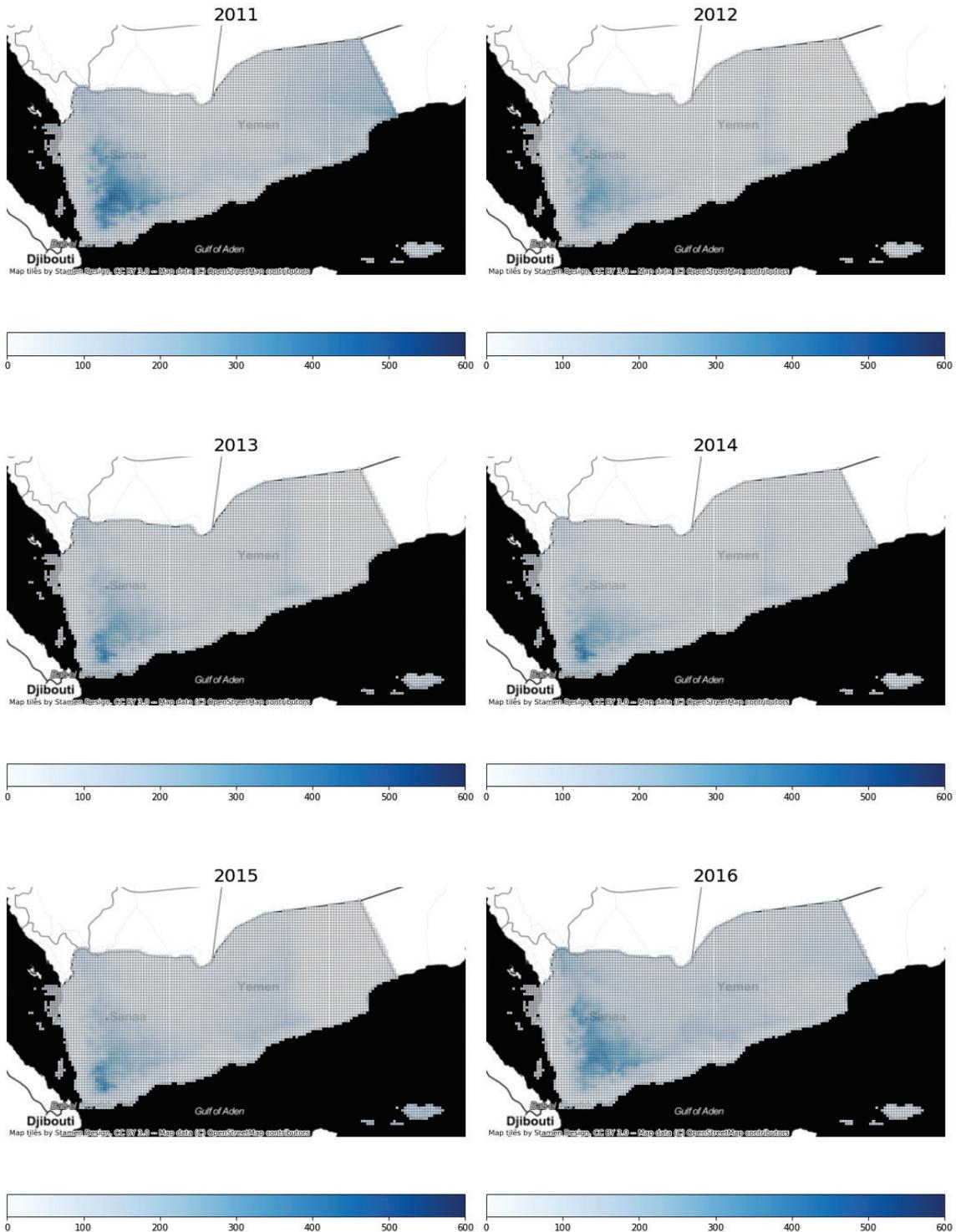
<sup>72</sup> UNDP; see <https://www.adaptation-undp.org/explore/arab-states/yemen>.

<sup>73</sup> *Climate Change and the Future Impacts of Storm-Surge Disasters in Developing Countries*, Center for Global Development, 2009.

**Map 3**

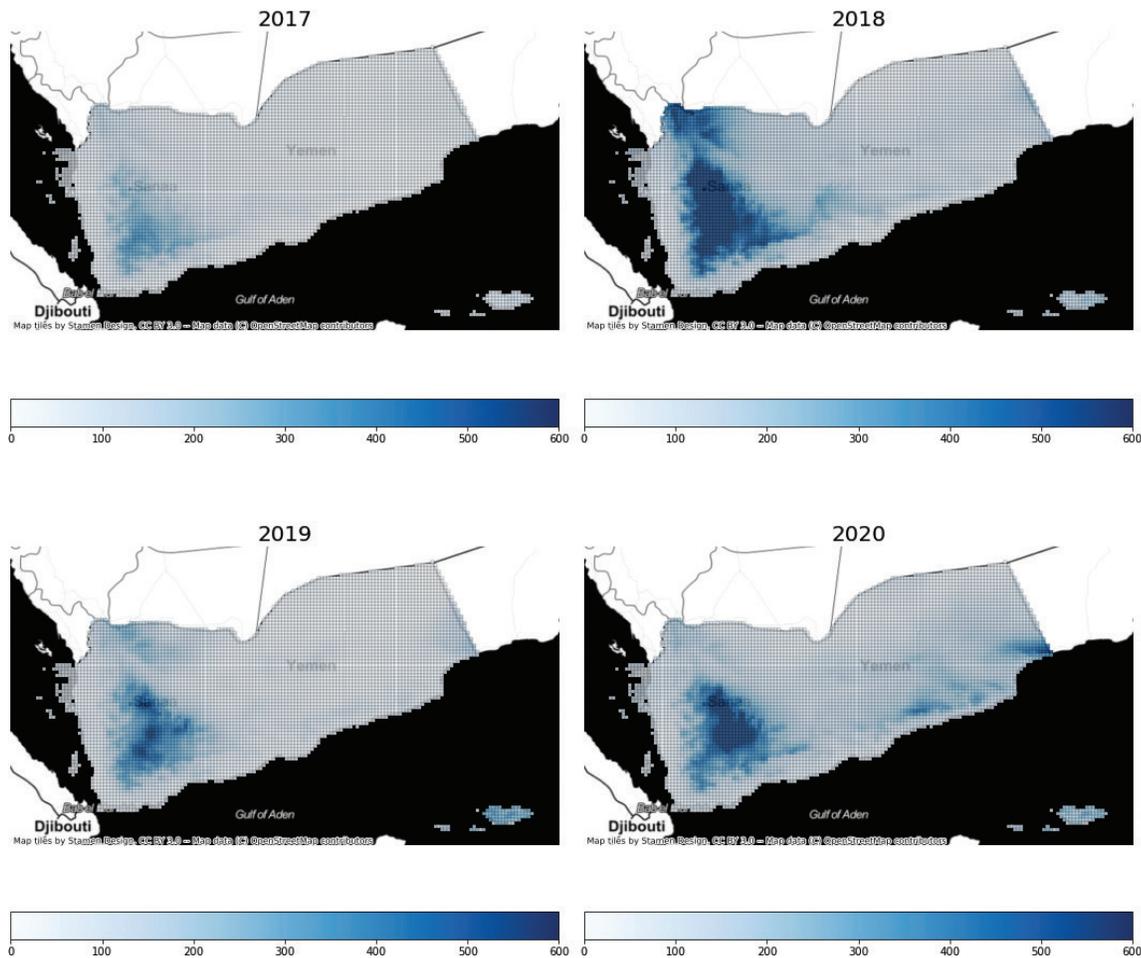
**Precipitation Data at the District-Level. Millimeters (average of 5km Input Pixels, Summed for the Year) in a Regular 10km Grid**

Yemen precipitation 2011-2020



(continued on next page)

### Map 3 Precipitation Data at the District-Level. Millimeters (average of 5km Input Pixels, Summed for the Year) in a Regular 10km Grid *(continued)*



Source: WB staff analysis and graphic representation based on satellite data.

impact the north-western coastline of Yemen, including the Yemeni Islands in the Red Sea, and Kamaran Island in particular. There is also a potential for oil to drift and impact neighboring countries, including Djibouti, Eritrea and Saudi Arabia.<sup>74</sup>

**The pandemic further damaged Yemen's economy.** A year and a half after the global rollout of COVID-19 vaccines, only about 1 percent of the population had received a dose—one of the world's lowest vaccination coverage rates.<sup>75</sup> In the areas under Houthi control, where roughly 80 percent of the population resides, COVID-19 vaccines are not allowed. According to official statistics,<sup>76</sup> only about

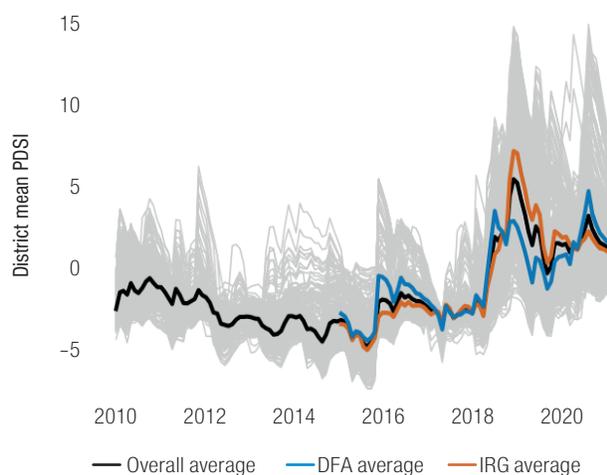
12,000 COVID-19 cases and 2,150 deaths have been reported in Yemen since 2020, but these figures are clearly underestimates. Years of conflict have badly damaged Yemen's healthcare facilities, and a large share of medical professionals have left the country or stopped practicing. COVID-19 testing is expensive by local standards, and limited transportation infrastructure reduces access to testing.

<sup>74</sup> FSO SAFER oil spill risk – addressing the threat, International Maritime Organization, 23 September 2022.

<sup>75</sup> Source: WHO Eastern Mediterranean Regional Office; <https://twitter.com/WHOEMRO/status/1559131563409002496>.

<sup>76</sup> Source: WHO.

**Figure 13** Palmer Drought Severity Index by District



Source: authors computations. Values < 0 indicating drier climates with values < -4 indicating extreme drought, and with values > 0 indicating wetter climates and values > +4 indicating extremely wet climates.

### Bifurcated Monetary Policy

**Of all the economic challenges posed by the conflict, the bifurcation of monetary policy and foreign-exchange flows and the monetization of fiscal deficits are among the most consequential.**

In 2016, the IRG moved the central bank's headquarters to Aden. CBY-Aden was, in effect, a newly formed institution that retained access to markets and monetary instruments but lacked adequate foreign-exchange liquidity. Meanwhile, Houthi-controlled Sanaa remained Yemen's banking and trading center, and due to the larger population living in Houthi-areas it benefitted from greater remittance inflows and aid-agency payments executed via the formal banking system.<sup>77</sup> The rial briefly stabilized in early 2019, following a large deposit of hard currency at the CBY-Aden by Saudi Arabia.<sup>78</sup> As this deposit was gradually depleted, the Houthis announced that it would no longer accept the new banknotes printed by the IRG, effectively severing monetary policy between the two regions (see Figure 14).

**Faced with mounting financial pressures, the IRG resorted to monetary financing of the**

**fiscal deficit.** The collapse of oil production and exports in 2015 placed Yemen's fiscal and monetary position under significant pressure. The country's overall fiscal balance worsened, as the deficit widened from a pre-war average of -5.5 percent of GDP<sup>79</sup> to an average of -6.8 percent.<sup>80</sup> The authorities increasingly turned to monetary financing, the CBY-Aden's claims on the IRG increased by an average of 36 percent per year between 2015 and 2021, while currency in circulation rose by 24 percent per year.<sup>81</sup> Hard-currency reserves were quickly depleted, prompting the central bank to abandon the *de facto* dollar reference, and macroeconomic stability deteriorated amid rapid inflation and currency depreciation. As the conflict has progressed, Yemen's economy increasingly developed into a *de facto* dual economy, with IRG- and Houthi-controlled areas effectively acting as separate national economies. This split is most clearly demonstrated in the bifurcation of the exchange rate in IRG and Houthi areas. Figure 14 shows that following the split of the currencies, the rial continued to depreciate in IRG-controlled regions while remaining relatively stable in Houthi-controlled regions.

**Currency depreciation has played a major role in Yemen's burgeoning humanitarian crisis.**<sup>82,83</sup> The average cost of the basic foods<sup>84</sup> Yemeni

<sup>77</sup> World Bank and IMF (2021).

<sup>78</sup> ACAPS (2020).

<sup>79</sup> Calculated over the period 2011–2014.

<sup>80</sup> Calculated over the period 2015–2020.

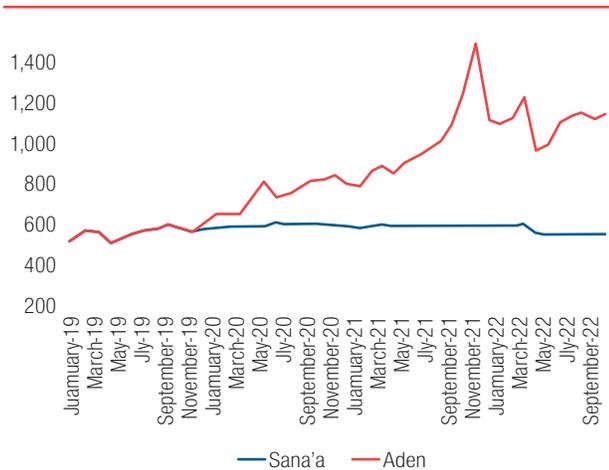
<sup>81</sup> WB staff calculations based on national authorities and IMF data.

<sup>82</sup> IPC (2018); IPC (2020); Favari et al. (2021).

<sup>83</sup> In the 2018 currency crisis, the entire country was affected, but in the current currency crisis that began in 2020 and was continuing as of early 2022, only the approximately one-third of the population in IRG-controlled areas are affected by the currency crisis. However, there are other factors that are pushing the entire country towards a humanitarian crisis, including increases in global food prices and declines in humanitarian assistance to Houthi-controlled regions (e.g., Favari et al. 2021).

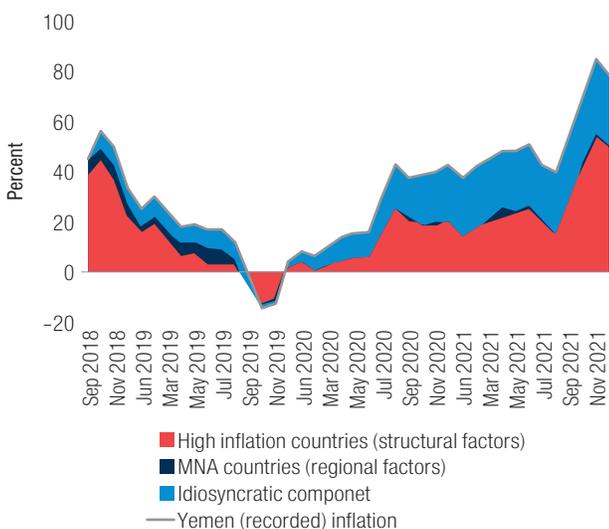
<sup>84</sup> As defined by the WFP at [www.wfp.org/wfp-food-basket](http://www.wfp.org/wfp-food-basket); including grain staple such as wheat flour or rice, a bean or legume, vegetable oil, sugar, and salt.

**Figure 14** Average Rial-to-Dollar Exchange Rate, January 2019 – October 2022



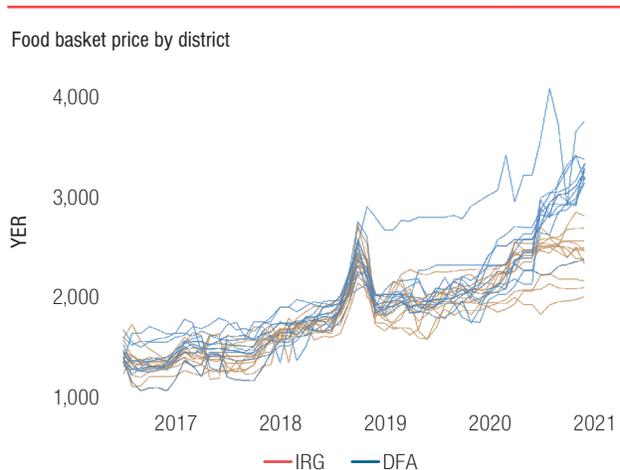
Sources: Country authorities, IMF and WB data.

**Figure 16** Decomposition of Inflation



households rely upon has increased substantially in every district since 2015. In 2016, the average price for the basic food basket was roughly YRI 1,400, but over the next few years it doubled or more in most districts, reaching as high as YRI 4,000 in Socotra, for example. The rising cost of living is closely con-

**Figure 15** Prices for the Basic Food Basket by District, 2016–2021 (overlapping)



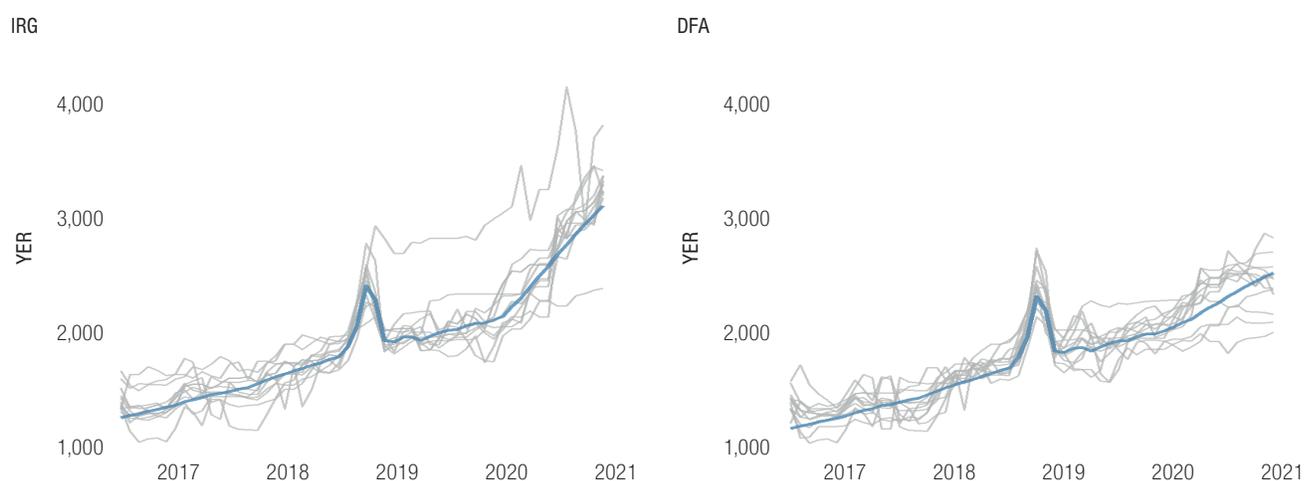
nected to the bifurcation of the banking sector (see Figure 15).

**A factor-decomposition analysis of inflation confirms the central role that the rial's depreciation has played in raising the cost of living.** Between the second half of 2016 and 2022, a 63 percent correlation was observed between changes in the rial-to-dollar exchange rate and consumer price inflation. This strong pass-through effect is due to Yemen's reliance on imports, the prevalence of exchange-rate-based pricing, and the progressive loss of confidence in the local currency. Decomposing changes in inflation<sup>85</sup> into regional, structural-comparator, and country-specific effects demonstrates that whereas in previous years inflation was primarily caused by external factors, since 2019 inflation has increasingly been driven by internal factors, including but not limited to monetary financing of the fiscal deficit (see Figures 16, 17).

**The bifurcation of monetary policy has intensified price divergence and economic differences between IRG- and Houthi-controlled territories.** Exchange-rate differentials have weakened purchasing

<sup>85</sup> Based on methodology developed by Krusper (2012) based on Stock and Watson (2002).

**Figure 17** District-Level Food-Basket Prices in IRG and Houthi-Controlled Areas



Note: Modeled prices are shown in blue. Observed prices for each district are shown in grey.

**Table 3** US Dollar Price Changes for Basic Food Items in Yemen and Comparator Countries, 2020–21

Column1	Djibouti	Iraq	Lebanon	Oman	Syria	Yemen	Sana'a	Aden
Wheat	-1%	18%	-28%	26%	-31%	38%	43%	43%
Wheat Flour	5%	5%	32%	7%	8%	50%	67%	53%
Rice	-3%	0%	-12%	1%	-11%	4%	20%	4%
Lentils	22%	17%	28%	28%	22%	74%	91%	71%
Onions	46%	-6%	-20%	10%	10%	-20%	-12%	-21%
Beans	42%	7%	-1%	23%	4%	68%	83%	67%

Source: WFP and WBG staff calculations.

power and distorted relative prices, contributing to inefficient factor allocation and intensifying inequality.

**Currency devaluation, however, does not represent the whole story of Yemen's cost-of-living and humanitarian crises: structural rigidities in price determinants also play a significant role.** The cost of goods in dollar terms has been rising faster in Yemen than in other countries. When comparing price changes for six essential food items during 2020–21 across a representative comparator group of countries,<sup>86</sup> Yemen experienced the greatest price increase for five out of six items.<sup>87</sup> Higher structural

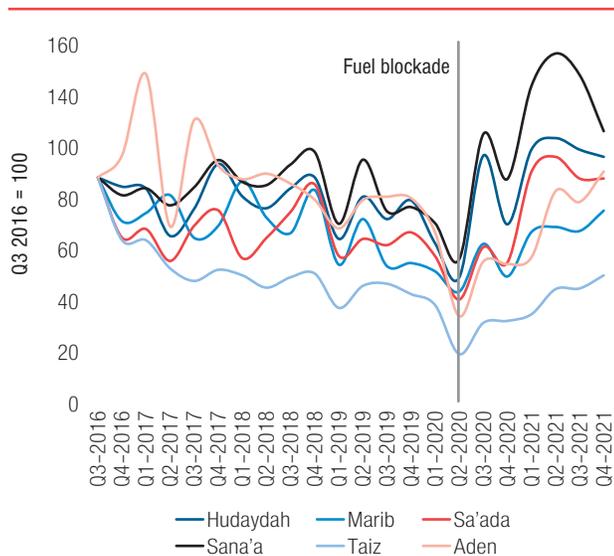
prices reflect trade isolation, friction in maritime and inland trade, elevated insurance and transportation costs, and a potential increase in market concentration due to Yemen's challenging operating environment (see Figures 18, 19).

**Although currency crises can affect a population through several channels (beyond prices), it**

<sup>86</sup> The group is composed of three MNA FCV countries (Iraq, Lebanon, and Syria) and two neighboring countries (Djibouti and Oman).

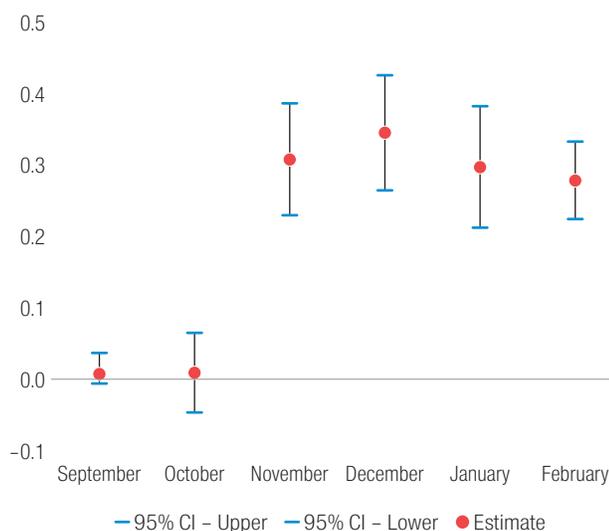
<sup>87</sup> Excludes one outlier.

**Figure 18** Quarterly Real Gasoline Prices in Urban Areas, 2016–2021



Source: WFP data and WB Staff calculations.

**Figure 19** Changes in Fuel Prices Following the Announced Air and Sea Blockade



Notes: This figure presents the change in fuel prices leading up to and following the complete blockade in Nov 2017. The estimates represent the percentage difference in prices relative to average prices in Aug 2017.

is unlikely that many Yemenis living in IRG-held regions have sustainably gained from the currency depreciation. Remittances from abroad and internal remittances from Houthi-controlled areas increased in value as the rial depreciated in IRG-held regions. Workers and businesses producing export goods could have benefited from relative price changes in foreign markets.<sup>88</sup> However, most workers in IRG areas are either underemployed or dependent on fixed government salaries.<sup>89</sup> A recent phone survey conducted by the World Bank found that the main source of income for 64 percent of households is wages, not remittances or export-oriented cash crops.

**The monetary situation in IRG areas showed signs of improvement in late 2021.** A successful new foreign-exchange auction mechanism, a reshuffling of the central bank's management, and a Presidential Decree requesting an audit of central bank operations since 2016 have bolstered confidence in the government's capabilities and oversight of monetary policy, albeit starting from a low base. Renewed attempts at macroeconomic stabilization helped relieve pressure on the exchange rate and caused the rial in Aden to appreciate to about YRI 1,100:US\$1 by the beginning of 2022. During the course of 2022, the announcement of a US\$3.3 billion dollar package by Saudi Arabia and the United Arab Emirates had an immediate positive effect on the exchange rate, though these gains were partially reversed when the promised funds failed to materialize. The subsequent stabilization of the rial in IRG areas may also be due in part to the growing formalization of remittances from Saudi Arabia to Yemen and the IRG's increased pressure on currency traders and banks to comply with local regulations. However, some of these benefits may be zero sum for Yemen as a whole: for example, greater remittances into IRG areas may deplete hard currency in Houthi regions.

<sup>88</sup> See Chen (2006) for an example where a subset of workers benefitted from Indonesia's currency crisis in the late 1990s, and a subset were especially harmed.

<sup>89</sup> *Yemen: 2019 Humanitarian Needs Overview*, OCHA, 2019.

## The Weaponization of Trade

**Conflict escalation has at times been accompanied by the conflict parties' imposition of barriers to movement of key commodities, including a partial blockade of the ports that supply Houthi-controlled regions.** The strength and targets of these barriers have changed over time. At times, maritime inspections to verify that commercial shipments do not contain weapons have restricted imports, and armed forces have periodically blocked fuel distribution within Yemen.<sup>90</sup> Although it is difficult to precisely gauge the intensity of the disruption to supply chains, reports suggest that immediately following the escalation of the conflict in 2015 imports in Hodeidah—a port that supplies nearly the entirety of Houthi-controlled Yemen—were immediately reduced to 40 percent of pre-conflict levels.<sup>91</sup> This partial blockade was particularly harmful, as the country imported approximately 90 percent of food staples like wheat, and 100% of its rice, prior to the conflict.<sup>92</sup>

**While data constraints make it difficult to precisely measure how the trade barriers imposed over the course of the conflict affected prices, behavioral changes provide important evidence.**

After Houthi forces took credit for a missile strike on Riyadh's international airport, the Saudi-led coalition backing the IRG announced a nationwide air and sea blockade in November 2017.<sup>93</sup> Though the announced blockade lasted for just eight days in IRG areas and 12 days in Houthi areas, and trade data show that shipments to key ports continued, households and markets adopted coping strategies in anticipation of shortages and high prices. Fuel prices rose in all parts of the country in response to the announcement and did not return to earlier levels once the blockade ended. However, there was little immediate impact on food prices, which experienced small month-to-month increases similar to previous changes during the conflict.<sup>94</sup> This pattern indicates that fuel prices may be especially sensitive to market-moving information, with significant price

changes occurring even when supply and demand dynamics are not meaningfully affected.

**The announced blockade had the greatest impact on better-off households, which tended to spend more on fuel.** Better-off households experienced the greatest deterioration in food access after the blockade was announced. At the time, approximately one-quarter of Yemeni households used generators as their primary electricity source, and this share was highest among households with adequate access to food. By contrast, households with inadequate access to food were unlikely to spend money on fuel. Combined, these patterns suggest that large changes in fuel prices are more likely to affect better-off households. Some types of fuel spending, such as for generators or to reach jobs and basic services, may be price inelastic, at least in the short term, and households using fuel would experience large short-term increases in the share of resources devoted to fuel. In such an event, these better-off households might have to adjust their food consumption to cope until they can pivot from fuel consumption over time.

**Individual events can impact price levels even if they do not directly disrupt supply.** For example, during IRG-backed military advances on the Houthi-controlled port of Hodeida in 2018, food prices started to increase rapidly nationwide. These increases peaked in October, clearly coinciding<sup>95</sup> with a spike in reported conflict fatalities. The offensive in Hodeida started in June 2018<sup>96</sup> and was followed by an increase in commodity prices in July. A UN-sponsored truce was signed in mid-December,<sup>97</sup> and prices returned to the baseline in January

<sup>90</sup> *Consequences of Forced Displacement in Active Conflict*, Shandon, Favari et al., 2021.

<sup>91</sup> *In blocking arms to Yemen, Saudi Arabia squeezes a starving population*, Gebrekidan and Saul, 2017

<sup>92</sup> WFP (2012).

<sup>93</sup> *World Report 2017: Yemen*, Human Rights Watch (2017).

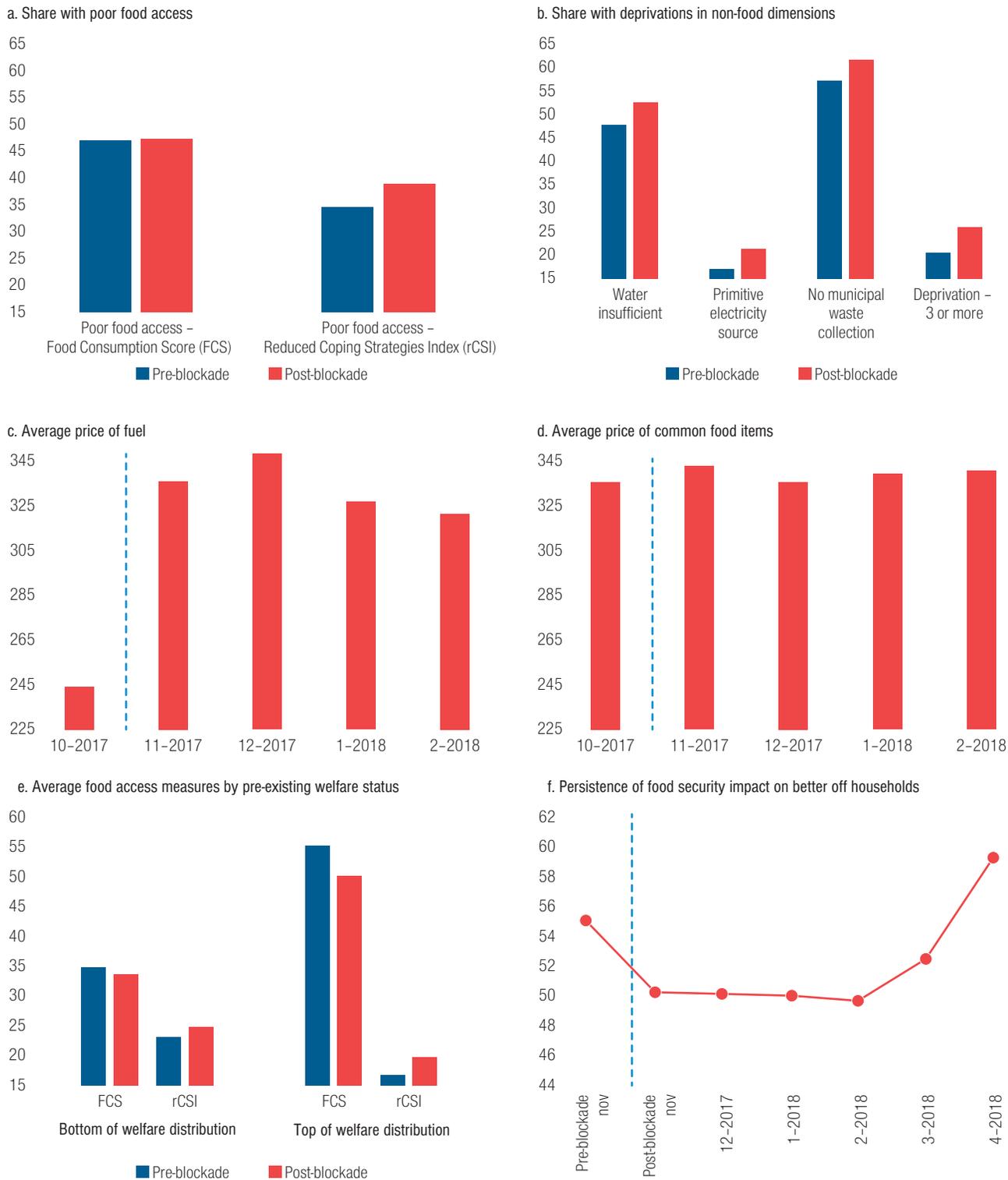
<sup>94</sup> Tandon and Vishwanath (2020).

<sup>95</sup> Within a 1-month lag from each other.

<sup>96</sup> *The Wall Street Journal* (2018, June 13).

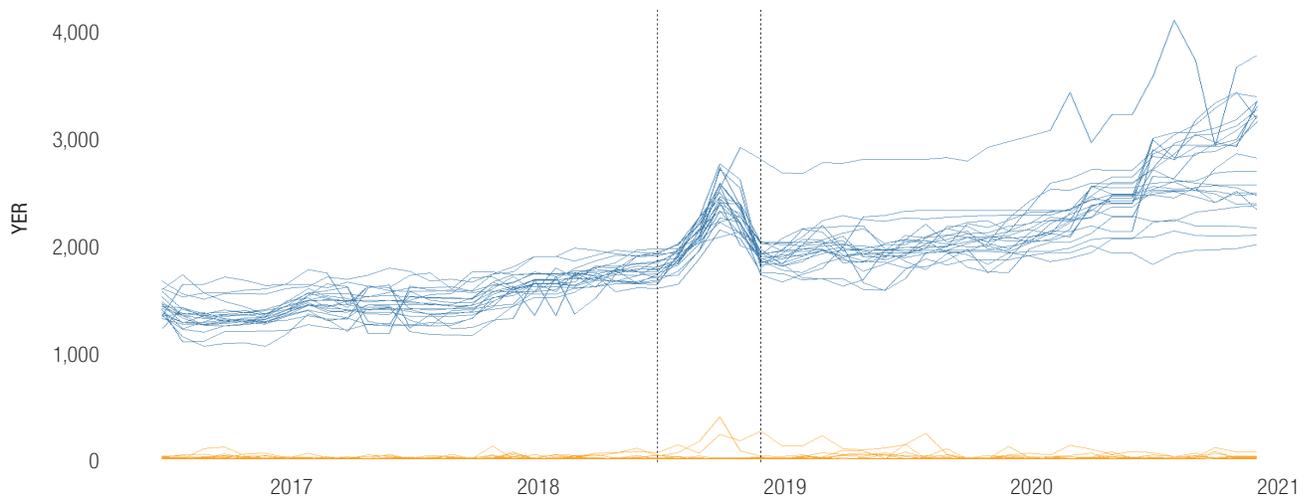
<sup>97</sup> *The New York Times* (2018, December 13).

**Figure 20** The Impact of the Announced Air and Sea Blockade



Notes: This figure reproduces key findings from Tandon and Vishwanath (2020) and Favari et al. (2021), which documents how wellbeing and markets were impacted by the complete air and sea blockade implemented in November 2017. All figures are the authors' calculations using the monthly WFP mobile phone surveys.

**Figure 21** District-Level Food-Basket Prices (blue) and Reported Fatalities (orange)



Note: Increased fatalities between Jul 2018 and Dec 2018 (dashed lines) coincide with the port of Hodeidah conflict.

2019. Traders across Yemen, not just in Houthi areas, appear to have anticipated future supply shortages and increased prices accordingly (see Figures 20, 21).

**Other factors that may have contributed to price increases, including alleged price manipulation by authorities in Houthi-controlled regions,<sup>98</sup> are more difficult to assess. But some general effects of price increases can be inferred.** The diversion of imports to more distant ports across the front lines of the conflict further increases transportation costs, albeit in many cases not to the extent that explains price increases in Houthi areas.<sup>99</sup> In a country without a functioning electric grid, high fuel prices limit the ability of businesses and households to rely on diesel generators, which provide more reliable energy than solar panels. In addition, businesses are forced to pay higher costs for intermediate inputs, further diminishing the competitiveness of domestic goods and services.<sup>100</sup>

### Agricultural Shifting Production Patterns

**Shifting production patterns towards cash commodities are also present in the agricultural**

**sector.** These shifts in environmental factors and production patterns are less obvious but have contributed to the rising cost of living. Higher food prices may reflect a shift in cultivation from food crops to qat, a mild stimulant widely consumed across Yemen. Machine-learning models and remotely sensed data enable an estimate of changes in qat cultivation areas in selected Yemeni regions from 2016 to 2021, revealing that the area devoted to qat increased by over 40 percent during the period. Figure 22 (below) shows the range of qat area changes, as a percent change from the baseline (indexed to 100) in 2016. While estimates vary at the district level, the overall trend is clear, as the median increase is 80 percent.

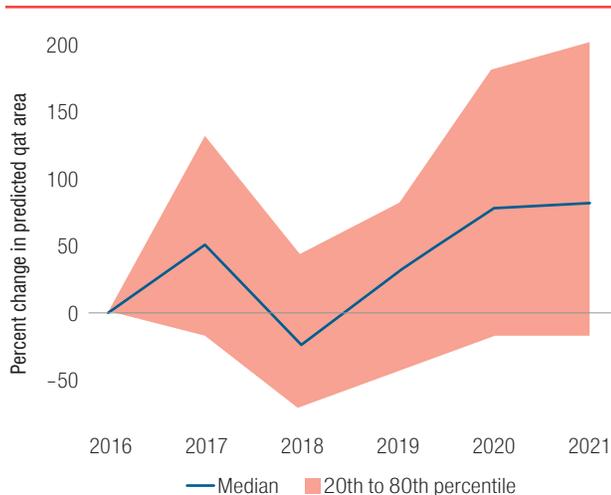
**Qat cultivation has expanded faster than overall cultivation, suggesting that Qat is expanding at the expense of food crop lands.** While qat cultivation grew by 40 percent in the selected governorates, total cropland increased

<sup>98</sup> *How Yemen's War Economy Undermines Peace Efforts*, International Crisis Group, 2021.

<sup>99</sup> ACAPS (2020).

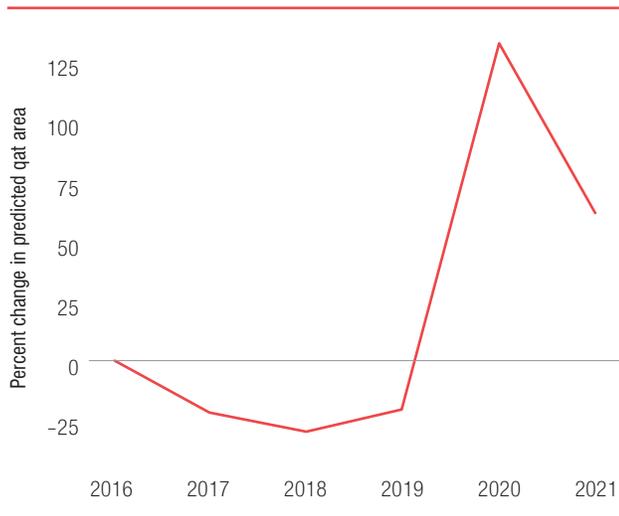
<sup>100</sup> Favari et al. (2021).

**Figure 22** Changes in the Area Under Qat Cultivation in Nine Selected Governorates



Note: Changes are shown as a percent deviation from the baseline (indexed to 100) in 2016. 30m pixel predictions for each district were aggregated into an average for the nine selected governorates.

**Figure 23** Qat Cultivation in Otmah District, Dhamar



by 22 percent.<sup>101</sup> In relative terms, qat plantations expanded from 16 percent of total crop area in 2016 to roughly 20 percent in 2020. The figure below shows the trend for Otmah district, in the Dhamar

governorate, which was independently identified by several local Yemeni experts as a major area of qat production. In this case, the increase has been massive, as our model predicts a doubling of qat cultivated areas in the district (see Figures 22, 23).

**Qat use and production on such a massive scale likely decreases Yemen's economic productivity.** While it is reasonable to assume that increased Qat production has a positive effect on overall economic output—since the value added of the qat is likely higher than the agriculture plantations that would have theoretically otherwise been cultivated—Qat poses risks for large productivity losses, hinging on significant health risks and lack of basic nutrition. While data limitations do not allow for precise estimates of qat consumption, it is possible to assume that an increase in qat production equates to an increase in qat use. Considerable amounts of anecdotal evidence suggest that agricultural land is being converted from food crops to qat plantations at a large scale, reducing the domestic food supply while consuming significant water resources in an already severely water-scarce environment.

### Transportation and Mobility Constraints

**Prior to the conflict, Yemen's road network was basically adequate, and its scope and quality was improving.** Internal transport corridors expanded significantly after the unification of Yemen in 1990.<sup>102</sup> By 2015, the paved road network had more than tripled to about 17,000 kilometers

<sup>101</sup> Cropland estimates come from the Moderate Resolution Imaging Spectroradiometer (MODIS), a group of satellites orbiting around the Earth, viewing the entire planet's surface once every 1 to 2 days, and acquiring data on land, oceans, and the lower atmosphere. NASA Website, <https://modis.gsfc.nasa.gov>.

<sup>102</sup> According to data from Yemen's Public Corporation for Roads and Bridges, after reunification, the country counted 5,000 kilometers of asphalt roads, 2,100 gravel roads, and 44,000 dirt roads.


**Table 4** Paved Roads, Population, and Land Area by Governorate, 2015

Governorate	Paved Roads in KM	Population (2015 Est.)	Approximate Area in KM2
Abyan	535.9	590,977	21,939
Aden	211.0	818,004	1,114
Ad Dali'	238.4	637,285	4,786
Al Bayda	654.5	778,013	11,193
Al Hudaydah	1176.5	2,934,568	17,509
Al Jawf	415.4	595,542	30,620
Al Mahrah	960.0	120,987	122,500
Al Mahwit	403.1	668,746	2,858
Amran	1012.0	1,188,300	9,587
Dhamar	910.5	1,794,719	10,495
Hadramawt	2866.5	1,405,552	191,737
Hajjah	750.7	1,995,789	10,141
Ibb	1123.9	2,867,076	6,484
Lahij	603.6	979,590	15,210
Ma'rib	443.7	322,224	20,023
Raymah	235.9	531,421	3,442
Sa'dah	548.3	938,734	15,022
Sanaa (incl. Amanat al Asimah)	1921.4	3,653,000	15,178
Socotra	(Socotra was part of Hadramawt in 2015)		2,359
Shabwah	1086.7	636,117	47,728
Taiz	1202.3	3,230,218	12,605
<b>Total</b>	<b>17300.2</b>	<b>26,686,862</b>	<b>572,530</b>

Source: World Bank staff based on CSO data.

and extended to most large urban centers.<sup>103</sup> The World Bank-funded Rural Access Program was launched in 2001 to provide equitable all-weather road access to the rural population. As a result of these and other efforts, Yemen's pre-war road network was better than those of several comparator countries, with 60 percent of the paved network rated as "good" or "very good," leading to the rise of a substantial vehicle fleet and high traffic volumes on the arterial network (see Table 4).<sup>104</sup>

**Connectivity is vital to trade, productivity growth, and poverty reduction in Yemen.**

A large share of the population lives in rugged areas in the western and central highlands, which

produce the bulk of agricultural output and where most economic activity occurs. The country's largest markets, manufacturing centers, and business hubs are concentrated in these same areas, but most of the local population is spread across 133,000 villages and small rural settlements, where tenuous road access constrains the flow of goods and the movement of people, driving up the cost of living.<sup>105</sup> Because Yemen depends heavily on imported goods, and because there are no alternatives to

<sup>103</sup> CSO Statistical Yearbook (2015); World Bank (2014).

<sup>104</sup> World Bank (2019a).

<sup>105</sup> World Bank (2019b).

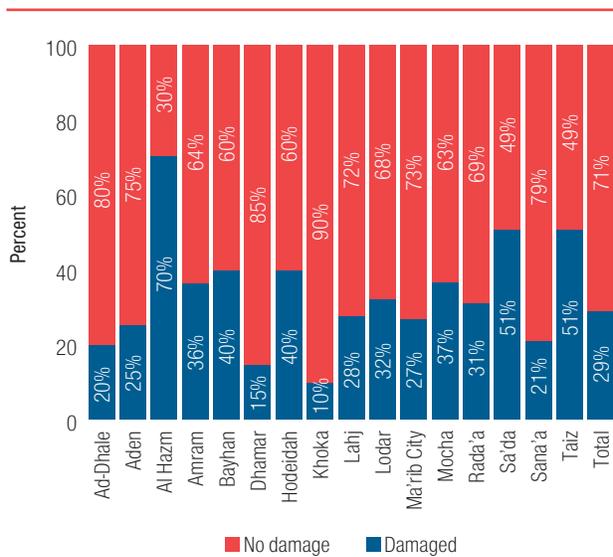
overland trucking for freight transport, prices and competitiveness are highly sensitive to the quality and accessibility of the road network.<sup>106</sup>

**Airstrikes, shelling, and landmines have damaged and destroyed roads and bridges across the country.**<sup>107</sup> Internal frontiers between different areas of political-military control have severed road access, and overland borders that previously accounted for a large share of trade and tourism have been closed. The conflict has sharply curtailed international and domestic market access, increased supply-chain length and complexity, and left hundreds of thousands of Yemenis trapped in a state of partial siege in towns and cities. Destroyed road infrastructure and physical barriers have intensified the truncation of the economy while exacerbating Yemen's physical and political fragmentation. The war has reversed hard-won improvements in transportation access for poor rural communities, and most of the population still lives in areas that are barely serviced by road corridors (see Map 4).<sup>108</sup>

**Roads and bridges along key transport corridors have been extensively damaged, especially in the governorates Sadah, Amran, Sanaa, Taiz, Marib and Aden.**<sup>109</sup> The main highways connecting Yemen's major northern and southern cities—including the N1 route linking Taiz, Ibb, Dhamar, and Sanaa with Aden, as well as the smaller Aden-Ad Dali highway, which is the shortest route between Aden and Sanaa—have suffered significant damage and are severed at key points. Houthi forces have destroyed bridges and other infrastructure and have blocked access to roads and highways for defensive purposes or to channel trade through taxable routes. About two-thirds of Yemen's population resides in those governorates, and the highway system is vital to their livelihoods (see Figure 24).<sup>110</sup>

**Restricted movement in and around the city of Taiz and between Taiz and neighboring governorates has affected about 4 million people.** Between 2015 and 2017, continual conflict over the densely populated city of Taiz ended with the Houthis controlling the city's main access points

**Figure 24** Intra-Urban Road Damage by City



Source: World Bank estimates.

via the branch roads to the main north-south and east-west highways. Only one entrance links the southwestern part of the city to the district of At Turbah, which provides road access to other parts of the country under IRG control. The Houthis control Hawban, Taiz's economic hub, which includes some of Yemen's major food industries and where most Taiz residents are employed. Citing security concerns, the Houthis have blocked the 6km road route linking Taiz with Hawban, forcing travelers to take an alternate 100km route. As a result, what was once a 10-minute commute can now take five to eight hours. Moreover, transporting goods from Aden to Taiz may take several days due to poor road conditions and a complicated network of alternative

<sup>106</sup> *Yemen's Economy: Oil, Imports and Elites*, Chatham House, 2011.

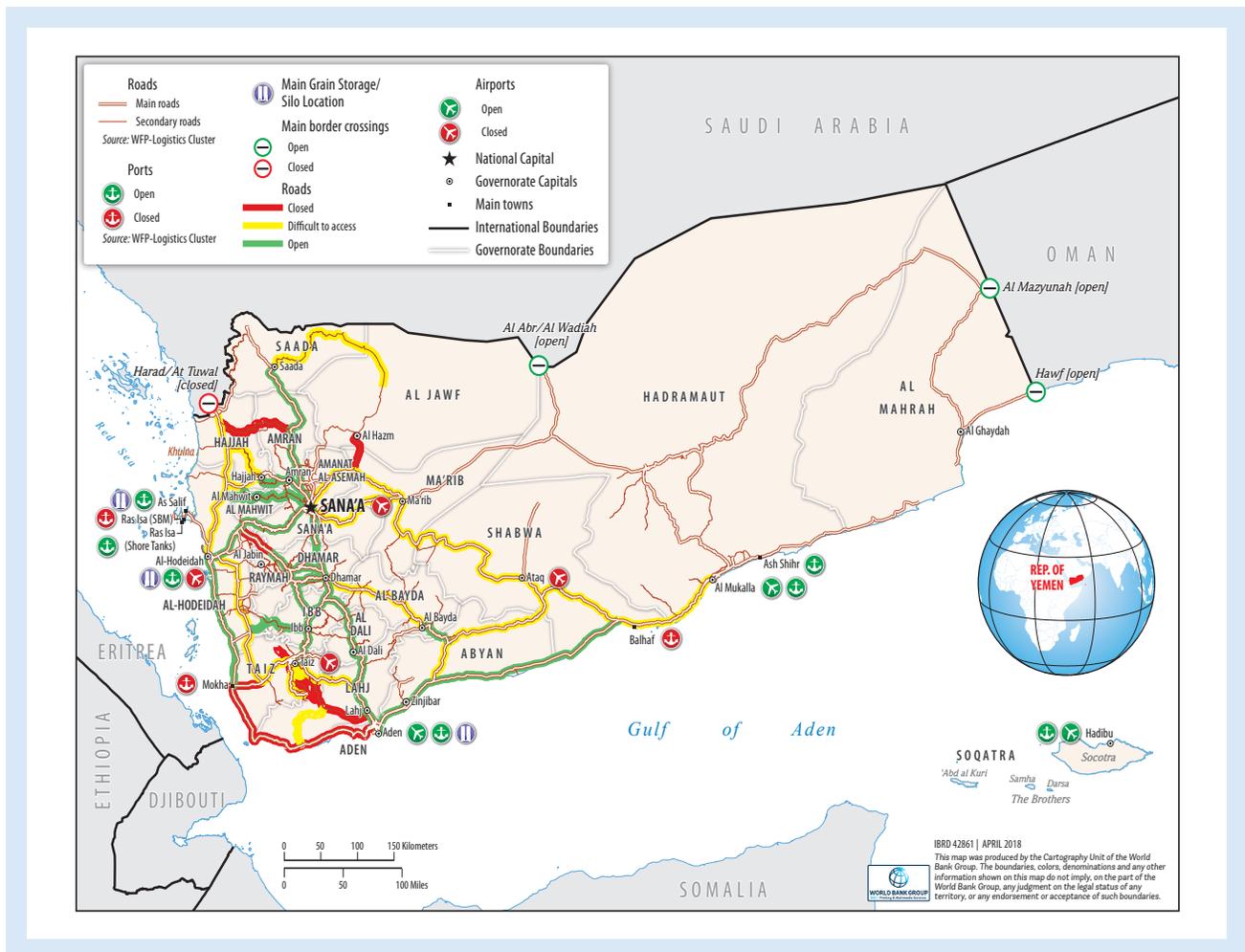
<sup>107</sup> See, e.g., al-Tairi, Nabil, *The Road Transport Sector in Yemen: Critical Issues and Policy Priorities*, Development Champions, March 2022.

<sup>108</sup> Ibid.

<sup>109</sup> *Yemen Transport Sector, Input to the Yemen Policy Note no. 4 on Inclusive Services Delivery*, World Bank, 2019.

<sup>110</sup> World Bank, 2014.

## Map 4 Transportation Routes



Source: World Bank Group.

routes, and the costs of transporting goods from Aden to Taiz using the 128km Aden–Ar-Rahidah road are estimated to have roughly doubled since the beginning of the war. Goods traveling from Aden to other Houthi-controlled areas via Taiz must now move along poorly maintained mountain routes to the south of Taiz before navigating the Hawban detour route (see Map 5).

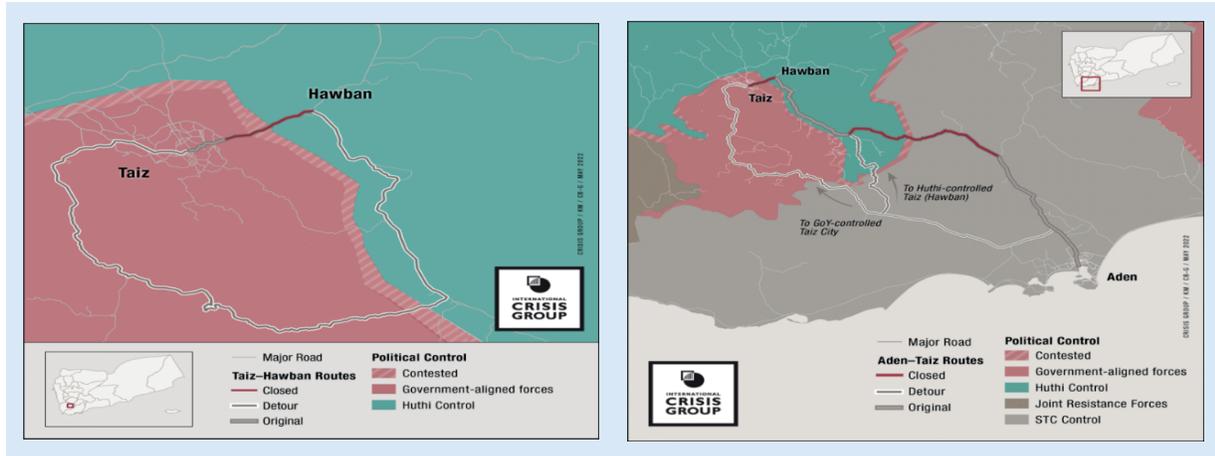
**Longer and more complex road routes have changed the economics of overland freight.**

Longer travel times increase transportation costs, both for the delivery trip and the backhaul. A 2009

study<sup>111</sup> found that total transportation expenses increased 175–195 percent when trailers and heavy trucks used secondary roads instead of one and two-lane national roads and by 298–330 percent when they used difficult feeder roads. Moreover, this analysis focused on the increase in mileage only, and it was conducted before the war, when trucking was not disrupted by unexpected blockades or outbreaks of fighting. Due to the risks associated

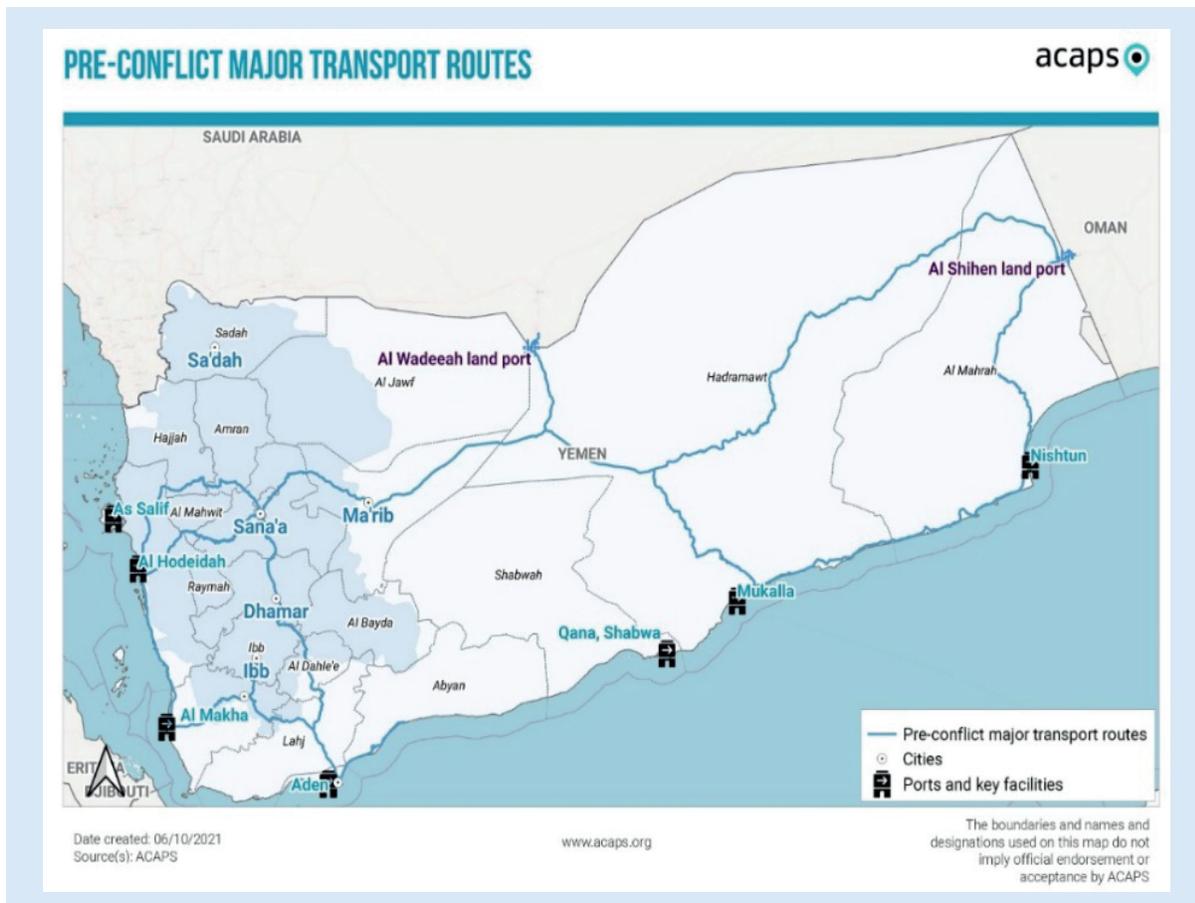
<sup>111</sup> Phase II, *Transport-Cost Report, Development of a National Port Strategy for Yemen*, the Cornell Group, March 2009.

### Map 5 Hawban to Taiz (left) and Aden to Taiz (right)



Source: International Crisis Group.

### Map 6 Major Transport Routes Before the Conflict



with the job and a worsening shortage of skilled workers, experienced truck drivers command high and rising wages.

**Most goods entering the Aden port and bound for Houthi areas now pass through the northern city of Marib, as do goods imported via other IRG-controlled ports and land borders with Saudi Arabia and Oman.** The 160km road connecting Sanaa with Marib remains closed due to fighting, forcing travelers and truckers to take alternative routes through Al Bayda, adding nearly 400km and 7–10 hours to the journey, or across the desert via northern Marib and Al Jawf. These routes include dirt roads in poor condition, adding to safety concerns, while elevated costs and travel

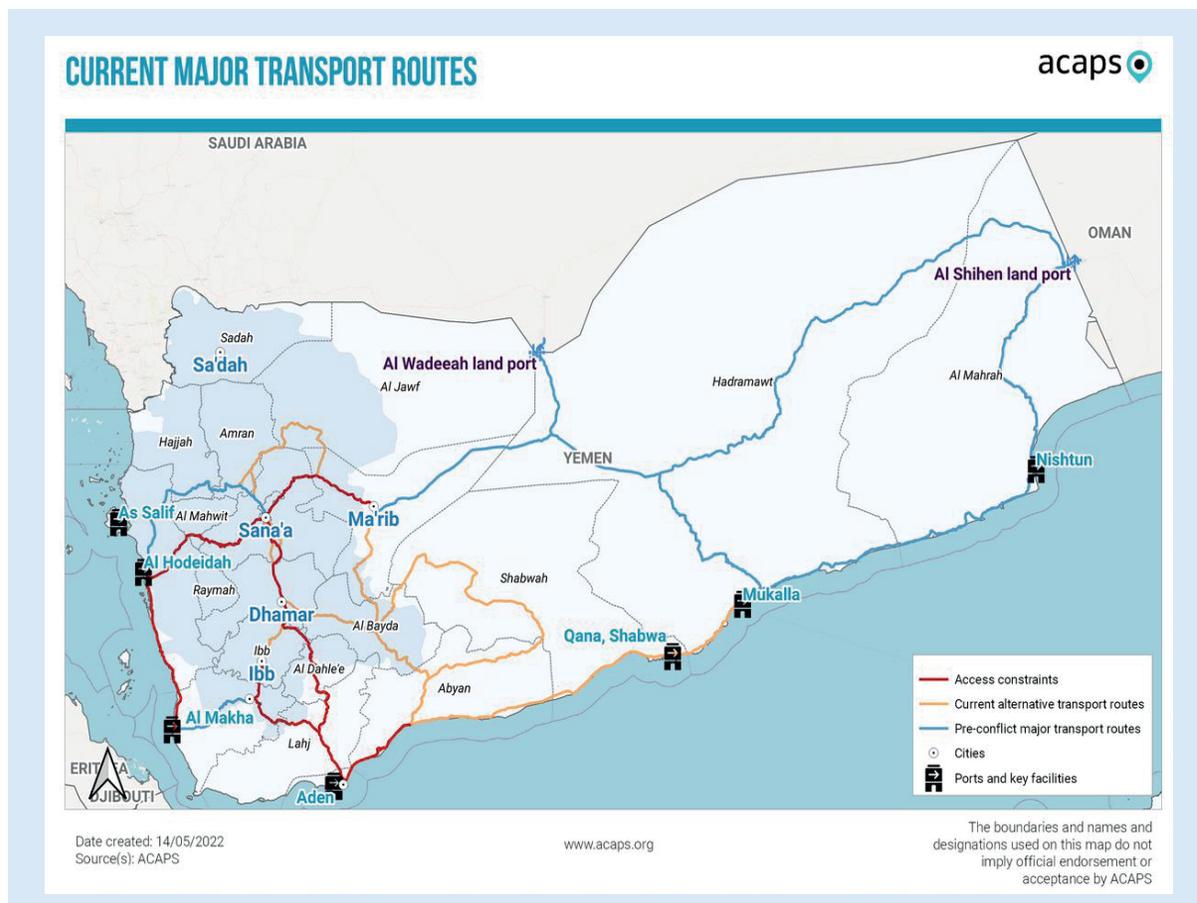
times make it infeasible to transport perishable goods. Intra-city transport rates have increased by an average of 12–14 percent over the course of the war, and these increased costs are passed through to consumers (see Maps 6, 7, and 8).<sup>112</sup>

**Before the war, around 50 percent of Yemen's non-extractive exports and 60 percent of its imports transited through the At Tuwal overland border crossing, which connected Yemen with Saudi Arabia.** Most of these exports were agri-food products and fishery products.<sup>113</sup> The total value of the cross-border trade passing

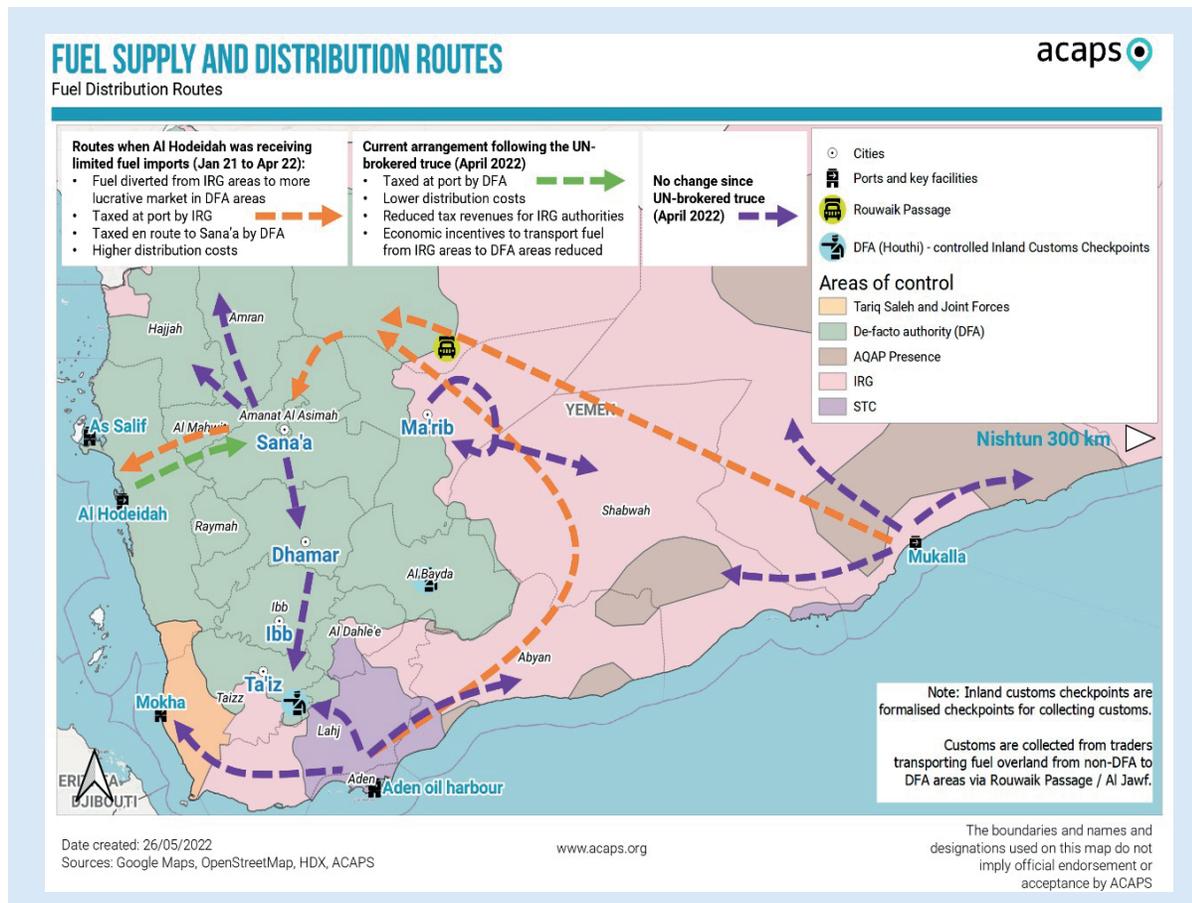
<sup>112</sup> For cost calculations, see Annex B.

<sup>113</sup> UN Comtrade Data, <https://comtrade.un.org/data>.

## Map 7 Current Status of Major Transport Routes



## Map 8 Fuel Supply and Distribution Routes



through At Tuwal was estimated at US\$1.5bn. The closure of this border since 2015 has imposed major constraints on transportation, trade, and economic activity.<sup>114</sup> At present, the only overland border crossing between Yemen and Saudi Arabia that remains open is Al Wadiah, in the eastern governorate of Hadramawt, about 600km from At Tuwal.

**Based on data from the Ministry of Tourism, more than 53 percent of the 1.3 million tourists who entered Yemen on average each year from 2012–14 passed through the overland border crossings of At Tuwal, Al Buqa, and Alab, all of which are now closed.** Most tourists were Saudi nationals, who would be unlikely to travel to Yemen at present even if the borders were open. An additional

1.5 million Yemeni travelers used these three land borders annually for inbound and outbound trips.<sup>115</sup> The closure of overland borders has compounded the economic losses caused by the conflict and pushed a large share of Yemen's population into poverty.

### Underemployment and Vulnerability Are on The Rise

**To investigate how households are responding to the challenging context, this section reports**

<sup>114</sup> Source: Yemen CSO, Foreign Trade, Table 13, Exports and Re-Exports by Customs Ports, and Table 12, Imports by Customs Ports: 2013 to 2017.

<sup>115</sup> Source: Yemen CSO, Tourism, Transport, and Travel, for the years 2012 to 2014.

**on the results of a random-digit phone survey conducted by the World Bank during August and September 2022.** The survey contacted about 1,300 respondents across Yemen,<sup>116</sup> with questions focusing on livelihoods and labor-market conditions. While representativeness is always a challenge for phone surveys, sampling weights have been calibrated to population projections, alleviating some (though not all) potential biases. Given the scarcity of traditional statistics, this dataset presents a unique opportunity to understand household living conditions and labor-market dynamics (see Figure 25).

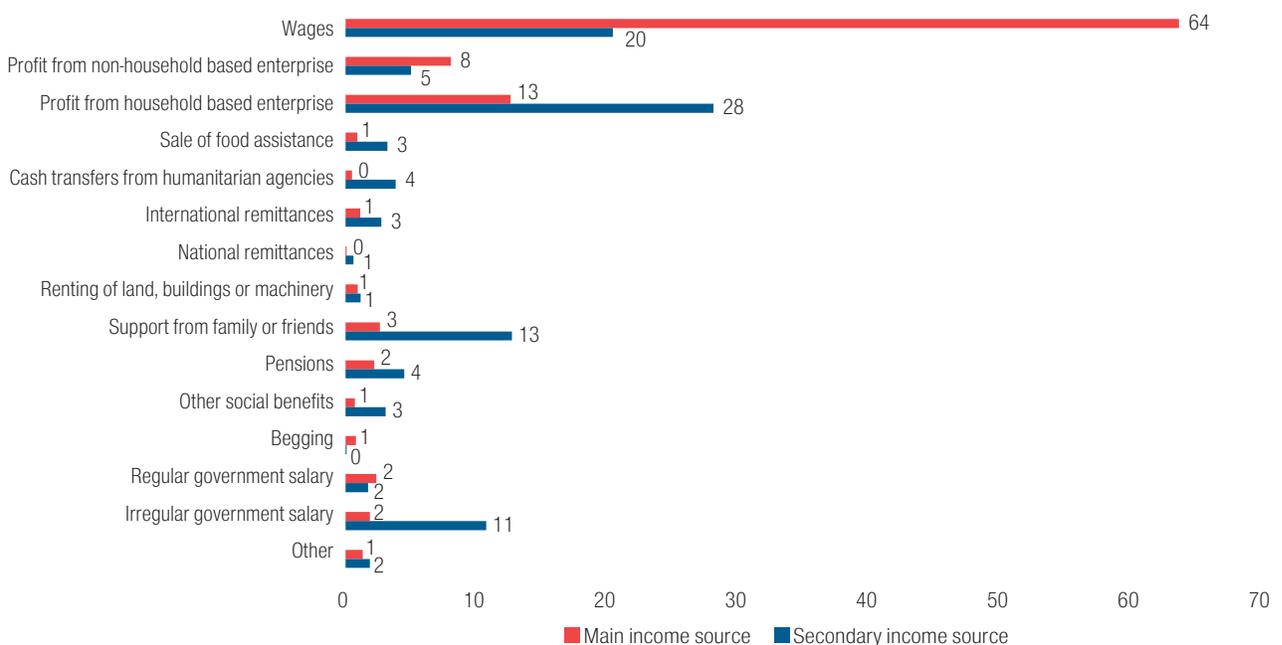
**The results indicate that while households rely heavily on labor income, employment alone is insufficient to cover their basic needs.** Labor-market conditions and food-security indicators differ substantially between the IRG and Houthi areas, due in part to the more reliable payment of government salaries by the IRG. Job quality is poor in both areas, but workers are

not waiting for the conflict to end while relying on external support. Instead, despite multiple economic shocks, the widespread destruction of infrastructure, and the persistence of everyday violence, Yemenis continue to work. The private sector continues to provide limited livelihood opportunities, but wages are low and underemployment is pervasive.

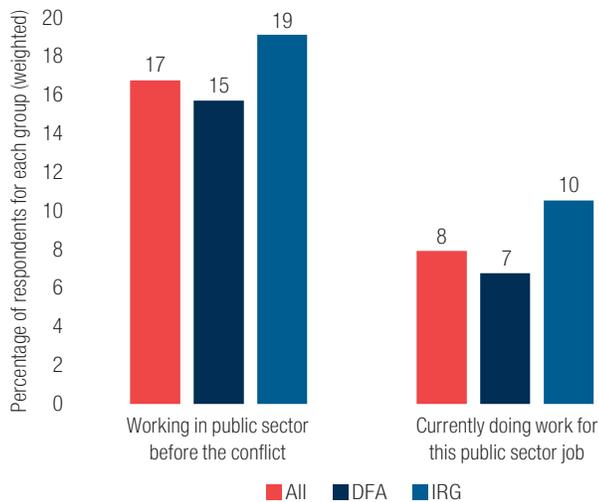
**The survey highlights the large share of households that depend on wage income provided by a single household member.** According to the survey, 84 percent of households report having at least one employed household member. In addition, 64 percent of respondents report that wages are their most important source of income. Only 23 percent of households report having a second source of income, and this secondary source

<sup>116</sup> A full description of the survey methodology and results can be found in a forthcoming report – Yemen Mobile Phone Survey Monitoring Round I, World Bank 2022.

**Figure 25** Shares of Important Sources of Household Income



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

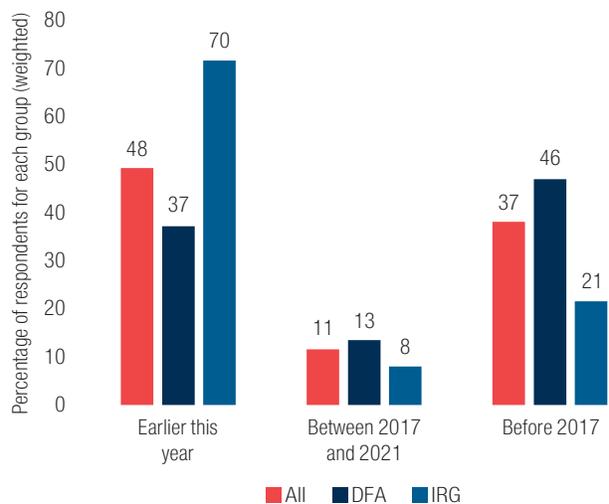
**Figure 26** Public Employees by Status

Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

is also predominantly wages. Household and non-household-based enterprises, such as the sale of crops or animal products, also appear to be important income sources.

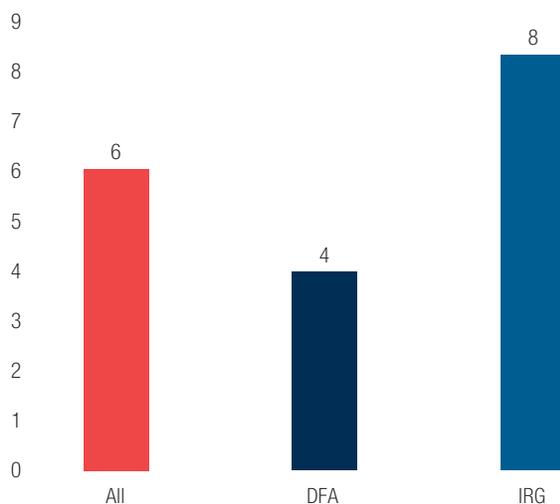
**The public sector was once a major employer and remains an important source of income.** Seventeen percent of respondents report being employed in the public sector before the war, and 8 percent continue to work in the public sector. Of these, almost half of respondents report that the household member employed in the public sector was paid earlier this year, though rates range from 70 percent in IRG areas to just 37 percent in Houthi areas. Public-sector employees in IRG areas received their salary an average of eight of the last 12 months, while public-sector employees in Houthi areas received their salary an average of four out of the last 12 months (see Figures 26, 27, and 28).

**While 84 percent of respondents report having a job, only 70 percent report having worked in the week before the interview.** Gender gaps are substantial. Eighty percent of female respondents report having had a job during the last 12

**Figure 27** Most Recent Payment for Public Employees

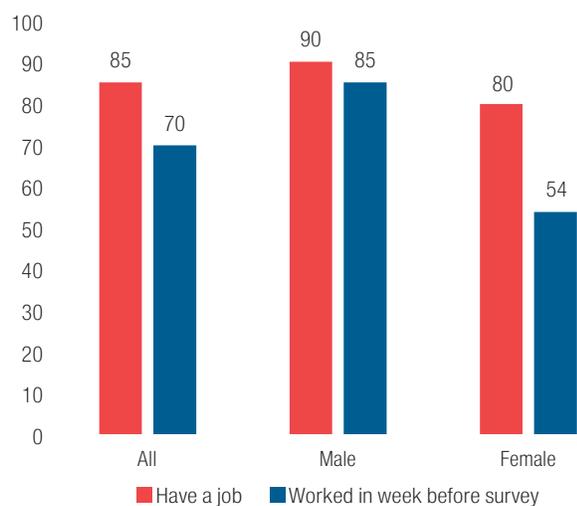
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

months and 54 percent report having worked in the last seven days. By contrast, 90 percent of male

**Figure 28** Number of Months That Public-Sector Employees Received Payment Over the Last 12 Months

Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 29** Share of Respondents Working During the Seven Days Before the Survey

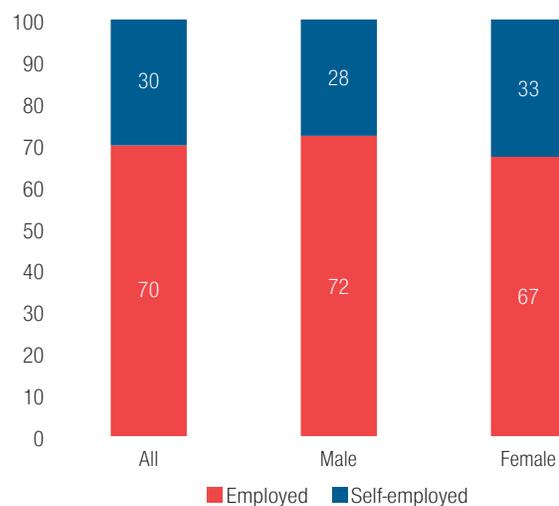


Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

respondents report having had a job in the last 12 months, and 85 percent report having worked in the last seven days. Given the limitations of telephone surveys, these results should be interpreted with caution and cannot be construed as national employment rates. For example, a phone survey is more likely to sample better-off households who own phones, and within each respondent household the person who answers the phone is likely to be the working member. Nevertheless, the data shed light on important issues around employment and livelihoods (see Figure 29).

**Among working household members, most are employed as elementary occupation workers in the private sector.**<sup>117</sup> Men and women are both most likely to cite agriculture as the sector of employment. Construction is also a significant employer, albeit primarily among male workers. Across the private sector, most respondents report working in enterprises with five employees or fewer, and women are especially likely to be self-employed. Public employment remains substantial, particularly among women, and about 15 percent of working

**Figure 30** Employment Status of Respondent or Main Income Earner



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

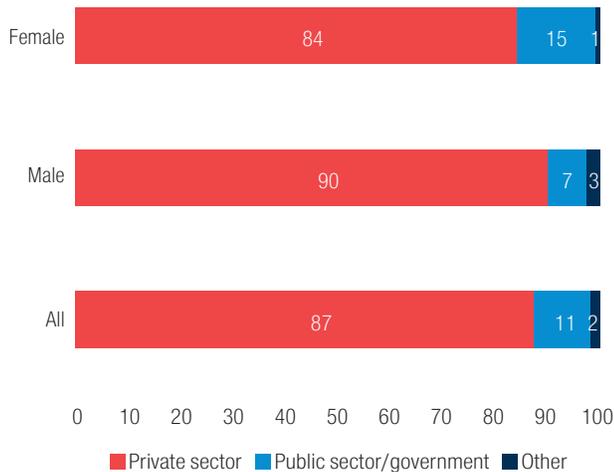
women report being employed in the public sector (see Figures 30, 31).<sup>118</sup>

**Job quality is poor, and low and unreliable wage payments are combined with a lack of job security.** Respondents describe 33 percent of jobs as permanent in nature, with rates ranging from 40 percent in IRG areas to 29 percent in Houthi areas. Conversely, respondents in Houthi areas are more likely to report being engaged in seasonal and occasional work (28 and 18 percent, respectively) than respondents in IRG areas (21 and 7 percent, respectively). Less than half of working respondents or main income earners report being paid on time. More than one-quarter report up to six late payments over the last 12 months; 6 percent report more than 6 late payments; and 15 percent report payments being

<sup>117</sup> In 81 percent of cases the respondent had a job, even if they had not worked in the last week. If the respondent did not have a job, we asked them to respond on behalf of the main income earner, this applied to 103 cases. In 11 percent of cases there were no working members in the household.

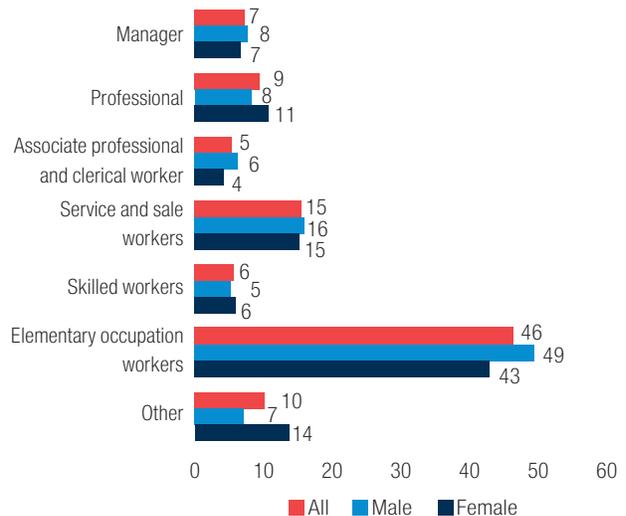
<sup>118</sup> Al-Ammar et al 2019.

**Figure 31** Sector of Employment of Respondent or Main Income Earner



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 32** Occupation of Respondent or Main Income Earner



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

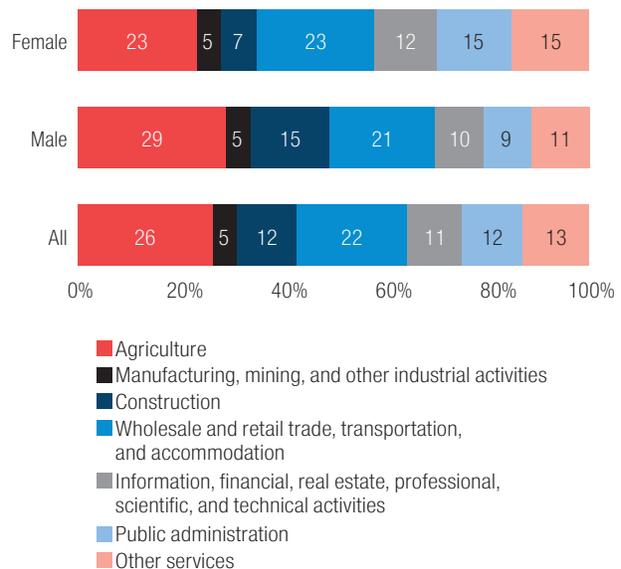
late all the time. The average delayed payment is one month late (see Figures 32–36).

**Most workers reported being satisfied with their jobs,<sup>119</sup> but among the 18 percent who report being dissatisfied, the main reasons are low pay and underemployment.** Only 9 percent of households with a working member report that employment income is sufficient to cover their expenses, while 35 percent report not being able to cover expenses at all, and 30 percent report being able to cover less than half of all household expenses. Reported rates of job satisfaction and ability to cover expenses are significantly higher among households living in IRG areas (see Figures 37–45).

**Many households appear to be turning to self-employment in household enterprises as**

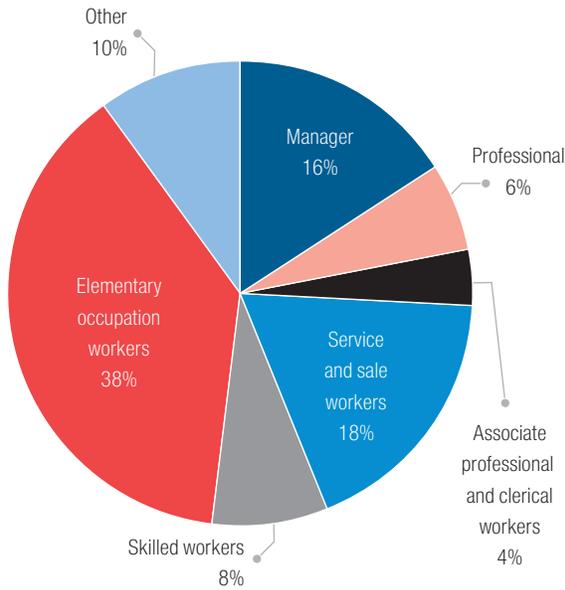
<sup>119</sup> It should be noted that feedback from the survey team demonstrated that the question on job satisfaction was not culturally appropriate and results might overestimate how satisfied workers are. Nonetheless, results are included here because the reasons for dissatisfaction are important.

**Figure 33** Employment Sector of Respondent or Main Income Earner



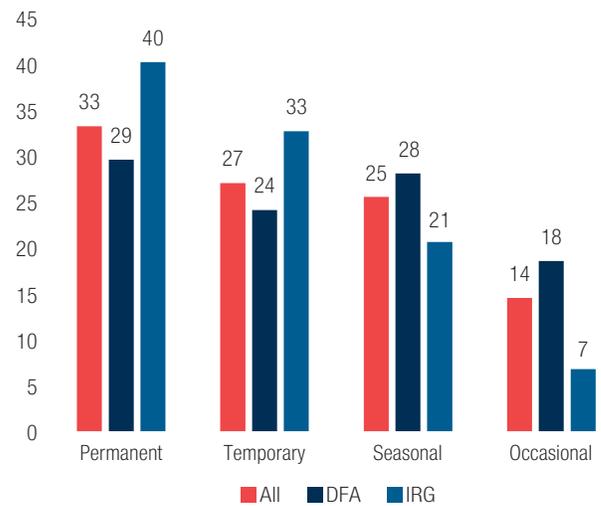
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 34** Occupation of Self-Employed and Own-Account Workers



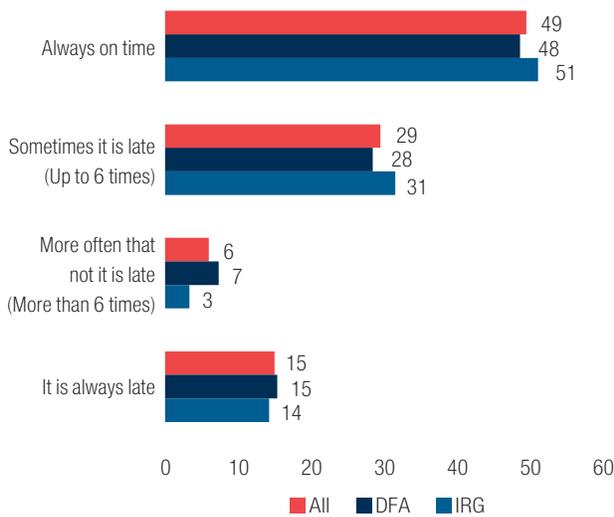
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 35** Employment Type of Working Respondent or Main Income Earner



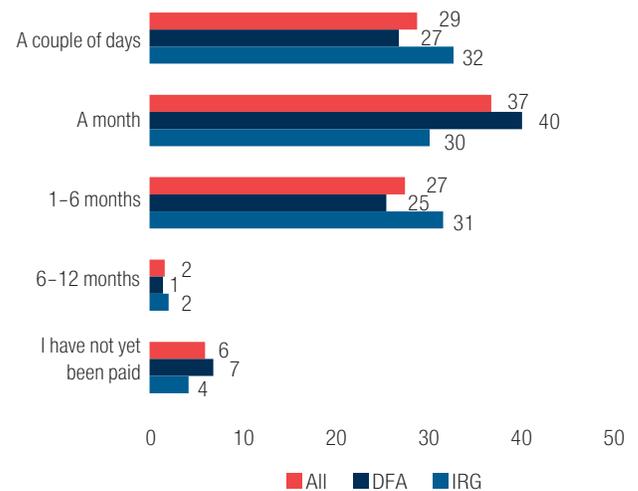
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 36** Frequency of Payment Delays



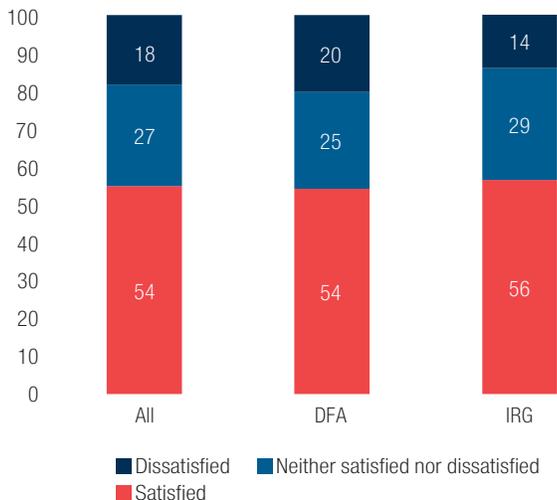
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 37** Duration of Payment Delays



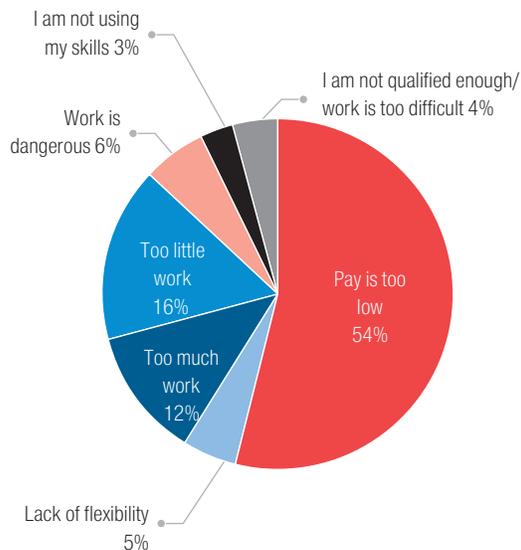
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 38** Job Satisfaction



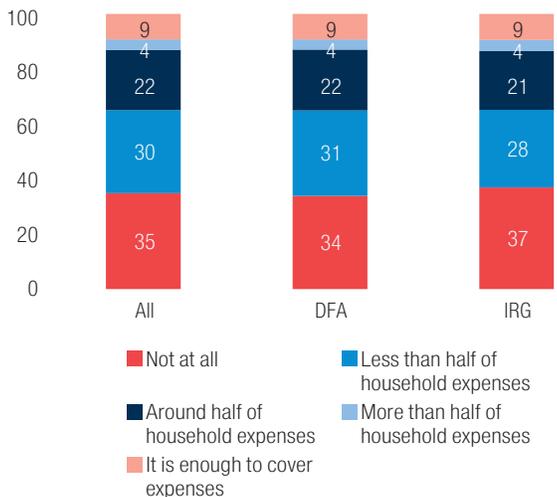
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 39** Reasons for Job Dissatisfaction



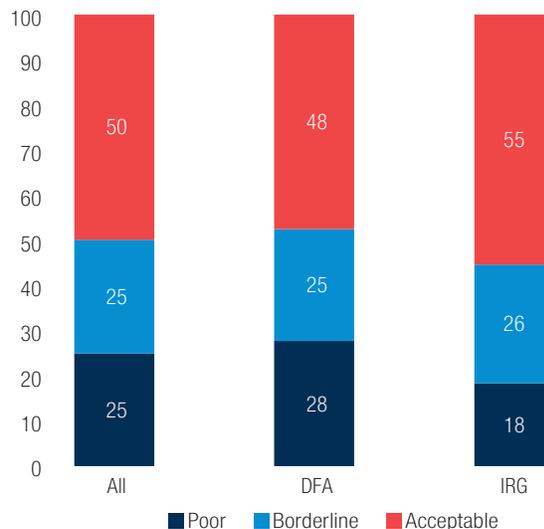
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 40** Employment Income Sufficient to Cover Expenses



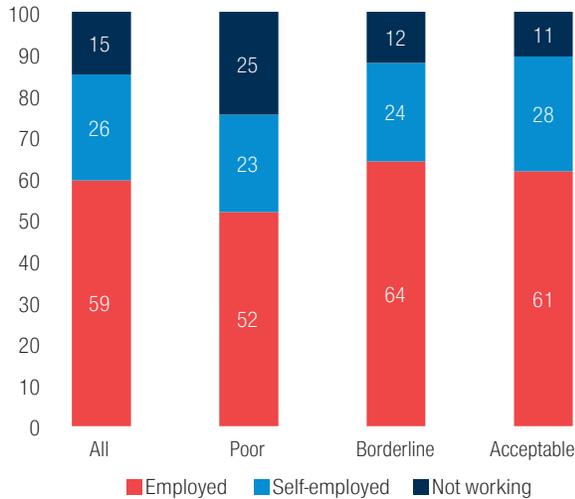
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 41** Food-Security Status



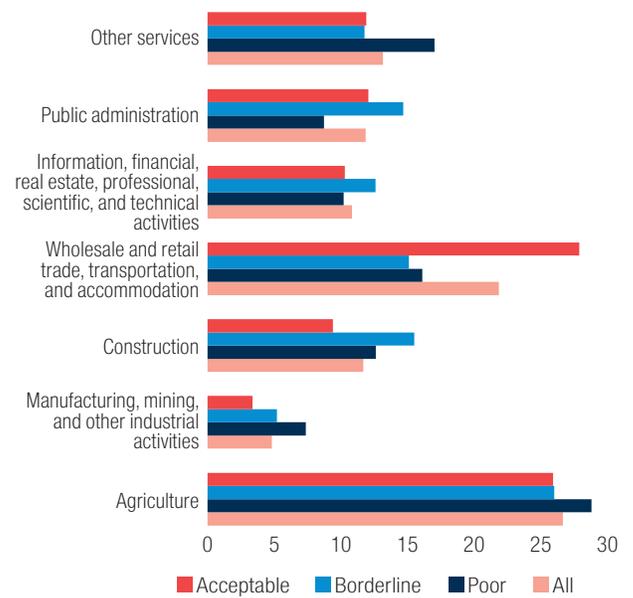
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 42** Employment Status and Food Security



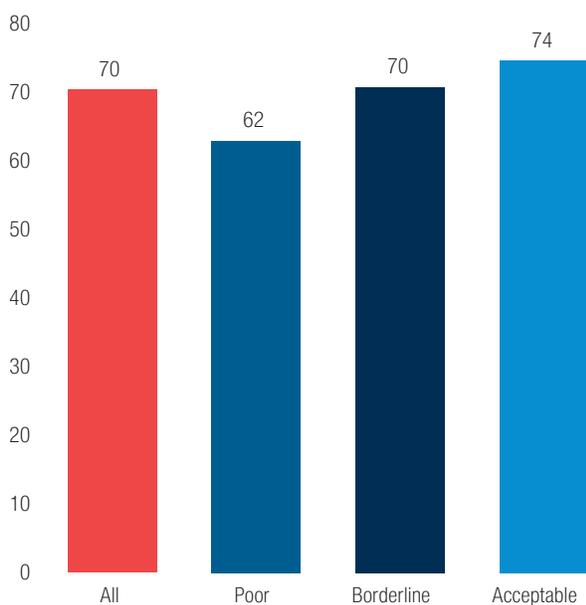
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 43** Employment Sector and Food Security



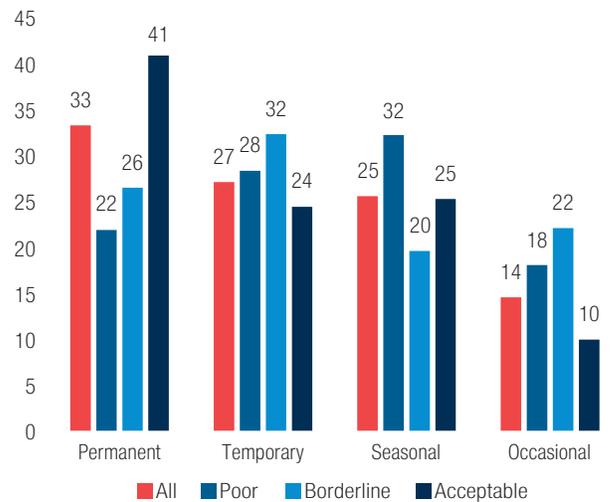
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 44** Worked in the Last Seven Days and Food Security



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

**Figure 45** Job Type and Food Security



Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

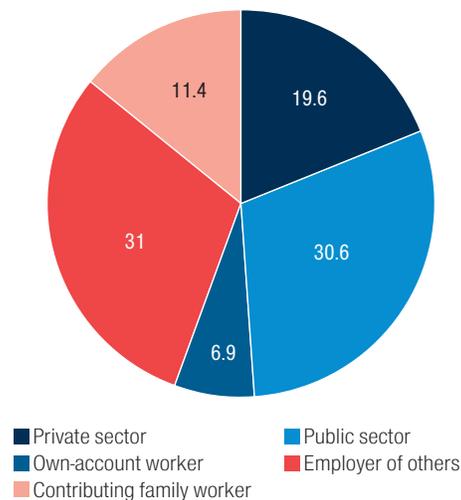
**a coping strategy.** The 2014 Household Budget Survey, which spanned the Houthi takeover of Sanaa, revealed a substantial increase in the share of households that owned a household enterprise but a sharp decrease in the average earnings from such enterprises.<sup>120</sup> These findings suggest that household enterprises are often used as a means to diversify income or to compensate for lost labor income.

**The phone survey includes a food-consumption score, which reflects the frequency and diversity of food consumption over the previous seven days.** The score is used to categorize households into poor, borderline, and acceptable levels of food security. One-quarter of households have poor food security, and another quarter have borderline food security, consistent with the results of other analyses.<sup>121</sup> Food security is an important welfare indicator and can be considered a proxy for poverty. Differences across zones of control are substantial, with 28 percent of households in Houthi areas having poor food security versus just 18 percent in IRG areas. Across the country, households without working members or with working members employed as seasonal agricultural labor are the most likely to be food insecure. While these results only point to associations between food security and employment outcomes, they do indicate that **households with less stable livelihood options outside of agriculture are more likely to be food insecure.**

### The Public Sector Payroll Remains a Complex Challenge

**The public sector was the largest employer before the war.** According to International Labor Organization statistics, more than 30 percent of Yemen's pre-war workforce was employed in the public sector. Official state figures recorded some 1.25 million people on the public payroll. These salaries may have supported as many as 6 million Yemenis, or more than one-fifth of the prewar

**Figure 46** Employment by Sector



Source: ILO Labor Force Survey, 2013–14.

population.<sup>122</sup> Roughly one-third of these workers, some 477,653, were civilian employees of administrative departments, while a similar number, 459,991, were employed by the defense ministry. Another 182,361 were employed by the interior ministry, 10,400 in political security, and 122,678 in other roles (see Figure 46).

**Historically, Yemen's public sector has been the country's largest employer.** Before the current conflict, the public sector employed more than 1.2 million workers and supported millions of dependent family members. In 2014, the public sector's total wage bill was YRI 1.14 trillion, or about US\$5 billion.<sup>123</sup> Some 48 percent of the wage bill went to administrative civilian staff, 26 percent to staff of the defense ministry, and 11 percent to staff of the interior ministry. Outside the military,

<sup>120</sup> Tandon, S. 2019. "When Rebels Attack: Quantifying the Impacts of Capturing Territory from the Government of Yemen." *World Bank Economic Review* 33 (2), 328–352.

<sup>121</sup> World Bank (2022).

<sup>122</sup> *Yemen publishes first labour force survey in over 15 years*, International Labour Organization, 27 October 2015.

<sup>123</sup> This figure is calculated at the prevailing exchange rate for 2014.

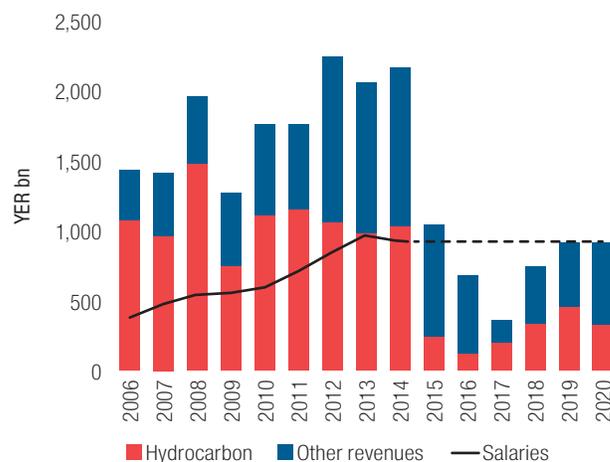
the education and health sectors accounted for the largest shares of public employment. An estimated 350,000 civil servants were employed in the education and health sectors, accounting for about 70 percent of the civilian payroll.<sup>124</sup>

**In 2015, Yemen's large public payroll already posed risks to fiscal sustainability, and the budgetary stress of the conflict has exacerbated the unaffordability of the wage bill.** Between 2006 and 2014, the public-sector wage bill grew by an average of 12 percent per year, while annual revenue growth averaged just 8 percent. In 2014, the wage bill totaled YRI 977 billion (about US\$4.5 billion),<sup>125</sup> representing 42 percent of revenues or 10 percent of GDP. After hostilities escalated in 2015, the public payroll swiftly came to exceed the government's total annual revenue (see Figure 47).<sup>126</sup>

**The public wage bill was widely believed to be inflated by "ghost workers," employees who existed only on paper and whose salaries provided additional income for officials and other elites.** During the 2012–2014 transitional period, UNDP led an effort to reduce budget leakages by introducing new biometric identification technology for public-sector workers. However, the onset of the war halted this initiative.

**The large public-sector wage bill, the revenue shock caused by the conflict, the relocation of the government, and the enormous fiscal cost of the conflict all contributed to the suspension of civil-service salary payments in mid-2016.** By early 2017, the IRG had resumed salary payments in areas under its control. Although the monetization of the fiscal deficit enabled the authorities to continue paying salaries, the resulting inflation eroded household purchasing power. IRG salary payments to teachers and healthcare workers in Houthi-controlled areas largely ceased in September 2016, when the IRG relocated the central bank to Aden. For a short period in 2018 and 2019, the IRG paid the salaries of 50,000 civil servants in Houthi-controlled areas, but this initiative was suspended once the use of rial banknotes printed after 2016 was banned in areas

**Figure 47** Fiscal Revenue<sup>a</sup> and the Public-Sector Wage Bill, 2006–2020



Source: WB staff calculations based on IMF data in 2010, 2014 and 2021.  
<sup>a</sup> The historical data for revenues from 2006 to 2014 cover the whole of Yemen. The World Bank relies on the available IMF revenue data from 2015 onward. The IMF data include IRG revenue information only.

controlled by the Houthis, causing the value of the rial to diverge significantly between the two territories. Between 2017 and 2020, the Houthis reportedly made irregular salary payments to civil servants in the areas under its control. A total of 20 half-month salary payments were made in Houthi-controlled areas over the period, with total outlays equivalent to 10 months of full salary payments (see Figures 48, 49).<sup>127</sup>

**While the total number of civil servants in Yemen cannot be reliably estimated, by 2018 roughly 250,000 civil servants in IRG-controlled areas were receiving salaries, while about 225,000 civil servants in Houthi-controlled areas**

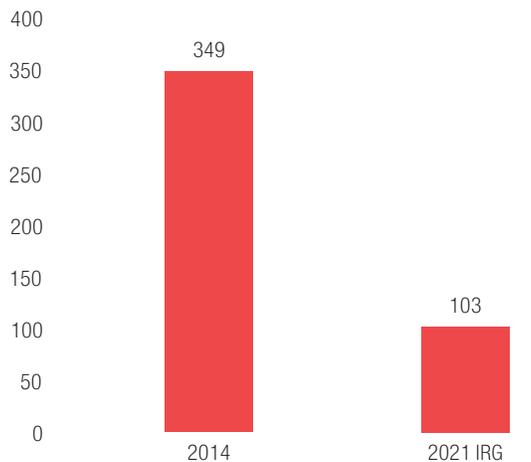
<sup>124</sup> These estimates are based on 2012 biometric registration data for the education sector, the 2014 wage bill, and the 2016 UNDP rapid assessment.

<sup>125</sup> This figure reflects an exchange rate of YRI 215 per US dollar.

<sup>126</sup> World Bank (2020).

<sup>127</sup> World Bank. 2020. Joint World Bank/UNDP/UNOPS/UNICEF Discussion Note: Proposed Approach for Facilitating the Payment of Civil Servants in Yemen. Washington, DC: World Bank; Stakeholder interviews in November to December 2021.

**Figure 48** The US Dollar Value of Teachers' Salaries<sup>a</sup> in IRG-Controlled Areas, 2014 and 2021 (US\$)



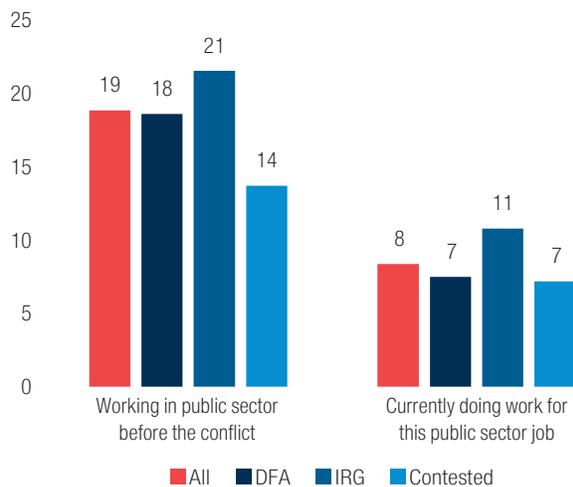
Source: Data shared with World Bank staff by UNICEF.

<sup>a</sup> Figure used for teachers is YER 74,798 which is the average of the 2014 education payscale. World Bank data suggests that many teachers may have been paid a lower amount of YER47,972.

were not being paid regularly.<sup>128</sup> This situation is ongoing. For example, the CSO has indicated that its staff receives, on average, only one month's salary every six months. The continued nonpayment of civil-service salaries in the 11 governorates controlled by the Houthi has led to absenteeism and to informal payments being demanded at schools and health centers. UNICEF reports that 171,000 teachers, or about 64 percent of all teachers in Yemen, have not received regular salary payments since 2016.<sup>129</sup> In the health sector, UNDP and media reports indicate that 26,000 to 30,000 health workers are not receiving regular salary payments.<sup>130</sup> In areas where payments were made, the 2014 pay scale remained in effect until 2019, when the IRG added a 30 percent allowance to compensate for the impact of inflation. Nevertheless, the purchasing power of civil-servant salaries has fallen drastically since 2014.

**Despite these challenges, the public sector remains an important source of income for many Yemeni households, both directly and**

**Figure 49** Number of Monthly Payments Received by Public-Sector Workers Over the Last 12 Months by Area of Control



Source: WB staff, based on household phone survey 2022.

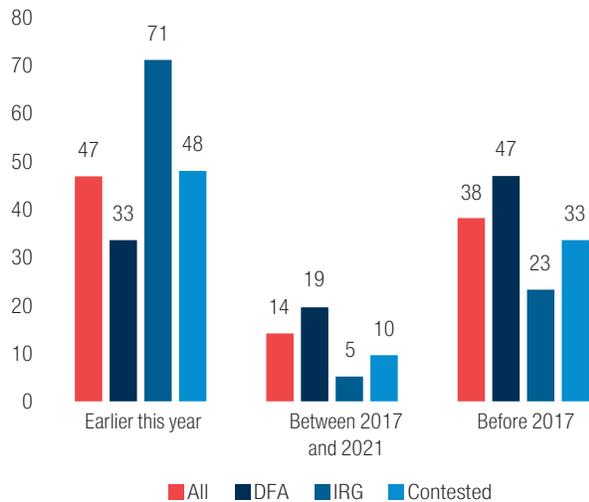
**indirectly.** As noted above, 8 percent of phone-survey respondents report that a household member is currently employed in the public sector and that almost half these public-sector workers were paid earlier this year. IRG areas lead Houthi areas in public employment and recent payment, and over the last 12 months public-sector employees in IRG areas received their salary twice as often as their counterparts in Houthi areas (see Figures 50, 51).

<sup>128</sup> IGC. 2020. Public sector salaries in Yemen: Towards building confidence in the peace process. London, UK.

<sup>129</sup> UNICEF. ND. "Support for Teachers in Yemen: Education Teachers Incentive and Rural Female Teachers." Presentation.

<sup>130</sup> UNDP. 2016. "Yemen Rapid Assessment Report for December 2016: Measuring the impact of the public sector wage suspension on basic service delivery in the healthcare and education sectors." See also: "UN cuts extra pay for health workers in Yemen just as COVID-19 hits" in *New Humanitarian* May 7, 2020. <https://www.thenewhumanitarian.org/news/2020/05/07/coronavirus-health-yemen-unpaid-world-health-organisation-cuts>.

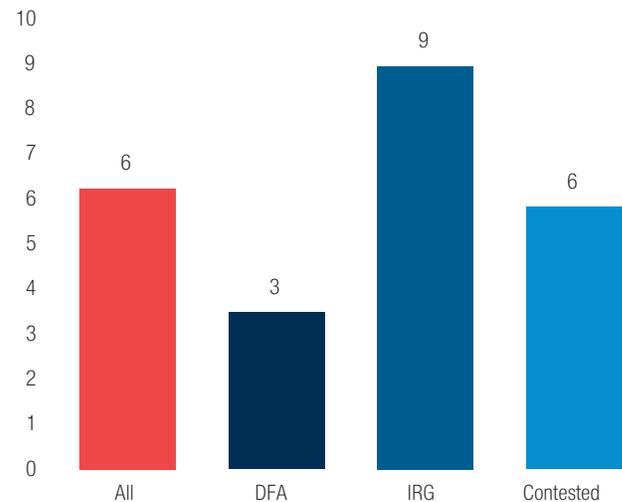
**Figure 50** Public Employment by Area of Control



Source: WB staff, based on household phone survey 2022.

**The UN has sought to negotiate an agreement on salary payments between the Houthis and IRG since at least 2016.** The then-Hadi government's subsequent decision to move the Yemeni central bank headquarters to Aden that September was motivated by the government's belief the Houthis were using the bank to underwrite the cost of their war effort. When the government resumed payment of salaries in 2017, it largely focused on doing so in areas under its control. Citing a lack of liquidity of Yemeni Riyal notes and the loss of oil revenues, the Houthis paid civil service salaries only sporadically and usually in half-month increments. UN-led economic mediation efforts received a boost in December 2018 when, as part of the Stockholm Agreement that prevented a battle for the Red Sea port of Hodeida, the parties agreed to pay salaries nationwide using a mix of revenues from Hodeida and customs, tax, and oil-export income. However, subsequent talks over the mechanisms for collecting and distributing funds stalled, and no salaries were paid under the agreement.

**Figure 51** Last Payment Received by Public-Sector Workers Area of Control



Source: WB staff, based on household phone survey 2022.

**In 2020, the UN revived the question of salary payments during talks over an initiative to prevent a battle for the oil-rich governorate of Marib, but the draft Four-Point Plan produced by the talks was never ratified.** During these rounds of negotiations, both sides had agreed that joint payments should be for civilian public employees only, but another setback occurred. Throughout these different rounds of negotiation, the central focus was restoring payments to civil servants listed in the government's 2014 payroll. While the government and the Houthis debated who counted as a civilian—the Houthis claimed that state security employees including paramilitary forces under the authority of the interior ministry were civilians while the government argued that only administrative staff working outside of the interior and defense ministries should be paid—they appeared to agree that defense ministry employees should not be paid under the joint mechanism. But this changed when, in late September 2022, when the Houthis began insisting that oil-export revenues should be used to pay defense personnel.

## The Private Sector Has Proven Remarkably Resilient

**In the absence of crucial governmental functions, the private sector has assumed an ever-greater role in managing the country's interrelated security, economic, and demographic challenges.**

Yemen's economy is highly labor-intensive, with labor contributing 60.7 percent of GDP. The private sector contributed about 63 percent to GDP from 2006 to 2014, since 2015 this share has risen to about 70 percent as the public sector's contribution fell amid declining oil and gas production.<sup>131</sup> The private sector's average contribution to total gross output rose from 64 percent in 2010–14 to 82 percent in 2015–17.<sup>132</sup> According to the CSO, 97 percent of the private sector is made up of micro, small, and medium-sized enterprises (MSMEs), which employ a combined 73 percent of the Yemeni workforce.<sup>133</sup>

**The private sector plays a major role in social service provision.** Prior to the conflict, the private

sector provided more than 60 percent of healthcare services. The private sector is also responsible for 100 percent of agricultural output, which provides about 20–25 percent of domestic food consumption. In 2016, the private sector oversaw 899 basic and secondary schools and 101 higher-education institutions with 83,177 students. The collapse of public service delivery has been accelerated by the war, the public-sector salary crisis, and the suspension of operational financing for public facilities in most governorates. However, the private sector has continued to provide education and health services. Moreover, humanitarian organizations rely on Yemeni businesses to provide logistics and supply intermediate goods and services, including vital medical supplies during the cholera

<sup>131</sup> Promoting Partnership with the Private Sector, Central Statistical Organization (CSO), Socio-Economic Update, Issue number 53, October 2020.

<sup>132</sup> CSO, 2017.

<sup>133</sup> Yemen Country Report, Economist Intelligence Unit, January 2021. MSMEs are defined as firms employing less than 25 people.

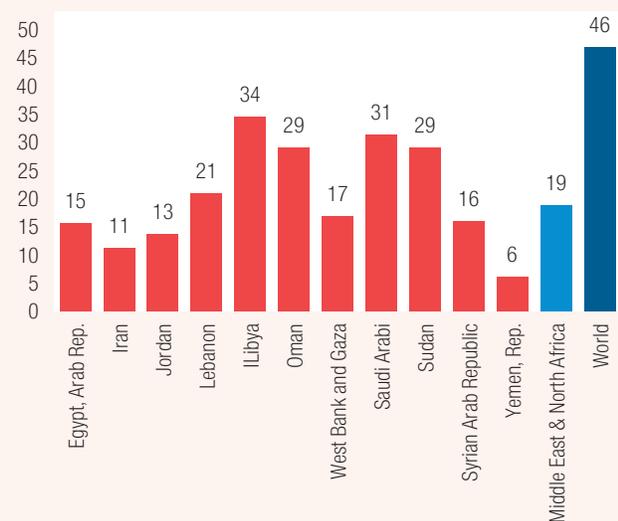
### BOX 2: THE ROLE OF WOMEN IN YEMEN'S ECONOMY

**Female labor-force participation in Yemen was low even at the start of the civil war.** The last labor-force survey, conducted in 2013–14, showed 6 percent of women over the age of 15 engaging in the labor market. This is the lowest female labor force participation rate amongst countries in the Middle East and North Africa Region, which already sees some of the lowest participation rates in the world. Yemen has also ranked last out of the 144 countries included in the World Economic Forum's Global Gender Gap Index since 2016.<sup>a</sup>

**However, these statistics mask some modest progress in terms of women's political empowerment.** Women long played an important role in civil society in Yemen, leading key groups and civic movements since the 1990s. The 2000s saw the first female minister appointed. Most notably, women were active participants in the popular uprising that removed Saleh from power. During the National Dialogue Conference of 2013–2014, women made up 28 percent of delegates. The dialogue's outcomes included a number of positive gains for women, including a minimum threshold of 30 percent participation for women in electoral politics, which was signed into law in 2014, and an increase in the minimum age of marriage to 18.

**However, setbacks have limited the progress made over last two decades in increasing women's participation in political life.** The formation of a recent government to include the STC in late 2020 had sidelined women's

**Figure B2** Female Labor-Force Participation Rates, Yemen and Comparators



(continued on next page)

## BOX 2: THE ROLE OF WOMEN IN YEMEN'S ECONOMY *(continued)*

participation, infuriating women activists. This was seen as a weak commitment to women on the political front and disrespectful of the sacrifices of women who had fought hand in hand with men during the demonstrations against Saleh.<sup>b</sup> The absence of women in the peace negotiations, which has been heavily male dominated, was yet another negative signal, undermining the role of women when deciding the future of Yemen.<sup>c</sup>

**Beyond the peace negotiations, the civil war has had very complex impacts on women and girls with lasting and often harmful effects on their economic and social well-being.** Women have been disproportionately affected by the war's direct and indirect effects.<sup>d</sup> Some 36 percent of girls are out of school,<sup>e</sup> and women make up around three-quarters of the estimated 4.3 million people displaced over the course of the war—a number that has risen since 2020 due to fighting in Marib and Shabwa.<sup>f</sup> Because many men have been injured, died in combat, or lost income from public sector jobs, women have had to bear the full economic burden of sustaining large families. Unfortunately, there seems to have been significant increases in child marriage and gender-based violence.<sup>g</sup>

**At the same time, the civil war has opened up new opportunities for women, who have assumed responsibilities previously reserved for men.** By analyzing the Yemen Household Budget Survey of 2014 and the Yemen Human Development Survey of 2021, we find improved intrahousehold female empowerment in districts of Southern Yemen that experience medium levels of conflict (Ishak et al 2022). This is explained by explained by changes in household composition, whereby men are more likely to leave the household in conflict-affected districts, leaving women in charge of household decisions.

**There is also emerging evidence of changes to women's involvement in economic life.** For example, a 2018 survey found that women were more likely to be working for NGOs than men and “During the conflict, women have entered professions previously closed to them by cultural restrictions, like waitressing and retail” Al-Ammar et al. (2019, p. 6). Key informant interviews also point to an increase in women setting up microenterprises, such as bakeries, within their homes. This is also confirmed by the Yemen Mobile Phone Survey, reported in Chapter 2, which show that women are either likely to work in the public sector or are self-employed.

**The international experience suggests that such shifts in norms can lead to large permanent gains for women.** Gay (2021) shows how the First World War in France led to large increases in female labor force participation to compensate for the “missing men” in the army and those who were killed in the fighting, and this led to permanent gains for women in wages and employment status. While there has been limited evidence of permanent gains for women in conflict-affected countries outside of Europe, Tripp (2015) finds that in Africa the active role of women in civil war is associated with significant post conflict gains in political representation and officeholding. In Yemen, women have been directly involved in the fighting on all sides.<sup>h</sup>

**The end of the war will, therefore, likely represent a critical juncture for women where well targeted interventions may have a powerful effect on consolidating some of the benefits they have secured during the conflict, and past political gains can be restored.** Understanding in more detail what these are, and how they can be preserved, is an important analytical task that should be taken forward in the near future. While there are some positive signs for a changing economic role for women, the evidence thus far does not paint the full picture. Moreover, the context of Yemen, with low levels and unequal human capital, is very different to a post-war Europe which saw lasting social change.

<sup>a</sup> Global Gender Gap Report 2022, World Economic Forum, 13 July 2022.

<sup>b</sup> Shujaldeen, 2020.

<sup>c</sup> <https://www.civicus.org/index.php/media-resources/news/interviews/5658-yemen-women-are-completely-absent-from-decision-making-bodies-politically-we-don-t-exist>.

<sup>d</sup> See Rohwerder 2017 for a review of available evidence.

<sup>e</sup> International Rescue Committee (<https://www.rescue.org/article/4-ways-war-yemen-has-impacted-women-and-girls>).

<sup>f</sup> Source: United Nations (<https://news.un.org/story/2020/03/1058591>).

<sup>g</sup> Al-Ammar et al. 2019.

<sup>h</sup> Ibid.

outbreak in April–September 2017.<sup>134</sup> Women play an important role in the Yemen economy (see Box 2).

**In addition to macroeconomic imbalances, weak institutions, and an unfavorable business environment, Yemen's private sector has historically suffered from structural vulnerabilities.** The predominance of the family-based business model and the large share of MSMEs have weakened

the private sector's resilience to shocks and crises. Meanwhile, inadequate infrastructure and support services, including limited electricity coverage, inadequate water supplies, and poor transportation and

<sup>134</sup> Private Sector: Vital Role in Times of War, Yemen Socio-Economic Update Issue 35, Central Statistical Organization (CSO), July 2018, [https://reliefweb.int/sites/reliefweb.int/files/resources/YSEU35\\_English\\_Final.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/YSEU35_English_Final.pdf).

telecommunications systems, have undermined the private sector's competitiveness. Insufficient work-force skills and a wide skills gap are serious challenges to productivity, along with the crowding-out effect of government spending on private consumption, the absence of a robust financial market, low levels of innovation, and the minimal use of information and communications technology (ICT).

**Recent estimates suggest that the private sector incurred US\$27 billion in direct and indirect losses during the first three years of the war.**<sup>135</sup> Moreover, 25 percent of all businesses closed after 2014, and over 80 percent of firms experienced a drastic drop in sales. Key informant interviews identified security issues in conflict zones, economic devastation and financial recession, and the physical destruction of firms as the main reasons for firm closures, while surviving firms faced interruptions of key services and a dwindling customer base. Firms downsized in response, with 52 percent shifting from either large to medium, medium to small, or small to micro during the conflict, and another 20 percent of firms relocated their operations, either domestically or abroad.<sup>136</sup>

**The 2020 Yemen Business Climate Survey Report found that profits fell at 45 percent of businesses between 2017 and 2019.** Survey respondents cited exchange-rate instability and a diminished number of customers as the main reasons for declining profits, and the non-payment of public salaries has weakened consumer purchasing power and negatively impacted business activities.<sup>137</sup> The disruption of public service delivery, costly domestic and imported inputs, loan restrictions, and substantial spending on taxes and other regulatory fees have placed a heavy burden on the private sector. Firms also face political instability, insecurity, the periodic suspension of exports, import restrictions, widening fiscal and monetary imbalances, rising levels of crime and informality, which forced almost 20 percent of firms to relocate their operations, both domestically and abroad. Businesses also face challenges pertaining to fuel scarcity, lengthy delays

at ports of entry, and increased insurance costs for ships coming into Yemen.<sup>138</sup>

**Some private actors have struggled, others have rebounded, and others yet have thrived.**

The fragmentation of Yemen, the country's economy, and state-institutions have opened several market opportunities for private sector actors to provide services that used to be provided by the state—most notably, as discussed above, fuel imports and distribution, the distribution of LPG, and other transportation services. The following table outlines patterns of consistency and changes for five key sectors in Yemen—the food, fuel, financial, transport, telecommunications, and LPG sectors.

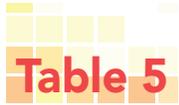
**The conflict has dampened international trade and deterred foreign investment.** Foreign investors and commercial traders find the investment and trade environments hard to navigate. FDI trends are poor even by the standards of low-income and conflict-affected countries, and net FDI inflows have been negative since 2011. As Yemen has a substantial binding overhang in its WTO commitments, it retains the ability to raise tariffs. The highest tariffs are applied to fish, fruits and vegetables, beverages and tobacco, coffee and tea, and animal products. However, due to porous borders and widespread informal trade, tariff revenue is likely well below what the statutory schedule would indicate. In addition, non-tariff measures have increased trade barriers since 2015 and became especially acute during the COVID-19 crisis, when restrictions were imposed on imports of goods deemed essential for the fight against the pandemic, including certain chemicals (see Table 5; Figures 52, 53).

<sup>135</sup> Promoting Partnership with the Private Sector, Yemen's Central Statistical Organization (CSO), Socio-Economic Update, Issue number 53, October 2020.

<sup>136</sup> *The Impact of Conflict on Private Enterprises Report*, WBG, 2019.

<sup>137</sup> *Yemen Business Climate Survey Report 2020, Impact of Conflict and COVID-19 on Private Sector Activity*, SMEPS, DFID.

<sup>138</sup> *The Impact of Conflict on Private Enterprises Report*, WBG, 2019.


**Table 5** Challenges and Opportunities for the Private Sector

Sector	Key Points
Food import <sup>a</sup>	<ul style="list-style-type: none"> <li>Major food importers that dominated the market before the conflict maintained and even increased their market share during the conflict.</li> <li>The decline of local wheat production increased dependency on wheat imports and created additional market opportunities for major wheat importers.</li> <li>The IRG and CBY-Aden were criticized for their management of the US\$2 billion deposit Saudi Arabia provided in March 2018 and for the letters-of-credit system that used funds from the deposit to underwrite critical food imports. Criticism included accusations of favoritism shown to certain food importers. Similar accusations of favoritism were levelled against the Houthis and the Payments and Foreign Currency Committee that manages access to foreign currency on behalf of the Houthis and in coordination with CBY-Sanaa.</li> </ul>
Fuel import <sup>b</sup>	<ul style="list-style-type: none"> <li>The privatization of fuel imports and distribution in Yemen saw private sector actors fill the gaps left by the state-run Aden Refinery Company and Yemen Petroleum Company.</li> <li>Previously marginalized or unknown fuel importers gained an increased market share in competition with fuel traders established before the conflict began.</li> <li>New players that own and operate prominent exchange companies entered the market.</li> <li>Political dynamics and competition between the Houthis and IRG heavily impacted fuel import and distribution dynamics.</li> <li>Diversion of fuel from non-Houthi to Houthi areas continued parallel-market trading.</li> </ul>
Financial <sup>c</sup>	<ul style="list-style-type: none"> <li>De-risking measures applied against Yemen banks weakened the banking sector, reduced rial and foreign-currency liquidity, and undermined confidence among Yemeni businesses and citizens.</li> <li>Banks that are less impacted by the challenges facing the formal banking sector continue to grow, including banks that offer Islamic banking services and did not invest in government Treasury bonds, as well as banks that record higher foreign-currency inflows either in the form of remittances or humanitarian funding.</li> <li>Money-exchange services have grown rapidly, with a rising number of licensed and unlicensed exchange companies.</li> <li>The increased importance of money-exchange companies for trade financing and salary payments has led to the emergence of working relationships between certain exchange companies and groups of traders, businesspeople, and foreign patrons.</li> <li>Money exchangers offer credit and saving services that are technically beyond the scope of what their licenses permit.</li> <li>CBY-Aden awarded several prominent market exchangers licenses to operate as microfinance banks in 2021.</li> <li>Financial service providers, particularly money exchangers, are frequently accused of currency speculation and arbitrage.</li> </ul>
Transport <sup>d</sup>	<ul style="list-style-type: none"> <li>Local conflict dynamics and economic competition between the Houthis and IRG negatively impact the movement of goods. Major supply routes have been severed, and the same goods may be taxed both by the IRG and the Houthis.</li> <li>Private logistics, transport, and trucking companies are growing, as illustrated by the expanding distribution of fuel and cooking gas.</li> <li>Fuel and liquified petroleum gas (LPG) truckers are gaining increased leverage due to the scarcity of skilled workers.</li> </ul>
Telecom <sup>e</sup>	<ul style="list-style-type: none"> <li>The IRG and the Houthis have both attempted to extract rents from prominent Yemeni telecom companies Sabafon and MTN Yemen.</li> <li>Sabafon relocated its headquarters to Aden after consistent pressure from the Houthis, which then appointed its own executives to operate Sabafon's systems.</li> <li>MTN sold shares to Emerald International Investment (2021) after deciding to pull out of Yemen due to the adverse business environment.</li> </ul>
LPG <sup>f</sup>	<ul style="list-style-type: none"> <li>The state-run Yemen Gas Company (YGC) has been marginalized in Houthi areas.</li> <li>The number of actors along the LPG supply chain has increased, with a growing number of private LPG transport companies and the imposition of Houthi supervisors and local leaders in the distribution and sale process in Houthi areas.</li> <li>LPG intended for non-Houthi areas has been diverted to Houthi areas.</li> <li>LPG is now imported but was not imported before the conflict.</li> </ul>

Source: World Bank Group research based on key informant interviews.

<sup>a</sup> [https://cdn.odi.org/media/documents/Food\\_security\\_in\\_Yemen\\_1\\_-\\_the\\_private\\_sector\\_and\\_imported\\_food\\_uTu5YXS.pdf](https://cdn.odi.org/media/documents/Food_security_in_Yemen_1_-_the_private_sector_and_imported_food_uTu5YXS.pdf); [https://cdn.odi.org/media/documents/Food\\_security\\_in\\_Yemen\\_2\\_-\\_the\\_role\\_of\\_the\\_private\\_sector\\_in\\_promoting\\_domesti\\_oHhIb93.pdf](https://cdn.odi.org/media/documents/Food_security_in_Yemen_2_-_the_role_of_the_private_sector_in_promoting_domesti_oHhIb93.pdf); <https://sanaacenter.org/publications/analysis/13577>; [https://www.acaps.org/sites/acaps/files/products/files/20201216\\_acaps\\_yemen\\_analysis\\_hub\\_food\\_supply\\_chain\\_0.pdf](https://www.acaps.org/sites/acaps/files/products/files/20201216_acaps_yemen_analysis_hub_food_supply_chain_0.pdf); <https://documents1.worldbank.org/curated/en/376891524812213584/pdf/125815-WP-PUBLIC-YemenReportFinalAprilcompressed.pdf>.

<sup>b</sup> [https://sanaacenter.org/files/Rethinking\\_Yemens\\_Economy\\_No4\\_En.pdf](https://sanaacenter.org/files/Rethinking_Yemens_Economy_No4_En.pdf); <https://sanaacenter.org/publications/analysis/10323>; <https://d2071andvip0wj.cloudfront.net/231-yemen-economic-conflict.pdf>; [https://www.acaps.org/sites/acaps/files/products/files/20210817\\_acaps\\_yemen\\_analysis\\_hub\\_fuel\\_prices\\_0\\_0.pdf](https://www.acaps.org/sites/acaps/files/products/files/20210817_acaps_yemen_analysis_hub_fuel_prices_0_0.pdf).

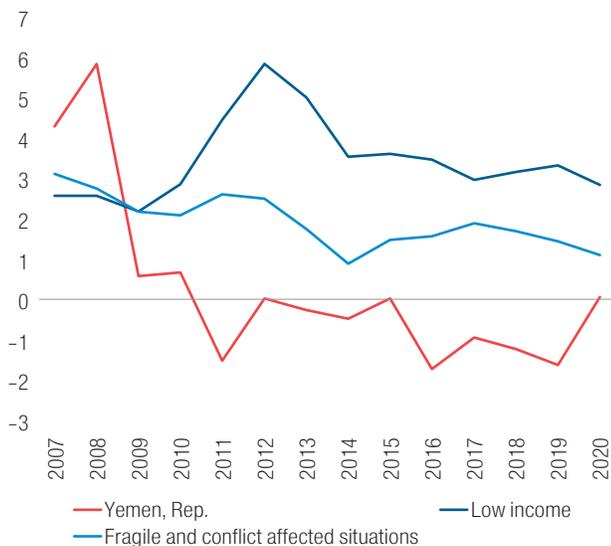
<sup>c</sup> ACAPS, "Yemen: Yemeni Financial Sector in December 2021," January 2022; <https://sanaacenter.org/publications/analysis/9948>; [https://cdn.odi.org/media/documents/Impact\\_of\\_conflict\\_on\\_the\\_financial\\_sector\\_in\\_Yemen\\_Jg6sNMp.pdf](https://cdn.odi.org/media/documents/Impact_of_conflict_on_the_financial_sector_in_Yemen_Jg6sNMp.pdf).

<sup>d</sup> [https://devchampions.org/uploads/publications/files/Rethinking\\_Yemens\\_Economy\\_No11\\_En-1.pdf](https://devchampions.org/uploads/publications/files/Rethinking_Yemens_Economy_No11_En-1.pdf); [https://sanaacenter.org/files/The\\_Gas\\_Crisis\\_in\\_Taiz\\_War\\_Mismanagement\\_and\\_Exploitation\\_en.pdf](https://sanaacenter.org/files/The_Gas_Crisis_in_Taiz_War_Mismanagement_and_Exploitation_en.pdf).

<sup>e</sup> [https://sanaacenter.org/files/Rethinking\\_Yemens\\_Economy-policy\\_brief\\_21.pdf](https://sanaacenter.org/files/Rethinking_Yemens_Economy-policy_brief_21.pdf); <https://developingtelecoms.com/telecom-business/operator-news/12332-mtn-group-exits-yemen-via-stake-sale-to-emerald-international.html>.

<sup>f</sup> [https://sanaacenter.org/files/The\\_Gas\\_Crisis\\_in\\_Taiz\\_War\\_Mismanagement\\_and\\_Exploitation\\_en.pdf](https://sanaacenter.org/files/The_Gas_Crisis_in_Taiz_War_Mismanagement_and_Exploitation_en.pdf).

**Figure 52** Net FDI Inflows, 2007–2020 (% of GDP)

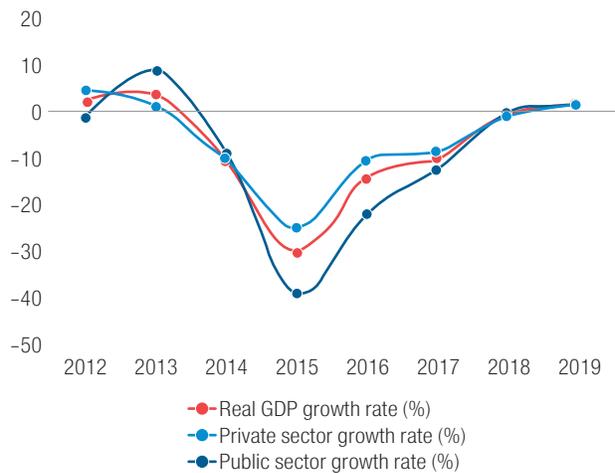


Source: World Bank, World Development Indicators.

**While the conflict has had an extensive and deeply negative impact on the business environment, about 75 percent of firms are still operating, and the private sector dominates economic activity.** The public sector's negative contribution to GDP growth has been nearly twice that of the private sector, and the private sector's share in real GDP increased from 62.3 percent in 2014 to 70 percent in 2016. Data from the CSO show the private sector's growing involvement in numerous activities, including manufacturing, construction, and services, despite the enormous challenges faced by firms. The resilience of the private sector limited the economic downturn caused by the conflict, and the continued provision of goods, services, and job opportunities has helped shore up food security and mitigate the damage to physical assets and human capital (see Box 3).

**The private sector has also bolstered community resilience and supplied vital logistical, storage, and distribution services for humanitarian relief actors.** Private firms execute cash transfers from donors to beneficiaries, including members of vulnerable groups, in partnership with

**Figure 53** The Conflict-Induced Economic Contraction and the Expanding Role of the Private Sector, 2012–19



Source: CSO, National Accounts Bulletin 2019.

international organizations such as UNICEF and the World Food Program. Private firms worked closely with international agencies to address the COVID-19 pandemic through the International Initiative on COVID-19 in Yemen.

## Aid Dependency

**Yemen continues to experience one of the world's most severe humanitarian crises, which has been marked by extreme levels of food insecurity.**

Senior aid officials have repeatedly warned of the potential for famine if vital trade routes are blocked or if donors do not fund multibillion dollar aid appeals conducted by the UN and nongovernmental organizations.<sup>139</sup> Fundraising for Yemen peaked in 2018, when the UN response plan and other funding sources mobilized some US\$5.2 billion in aid. By 2022, with COVID-19 driving a pullback in overseas development assistance and the war between Russia

<sup>139</sup> Nichols, Michelle, 'Countdown to catastrophe' in Yemen as U.N. warns of famine – again, Reuters, 11 November 2020.

### BOX 3: ALTERNATIVE ECONOMIC OPPORTUNITIES IN WARTIME YEMEN

The private sector has not replaced enough of the jobs lost during Yemen's war to prevent a major unemployment crisis. Yemen's economic decline has placed enormous pressure on Yemeni households, and especially on young people, to pursue whatever income opportunities are available. These include joining an armed group, engaging in various illicit or informal activities, and starting a new business.

- **Joining an armed group:** For many fighters in Yemen's war, the decision to take up arms was a matter of financial necessity, particularly among those with no previous military experience. In many cases, armed groups appear to offer more reliable pay than civilian state jobs or private firms. For example, while the Houthis have paid civil servants irregularly or not at all, it has paid its fighters' salaries consistently and offered additional incentives, such as providing cooking-gas cylinders at the lower "official price" to their households. In Yemen's central, southern, and eastern governorates, anti-Houthi forces have received varying degrees of foreign patronage during the conflict, providing an added incentive to take up arms. From 2016 to 2019, UAE-backed groups offered some of the highest and most regular salaries. However, this changed after 2019, when the UAE scaled back its involvement in the conflict.
- **Engaging in illicit or informal activities:** The marginalization of the YPC and YGC has given rise to a flourishing parallel market for fuel in Houthi areas and, to a lesser extent, in IRG areas as well. Firms and individuals not previously involved in either the transport, distribution, or sale of fuel have entered different stages of the supply chain and seek to generate profit from selling fuel in local markets where the pump price exceeds the official price. For example, an individual who owns a suitable truck can purchase fuel in Aden or Mukalla and ship it to Houthi areas where fuel prices are higher. Within Houthi areas, roadside vendors sell petrol or diesel in plastic bottles. Smuggling weapons, people, and drugs predates the conflict but appears to have grown in magnitude amid rising poverty rates and weak rule of law. The smuggling of illicit material out of Yemen has expanded to include historical artifacts and exotic plants and animals. As the volume of illicit trade has increased, so too have opportunities in the sector, one of the few that offer a substantial and reasonably stable income.
- **Starting a new business:** With public-sector employment unreliable and various sectors struggling to maintain pre-conflict output levels, many workers have turned to entrepreneurship to diversify their income or replace lost wages. While starting a business is often a coping strategy, several sectors have flourished during the conflict. For example, solar energy expanded by over 50 percent between 2015 and 2017 as the national electricity grid deteriorated, though the subsector's growth has since levelled off. Solar energy grew fastest in the northern and northwestern governorates under Houthi control.

and Ukraine forcing Western countries to reprioritize aid, support to Yemen had plunged to US\$2.4 billion, leading aid agencies to issue renewed warnings about the potential for a humanitarian disaster.<sup>140</sup>

**The billions of dollars of aid delivered to Yemen since 2015 have greatly boosted the country's economy.** In six of the eight years of the war, aid has exceeded 10 percent of Yemen's estimated GDP, peaking at 24 percent in 2018. While no reliable disaggregation of aid expenditures is available, relief agencies estimate that about 20–30 percent of external funding enters Yemen in the form of hard currency to cover payroll, operating costs, and local procurement, as well as cash transfers.<sup>141</sup> These inflows likely represented credits to Yemen's current-account balance of between US\$460 million and US\$1.5 billion during 2016–2021. In addition, aid agencies finance about 12 percent of Yemen's cereal imports, easing the hard-currency burden on importers.<sup>142</sup>

**A large share of foreign aid finances emergency relief.** Millions of Yemeni households receive

either in-kind assistance or cash transfers. In 2020, the World Bank estimated that cash transfers distributed by the World Bank and UNICEF benefitted 1.4 million households. In-kind food assistance provided by the World Food Program (WFP) reached another 1.4 million households, while other aid agencies provided assistance to an additional 182,000 households.<sup>143</sup> World Bank staff found that "the combined reach of humanitarian and development programs is enough to cover the entire Yemeni population" but noted that overlapping assistance to some households meant that other households did not receive assistance.<sup>144</sup>

<sup>140</sup> Based on OCHA estimates of funding for aid routed through the UN and other aid agencies, and World Bank GDP estimates.

<sup>141</sup> Key informant interviews, Jan–June 2022.

<sup>142</sup> Al-Amman, Ali; Ghorpade, Yashodhan, *Social Protection at the Humanitarian-Development Nexus: Insights from Yemen*, World Bank, April 2021.

<sup>143</sup> *Ibid.*

<sup>144</sup> *Ibid.*

**Yemen badly needs aid. But a growing body of evidence suggests that large-scale humanitarian aid delivered over an extended period can weaken growth and foster dependency.**<sup>145</sup>

While continued aid is vital to sustain basic consumption and prevent a humanitarian disaster the country risks falling into an aid dependency trap, with significant ramifications for the post-conflict macroeconomy and humanitarian situation; and for local markets and development. In addition, in-kind assistance can distort and weaken local markets, although cash transfers are often less effective when local markets are failing. Cash transfers are also cheaper to deliver than in-kind aid. To prevent aid dependency from becoming more widespread and entrenched, aid agencies can (i) pivot from in-kind to cash-based assistance, (ii) work with the private sector to address local needs and explore opportunities for collaborative development; and (iii) expand local development and cash-for-work programming.<sup>146</sup>

## The Hydrocarbon Sector

**Prior to the war, the oil and gas sector was the main source of government revenue, exports, and foreign exchange.** The hydrocarbon sector accounted for 88 percent of pre-war FDI, which in turn accounted for 1.5 percent of GDP,<sup>147</sup> but the government missed numerous opportunities to maximise the sector's potential. In 2005 and 2011, the government refused to renew Production-Sharing Agreements (PSAs) with international oil firms and instead took direct control of several oilfields, apparently in pursuit of increased short-term revenues. Fiscal crises and the prioritization of short-term cash-flow contributed to chronic underinvestment in productive infrastructure and capital assets. Meanwhile, oil firms and the government failed to reach an agreement on how to share profits from associated gas, which was either reinjected into oilfields or flared rather than being used to produce electricity, easing the fiscal burden and improving sector efficiency.

**Liquefied natural gas (LNG) exports boosted export revenues in the 2010s. The Yemen LNG project launched as a partnership between the Yemeni government and several major international oil companies in 2005.** The project represented the single largest FDI inflow in Yemen's history at about US\$4–5 billion, and it started producing and exporting LNG from a non-associated gas field in Marib in 2009. By 2014, gas exports were generating about 13 percent of hydrocarbon revenues,<sup>148</sup> but international oil and gas investors had become wary of Yemen. As noted in the 2014 CEM, "investment in production is limited by a deficient legislative framework, empty government coffers, and security threats to exploration firms... The business environment is characterized by weak governance and corruption, as well as by the influence of well-entrenched networks." The impact on foreign investors was noticeable—successive post-2007 bidding rounds failed to draw substantial and credible interest. The Yemen LNG project encompassed about two-thirds of Yemen's 430 billion cubic feet of proven gas reserves, and was prioritized over a proposed gas-to-power system for the remaining third could have produced inexpensive electricity that alleviated Yemen's dependence on imported heavy fuel oil. Political gridlock stalled progress on the gas-to-power project in the years before war broke out.

**An underdeveloped downstream refining and distribution industry led to rising import dependence.** The country's only major refinery, in Aden, was not equipped to process the heavier grades of crude oil produced at nearby oilfields and met less than half of local liquid fuel demand. Liquefied petroleum gas (LPG) produced at a simple

<sup>145</sup> See for e.g., Clemens et. al., Counting Chickens when they Hatch: Timing and the Effects of Aid on Growth, *The Economic Journal*, 122(561), 2012.

<sup>146</sup> <https://www.wilsoncenter.org/article/democratizing-development-yemen-beyond-food-aid>.

<sup>147</sup> *Yemen: Unlocking the Potential for Economic Growth*, World Bank, October 2015.

<sup>148</sup> IMF (2014).

refinery in Marib met most local gas needs. As Yemen became increasingly dependent on imported fuel, exorbitant subsidies imposed a mounting fiscal burden. In 2013, income from domestic oil and gas sales covered only 70 percent of the cost of subsidies. Some fuel subsidies were lifted in 2014, but too quickly and without adequate compensatory measures in place, sparking violent public demonstrations which eventually led to the conflict.

**Oil output remains far below pre-war levels but could increase significantly given adequate investment.** In 2014, Yemen produced an estimated 167,000 barrels per day of oil, but by 2021 oil production had fallen to less than 60,000 barrels per day and LNG exports remained frozen. Government and industry officials estimate that developing four oil blocks in Shabwa and Hadramawt governorates could boost oil output by around 20,000 barrels per day, more than one-third of current production, but will require a significant capital investment. The state-owned oil companies Safer Petroleum and PetroMasila claim to lack the funds to do more than sustain basic production and export operations. Further increases in output are likely to be limited and contingent on the availability of investment, technical capacity, and equipment. Yemen currently lacks all three. At least seven international oil and gas firms have either relinquished their stakes in oilfields to the government or sold their interests. Some of these firms claim that they did so after the IRG repeatedly blocked their efforts to resume exports. International oilfield-service companies vacated Yemen at the outset of the war. Some removed drilling and other equipment from the country, while others sold drilling rigs to local firms.

**LNG represents an unrealized potential revenue stream.** With a nameplate capacity of 6.7 million tons per year, the Yemen LNG project's revenues could have exceeded US\$4 billion in 2022 based on average international benchmark prices. While the IRG would have received only a fraction of this sum, its fiscal contribution would have been considerable given the IRG's budget constraints.

However, internal political disagreements and security threats to LNG facilities have prevented the resumption of LNG exports.<sup>149</sup>

**As international firms withdraw, Yemeni firms have stepped up investments in the oil and gas sector.** Since 2019, one of Yemen's largest business conglomerates, has expanded its domestic oil and gas holdings.<sup>150</sup> The company has increased its stake in a functioning oilfield and is investing heavily in an effort to double its output. The company has also bought the licenses for two additional fields and intends to invest to bring them to commercial viability. This and other companies are discussing further acquisitions in the sector.

**Foreign firms are unlikely to invest in Yemen until peace treaties are signed and visibly effective, and a functioning government has been in place for a protracted period.** Even under these circumstances, international oil companies may be reluctant to operate in Yemen. For the Yemeni private sector, however, the environment is different, as national firms can draw on their local knowledge of the political, legal, and security context to mitigate risk. As one Yemeni businessman stated in an interview conducted for this CEM, "We know who to talk to and how to talk to them, that is our advantage." Moreover, Yemeni firms are not obliged to comply with international standards, which lowers their operating costs and exposure to reputational risk.

### *Renewables Potential*

**A growing body of anecdotal evidence suggests that fuel and electricity shortages and rising energy costs have encouraged the adoption of renewable energy across the country,**

<sup>149</sup> Bank, consultant, key informant interviews, January 2022-October 2022.

<sup>150</sup> The Hayel Saeed Anam Group of companies is Yemen's largest multinational company by far. Still a family owned and managed business, within Yemen it manages assets in import / export, banking, insurance and food manufacturing among others. See: [www.hsagroup.com](http://www.hsagroup.com).


**Table 6** Potential Renewable Energy by Source

Renewable Energy Source	Output (MW)	Technical Potential	
		Gross (MW)	Practicable (MW)
Biomass – Landfill Gas	10	8	6
Geothermal	304,000	29,000	2,900
Hydropower – Major Wadis	12–31	11–30	–
Solar Electric (CSP)	2,466,000	1,426,000	18,600
Solar Thermal	3,014	278	278
Wind	308,722	123,429	34,860

Source: Ministry of Electricity and Energy “Renewable Energy Strategy and Action Plan Study Report” (2008).<sup>a</sup>

<sup>a</sup> Oliver Hiel, Werner Klaus, Richard Lawless, Tobias Leschinsky, Romeo Pacudan, Kuno Schallenberg, Axel Slogsnat and Bernhard Wunder, “Ministry of Electricity The Republic of Yemen: Renewable Energy Strategy and Action Plan. Task 1: Renewable Energy Resource Assessment,” draft report, Lahmeyer International, August 2006, <https://moe-ye.com/site-ar/wp-content/uploads/2019/06/>.

**particularly in Houthi areas.** Even before the conflict, weak public electricity utilities, inconsistent fuel supplies and pricing, and falling prices for photovoltaic solar panels had encouraged the growth of renewables. This shift has accelerated over the course of the conflict, as the public electricity grid largely ceased to function, while the high cost of fuel made private generators less feasible.<sup>150</sup> In the agricultural sector, many farmers have turned to solar-powered pumping systems. Nongovernmental organizations also used solar energy to power health and education facilities (see Table 6).<sup>151</sup>

**Investments in renewable energy could help reduce the cost of electricity.** Renewable energy offers an opportunity for the IRG and the Houthis to reduce the fiscal burden of electricity production, which is subsidized both directly and indirectly via low rates of collection efficiency. Increased solar energy usage, particularly in the northern and north-western governorates, was largely borne out

of necessity, as the public electricity grid effectively ground to a halt. The high cost of fuel and recurring supply issues made private generator usage less feasible. For households, transitioning to solar power or upgrading existing solar energy systems would ease pressure on household budgets. The Ministry of Electricity and Energy’s 2008 Renewable Energy Strategy and Action Plan still offers a useful guide for future efforts to increase renewable energy usage in Yemen. The country has significant wind and geothermal energy potential, though developing geothermal power would require a considerable upfront investment and a long lead time. Renewable energy sources other than solar are unlikely to be developed while the conflict continues.

<sup>151</sup> Ibid.

<sup>152</sup> <https://reliefweb.int/report/yemen/solar-energy-helps-yemeni-hospitals-save-lives>; <https://yemen.un.org/en/20029-solar-power-can-safeguard-future-thousands-yemeni-children>.

## Yemen's Transformed Political Economy

### Fragmented Institutions, Heterogeneous Outcomes

**Yemen is now divided into at least six distinct areas of political-military control.**<sup>153</sup> These include: (i) the northwest, where the Houthis and their allies rule Yemen's major population centers; (ii) Taiz, which is controlled by tribal, political and military factions formerly allied with the Hadi government and with close ties to Islah; (iii) Marib governorate and northern Hadramawt governorate, which are held by a similar coalition of forces; (iv) Lahij, Aden, Abyan governorates and Socotra, where the pro-independence Southern Transitional Council (STC) and broadly aligned groups are the dominant force; (v) southern Hadramawt governorate, Shebwa and al-Mahra governorate, which are contested by the STC but maintain their own complex political arrangements;<sup>154</sup> and (vi) the Red Sea port city of Mokha and surrounding areas, which are held by Tareq Saleh's National Resistance Forces. The Presidential Leadership Council formed in April 2022 ostensibly unites the different factions in non-Houthi areas into a single governing body. But recent literature on the subject, infighting over Shebwa in July 2022, and key informant interviews suggest that the divisions described above remain in effect (see Map 9).

### Institutions have become increasingly heterogeneous over the course of the conflict.

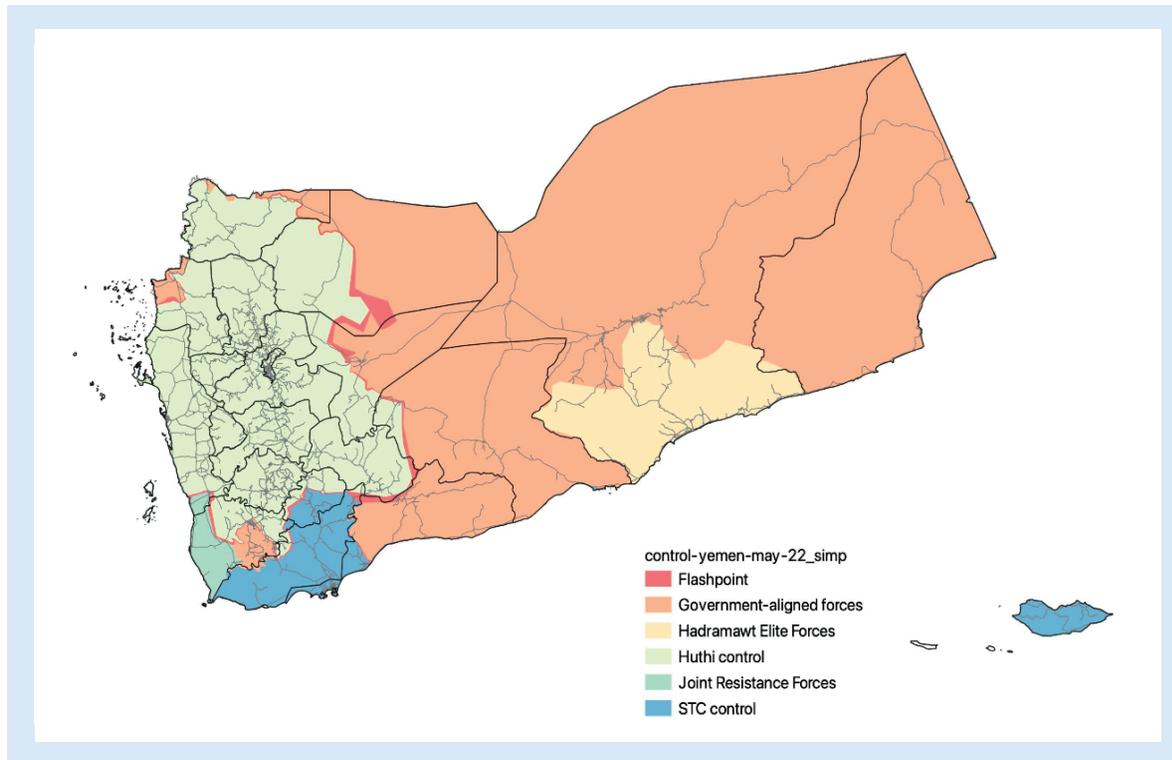
The country's different areas of control increasingly resemble autonomous regions, each with its own unique military, security, and economic management arrangements, as well as varying levels of public service capabilities. Key informants describe substantial differences in security standards, service provision, economic transactions, law enforcement, and the overall governance culture in different parts of the country.

**National institutions are divided and have limited authority.** Prior to the war, state institutions were largely centralized and managed by line ministries in Sanaa. After the Houthi takeover, the Houthis largely kept the existing institutions in place. While many technical staff predate the conflict, more senior positions have become increasingly "Houthified" over time, creating an intricate network of formal and informal

<sup>153</sup> Based on maps from the Sanaa Center for Strategic Studies, Yemen Polling Center, International Crisis Group, European Council on Foreign Relations, Washington Institute for Near East Policy.

<sup>154</sup> For example, southern Hadramawt is controlled by political-military factions aligned with the Hadramawt Elite Forces, which have sought to remain relatively neutral in disputes between the IRG and the Southern Transitional Council.

## Map 9 Zones of Control, January 2022



Source: International Crisis Group, May 2022).

power relationships.<sup>155</sup> These institutions' authority is not recognized in non-Houthi areas, where a patchwork of national and local authorities hold sway.

**The Houthis are perceived to have imposed relatively uniform rules in their areas, establishing through intimidation and force what appears to be a hybrid police state that incorporates both pre-war public institutions and a system of Houthi-centric supervision.**<sup>156</sup> While official data are not available, anecdotal evidence describes the Houthis as a highly efficient collector of taxes and custom duties. However, the Houthis lacks access to oil and gas, the principal source of Yemen's pre-war fiscal revenue. Civil-service salaries are paid sporadically at best, and public investment is negligible. The Houthis have largely neglected public service delivery and many of the basic functions of the state, except security. UN agencies and a small number of foreign nongovernmental organizations

have filled some of these gaps.<sup>157</sup> But aid flows have fallen, in part due to fears over Houthi aid manipulation and diversion, and challenging relations with some international organizations.

**The IRG has not fully rebuilt central state institutions in a uniform manner.**<sup>158</sup> Ministries

<sup>155</sup> Bank staff, consultant key informant interviews, Jan. 2022–October 2022. See also Joshua Rogers, *Changing Local Governance in Yemen: District and governorate institutions in the areas under Ansar Allah's control*, Berghof Foundation Working Paper, December 2020.

<sup>156</sup> *Truce Test: The Houthis and Yemen's War of Narratives*, International Crisis Group, 29 April 2022.

<sup>157</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Entrenched Power: The Houthi System of Governance*, Sanaa Center for Strategic Studies, June 2022.

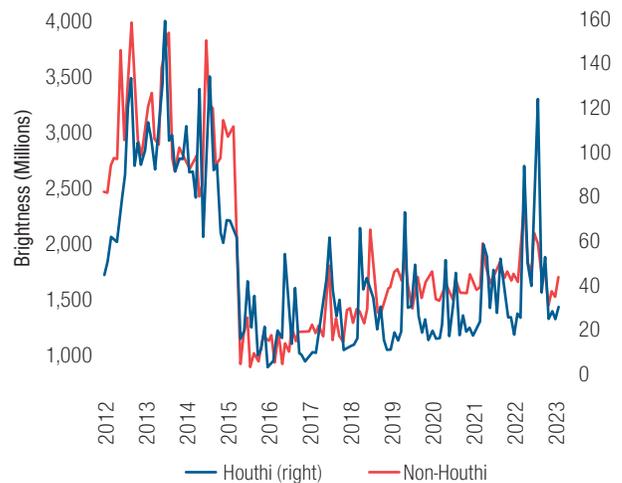
<sup>158</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Letter dated 22 January 2021 from the Panel of Experts on Yemen addressed to the President of the Security Council*, 22 January 2021.

struggled to link branches throughout the country, and key informants reported that the government was unable to establish full authority over local branches and personnel.<sup>159</sup> When governance and security are relatively strong in IRG areas, it is usually because local authorities, in coordination with local power centers including tribes, have taken control. Governance is best where local resources are available to fund expenditures, or external actors have chosen to underwrite the cost of local security and governance. Even when ministries have managed to retain authority over local branches, they often lack the resources to finance projects or even to cover the cost of essential procurement and personnel.<sup>160</sup> When the government has been able to access funds, questions have been raised about the efficacy and transparency of their distribution.<sup>161</sup> For example, the mechanism for collecting and distributing oil-export revenues is opaque, with government officials claiming that these revenues primarily finance operating costs, fuel imports for electricity generation, and a recent series of foreign-exchange auctions.

**Key informants dispute the popular claim that Houthi areas are better governed than other parts of the country, citing the authoritarianism of the Houthis' rule, as well as its unwillingness or inability to provide public goods.** Satellite data on the economic recovery, cited below, further undermine such claims; and support the idea that while the Houthis' governance is harsh and therefore highly visible, it is unable or unwilling to deliver public goods.

**Likely due to a combination of differences in governance capabilities and uneven access to hydrocarbon resources, nighttime illumination data indicate that the economic recovery in non-Houthi areas has outpaced improvements in Houthi territory.** Subnational GDP estimates based on nighttime illumination indicate that economic activity has recovered faster in non-Houthi areas. While light emissions in some regions rebounded relatively quickly, illumination in other areas remains

**Figure 54** Population-Adjusted Nighttime Illumination in IRG and Houthi Areas Each January, 2012 to 2023



Source: World Bank.

far below pre-conflict levels. All areas of Yemen experienced a sharp reduction in nighttime illumination at the onset of the conflict; however, while both curves have slowly recovered, non-Houthi areas have recovered faster than their Houthi counterparts. Satellite images show that the area around Aden was among the fastest to recover between 2015 and 2018. Information on food security and employment outcomes also indicate better living conditions in IRG areas than in Houthi areas (see Figure 54).

**Nighttime illumination data at the subnational level indicate that the Houthis have neglected the less politically or strategically important areas under its jurisdiction, likely worsening poverty**

<sup>159</sup> Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022. See also: *Letter dated 22 January 2021 from the Panel of Experts on Yemen addressed to the President of the Security Council*, 22 January 2021.

<sup>160</sup> *IMF Staff Concludes Visit on Yemen*, IMF, 3 June 2021; World Bank key informant interviews, Jan. 2022-Oct. 2022.

<sup>161</sup> *Beyond the Business as Usual Approach: Combatting Corruption in Yemen*, Sanaa Center for Strategic Studies, November 2018.

**and food security among marginalized communities.** Nighttime illumination has declined in four key Houthi-controlled areas: Al Raymah, Al Mawhit, Hajja, and Saada governorates. The first two are the least populous governorates under full Houthi territory. The latter two are an important political base for the Houthis, but they are also situated along the border with Saudi Arabia, which has been an active front throughout the conflict.

**IRG areas include several notable growth centers.** Governance and development outcomes in IRG areas have been extremely heterogeneous. In Marib, for example, local authorities have overseen the rapid development of infrastructure, healthcare, and education, while managing to provide robust local security, by drawing on revenues from nearby oil and gas fields and refineries. In late 2015, Marib decided to withhold locally generated revenues from the CBY, which was headquartered in Sanaa at the time. These revenues were primarily from crude oil and liquified petroleum gas produced at Marib's Block 18, which was managed by the state-run Safer Exploration & Production Operations Company (SEPOC), commonly known as SAFER. Marib authorities did not start sharing locally generated revenues with CBY-Aden until mid-2019 (see Map 10).<sup>162</sup>

**The eastern governorate of Al-Mahra, which borders Oman and Saudi Arabia, has become a key transit point for maritime and cross-border trade.** The volume of maritime traffic and trade flows across Al-Mahra's land border with Oman has increased significantly during the war.<sup>163</sup> Rising trade has boosted locally collected import taxes and customs revenue,<sup>164</sup> and Al-Mahra's authorities halted revenue transfers to CBY-Aden for an extended period between 2018 and 2020.<sup>165</sup> Nighttime illumination data suggest that Al-Mahrah is a rare example of a governorate in which economic growth has significantly surpassed pre-war levels since 2015 (see Figure 55).

**Economic losses in IRG territory have been concentrated in areas where control overlaps**

**with the Houthis and frontline fighting has been most intense.** In Taiz, local conflict and the severing of road access have constrained livelihoods opportunities, especially among residents of Taiz city. With travel into Taiz and between Houthi and non-Houthi areas of Taiz governorate restricted amid the continued threat of violence, access to essential services has been sharply curtailed, and the price of goods in Taiz city has increased significantly. While the Houthis extract considerable tax revenue from Taiz due to their control of the industrial center of Hawban, the conflict has severely undermined the local economy. Nevertheless, nighttime illumination data show that Taiz city has staged a gradual economic recovery, though it continues to lag other governorates in Houthi and non-Houthi areas (see Figures 56–58).

**Elsewhere, the picture is more mixed.** In southern Yemen,<sup>166</sup> the STC has focused largely on securing its areas and has struggled to establish robust governance or deliver essential services. As a demonstration of trust and good faith toward the STC and the population under its control, the IRG and the PLC have worked to reestablish the electricity supply in Aden, which is the IRG's temporary capital but has been under de facto STC control

<sup>162</sup> [https://devchampions.org/uploads/publications/files/Rethinking\\_Yemens\\_Economy\\_No2\\_En.pdf](https://devchampions.org/uploads/publications/files/Rethinking_Yemens_Economy_No2_En.pdf). In mid-2017 Marib followed in neighbouring Hadramawt's footsteps and secured a negotiated, individual agreement with IRG defining that 20 percent of the export revenues generated from crude oil produced at Marib's Block 18 (and then exported via the Rudum/Nushayma export terminal in Shabwa) would go to Marib's local authorities.

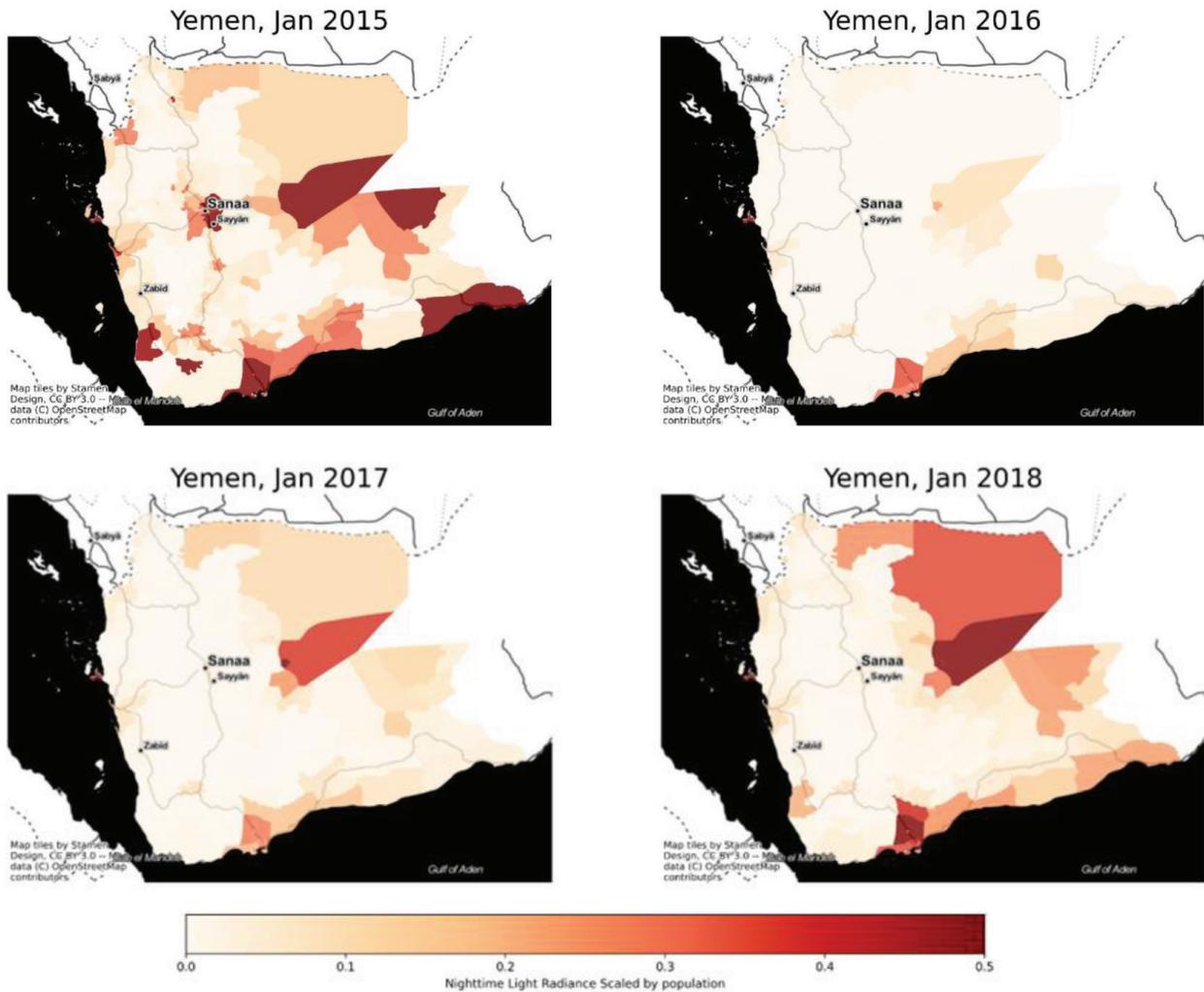
<sup>163</sup> Source: Sanaa Center for Strategic Studies, Yemen Arabian Sea Ports Corporation, ACAPs. <https://sanaacenter.org/publications/analysis/7606>; <https://www.yaspc.co/en/statistics/port-of-nashtoon/>; <https://yemen.yeti.acaps.org/imports-exports/>; [shorturl.at/fsLN0](https://shorturl.at/fsLN0).

<sup>164</sup> See al-Sewari, Yahya, *Yemen's Al-Mahra: From Isolation to the Eye of a Geopolitical Storm*.

<sup>165</sup> *Ibid.* Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022.

<sup>166</sup> Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022.

**Map 10** Population-Adjusted Nighttime Illumination in Western Yemen Each January, 2015 to 2018



Note: Units are nanoWatts/cm<sup>2</sup>/sr per capita.

Source: World Bank, TBC.

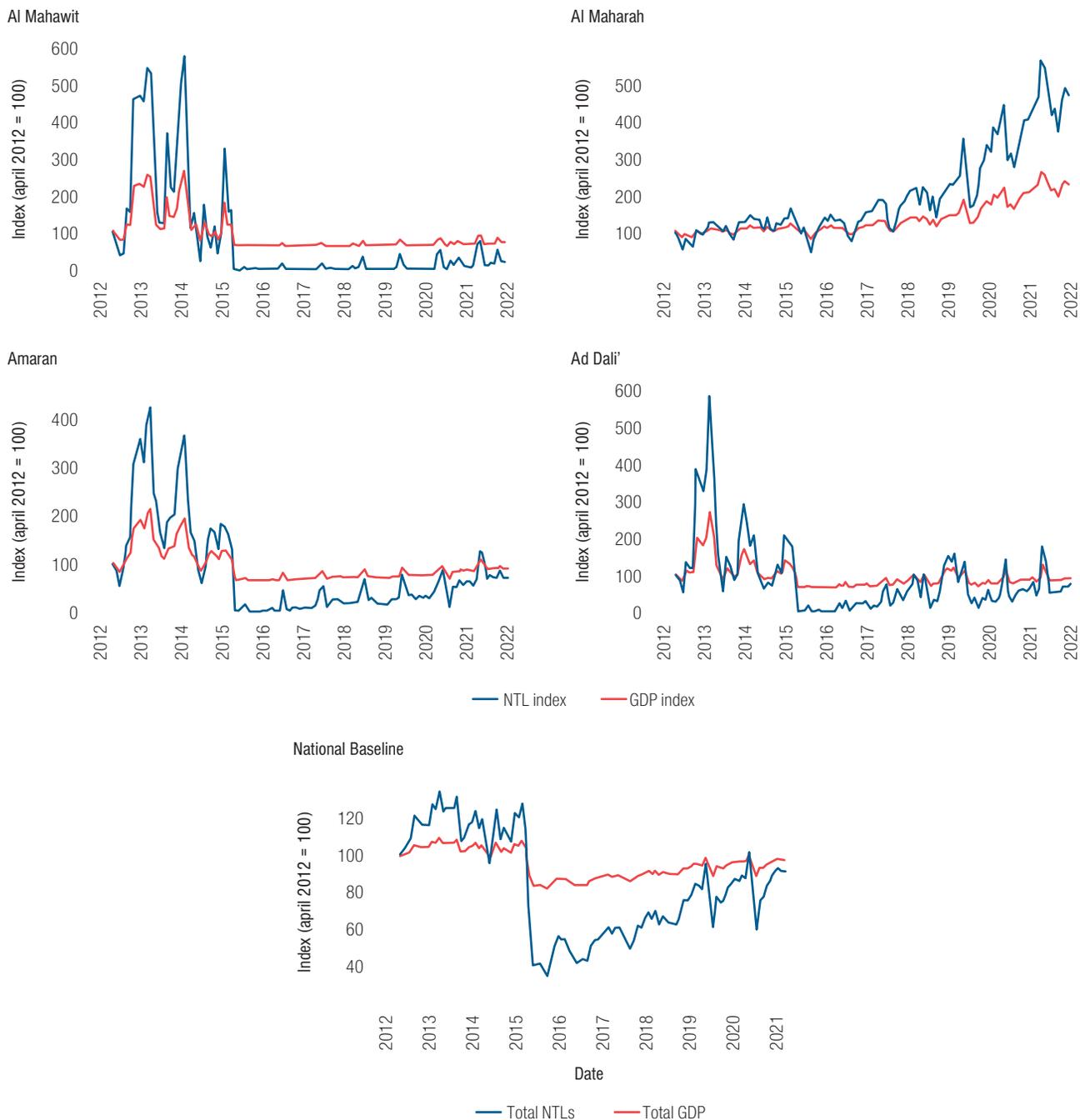
since 2019. Along with other groups such as the National Resistance Forces on the Red Sea coast and the Salafist-oriented Giants Brigades, the STC appears to rely on external support both for its military operations and civilian governance functions.<sup>167</sup>

**Nighttime illumination data show significant variations in the growth patterns of other southern governorates.** Abyan governorate, which was contested by STC- and IRG-affiliated forces from 2019 through 2022, suffered apparent economic contractions in 2015 and 2019, from which it has

yet to recover. Shabwa governorate, which was also contested by STC and IRG forces in 2019, subsequently experienced significant growth, likely due to an IRG revenue-sharing scheme with local authorities. Economic output in al-Dhale, the site of one of the conflict's most active fronts, appears to remain below its 2014 level. Hadramawt governorate, which has not been directly affected by the national conflict but

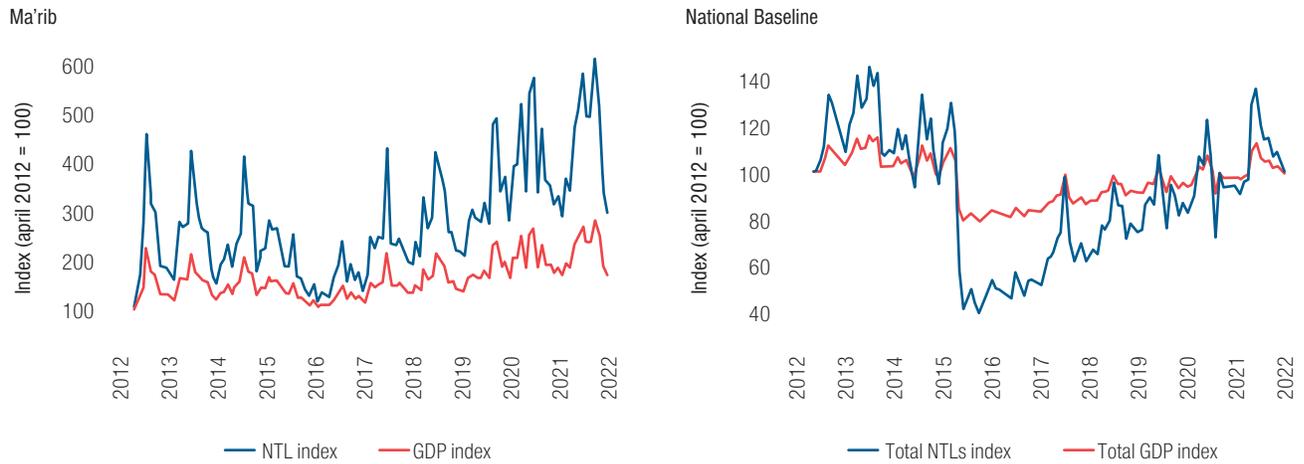
<sup>167</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022.

**Figure 55** Nighttime-Illumination-Based GDP Estimates for Hajja, Saada, Al Raymah and Mahwit Versus the National Baseline, 2012-2022



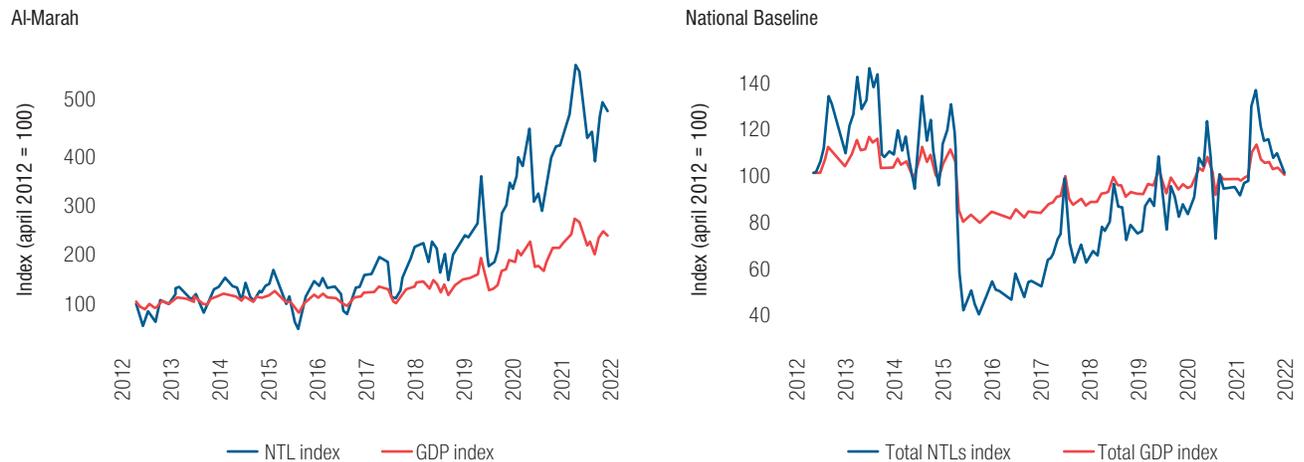
Source: World Bank Yemen Mobile Phone Survey Monitoring Round I.

### Figure 56 Nighttime Illumination and GDP Estimates, Marib Versus National Baseline



Source: World Bank, TBC.

### Figure 57 Nighttime Illumination and GDP Estimates, Al-Marah Versus National Baseline



Source: World Bank, TBC.

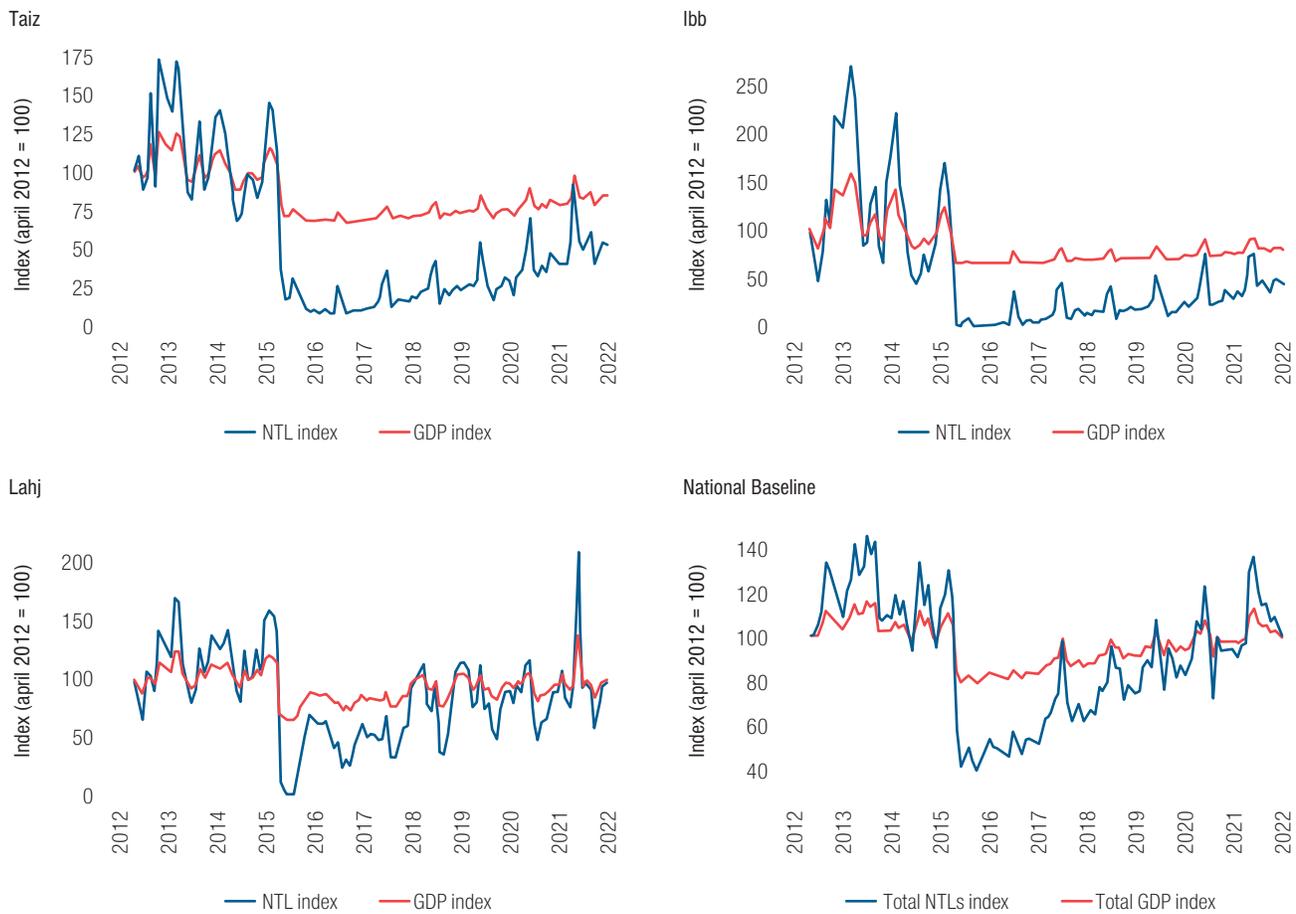
suffered a series of local battles between 2015 and 2016, appears to have experienced a modest contraction and then quickly recovered to pre-war output levels, likely due to its combination of a busy port and oil and gas resources. The island of Socotra, meanwhile, has seen its economic output nearly double over the course of the conflict, likely due to significant investment from the Saudi-led coalition and a growing military presence on the island (see Figures 59–61).

### Old Problems in New Forms: Rent-Seeking, Patronage, and Corruption

**In pre-war Yemen, political stability was predicated on rent sharing among elites, which limited the incentives for open conflict.**<sup>168</sup> Rents included access to economic

<sup>168</sup> See *Yemen, Unlocking the Potential for Economic Growth*, World Bank, October 2014.

### Figure 58 Nighttime Illumination and GDP Estimates, Taiz and Comparators



Source: World Bank, TBC.

opportunities via the granting of import licenses and other permits, the allocation of political positions to family members, and the diversion of resources to key leaders through the corruption of the military payroll.<sup>169</sup> Most patronage rested, directly or indirectly, on oil rents. The system privileged military and tribal leaders who had the capacity to directly threaten the authority of the state, and it created strong incentives for fuel theft, smuggling, bribery, extortion, and abuse of the public investment budget.

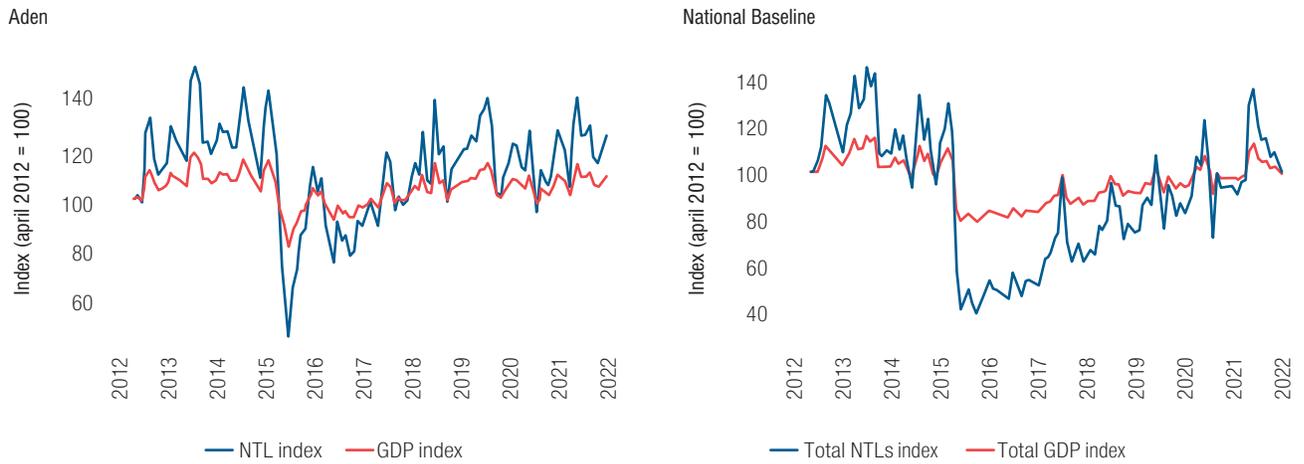
**While the conflict has reshaped Yemen's patronage systems around different actors and power centers, corruption remains prevalent.**

Since 2016, rival factions have increasingly competed to control financial and trade flows, as well

as the country's dwindling hydrocarbon resources. Lower oil revenues coupled with the fragmentation of territory and institutions have driven a shift in the ways rival parties generate income, seek rents, and distribute patronage. Oil rents can be extracted relatively easily, though exports can only be sold legally by the IRG. By contrast, tax rents primarily reflect the size of the economy under each group's control. Most locally generated income likely goes to sustaining high-level political and tribal alliances and to prosecuting the war. Key informants report that the clearest evidence of the existence

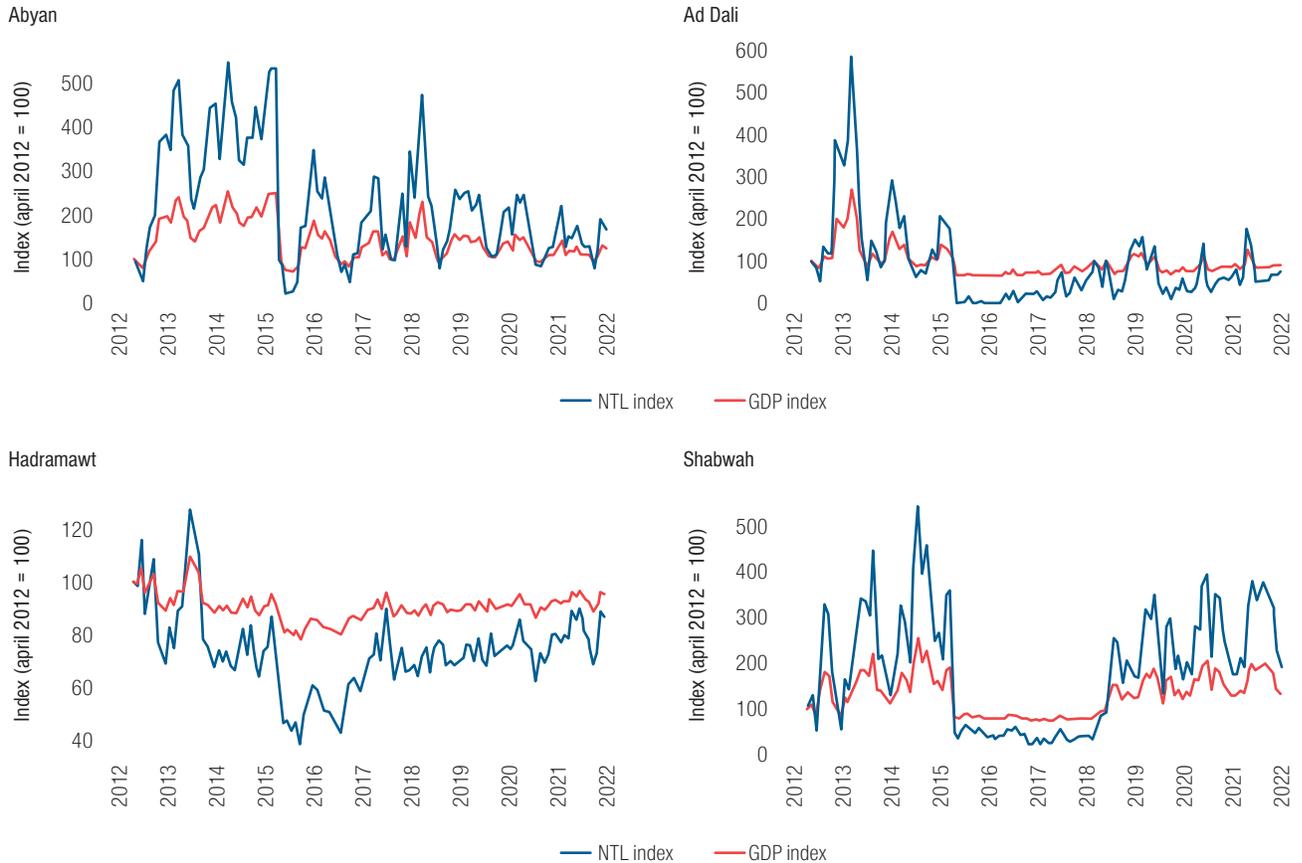
<sup>169</sup> Ibid. See also: *Yemen Corruption Assessment*, United States Agency for International Development, September 2016.

**Figure 59** Nighttime Illumination and GDP Estimates, Aden Versus National Baseline



Source: World Bank, TBC.

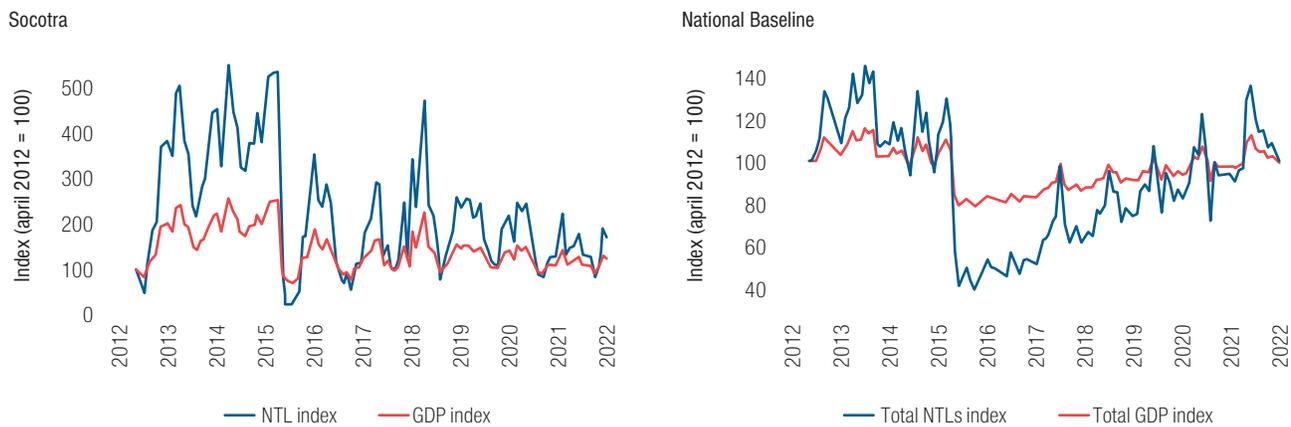
**Figure 60** Nighttime Illumination and GDP Estimates, Various Governorates Versus the National Baseline



Source: World Bank, TBC.

(continued on next page)

**Figure 60** Nighttime Illumination and GDP Estimates, Various Governorates Versus the National Baseline (continued)



Source: World Bank, TBC.

of patronage networks is the stability of Houthi rule in tribal areas that historically resisted both the IRG and the pre-war government.<sup>170</sup>

**GDP data alone are insufficient to explain the relative economic strengths and weaknesses of different groups.** Based on nighttime illumination and phone surveys, the IRG areas appears to enjoy higher economic growth rates. However, the economy in Houthi-controlled territory is more diversified and opportunities broader than in IRG areas. In Houthi areas, taxation of goods, markets and businesses has become the principal source of rents, which are reportedly redistributed to local authorities and leaders, including in the military sector.<sup>171</sup> The strong share of economic output in IRG calculated via nighttime illumination is at least in part explained by its control over key oil and gas fields, from which it does not extract the maximum value, as it is forced to share at least one-fifth of its income with local groups and because it does not commercialize associated gas.<sup>172</sup> Allegations of oil and fuel theft are pervasive, meanwhile, as are claims of fuel theft from subsidized electricity production in IRG areas (see Table 7).

**An analysis of gas flaring reveals significant discrepancies in the official reporting on**

**oil production.** Gas flaring strongly predicts oil production, and nighttime illumination captures 85 percent of the variation in output. Oil production estimates based on nighttime illumination consistently exceed those provided by the United States Energy Information Administration (EIA). These findings are corroborated by large differences in fuel imports and exports between Yemen and its trading partners. Although modest disparities are common when using mirror data, in this case the magnitude appears to be in the hundreds of millions of US dollars over several years, which cannot reasonably be explained by statistical errors or methodological differences. While the observed discrepancies may be due in part to poor local statistical capacity, they may also indicate corruption in resource management and rent sharing.

<sup>170</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022.

<sup>171</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Brokering a Ceasefire in Yemen's Economic War*, the International Crisis Group, January 2022; *Yemen: Al Hodeidah fuel import and fuel price modelling*, 10 April 2022.

<sup>172</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022.

**Table 7** Variations in Production Explained by Nighttime Illumination

Dependent Variable:	(1) log(RGDP)	(2) RGDP	(3) Oil Prod.
	(1) Index	(2) Index	(3) Mb/d
Independent Variable	(1)	(2)	(3)
log(NTLs)	0.349*** (0.002)		
NTLs		0.0357** (0.004)	
Flaring NTLs			0.648*** (0.025)
Observations	23	23	113
R <sup>2</sup>	0.799	0.788	0.856

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

**According to official data, the IRG continues to spend about one-quarter of its budget on electricity subsidies, the same share as before the conflict.**<sup>173</sup> Interviews with government officials indicate that payments for fuel imports to produce electricity are a major drain on foreign-exchange reserves, but key informants claim electricity supply is no better than it was before the subsidies were put in place. While a thorough investigation of subsidy spending is beyond the scope of this CEM, the international experience shows that electricity subsidies tend to benefit better-off households, distort prices and encourage inefficiency, and enable corruption. Indeed, previous subsidy-reform efforts in Yemen were presented as anti-corruption initiatives.<sup>174</sup>

**Imports can also present opportunities for patronage and rent-seeking.** The Houthis have consistently denied receiving fuel from foreign countries as a form of financial support. However, a 2019 UN expert panel reported that a small number of companies operate as fronts for fuel imports designed to benefit the Houthis.<sup>175</sup> In addition, the Houthis earn much of their income taxing imports into the areas it controls, which include the country's largest markets and population centers. The IRG appears to have sought to reroute trade and financial flows bound for Houthi areas to IRG-controlled ports and financial institutions.

## The Economic War and Its Power Dynamics

### *The Emergence of New Political Economy Actors*

**Yemen's war extends beyond the battlefield to the economic sphere, further immiserating a population already traumatized by conflict.** All factions use a mix of coercive economic tools to improve their economic positions and weaken their rivals. Yemen has been divided into two competing zones of monetary control with separate regulatory institutions. Banking services, foreign exchange, seaports, oil fields, and road access across domestic and internal borders are all objects of contention between rival factions.

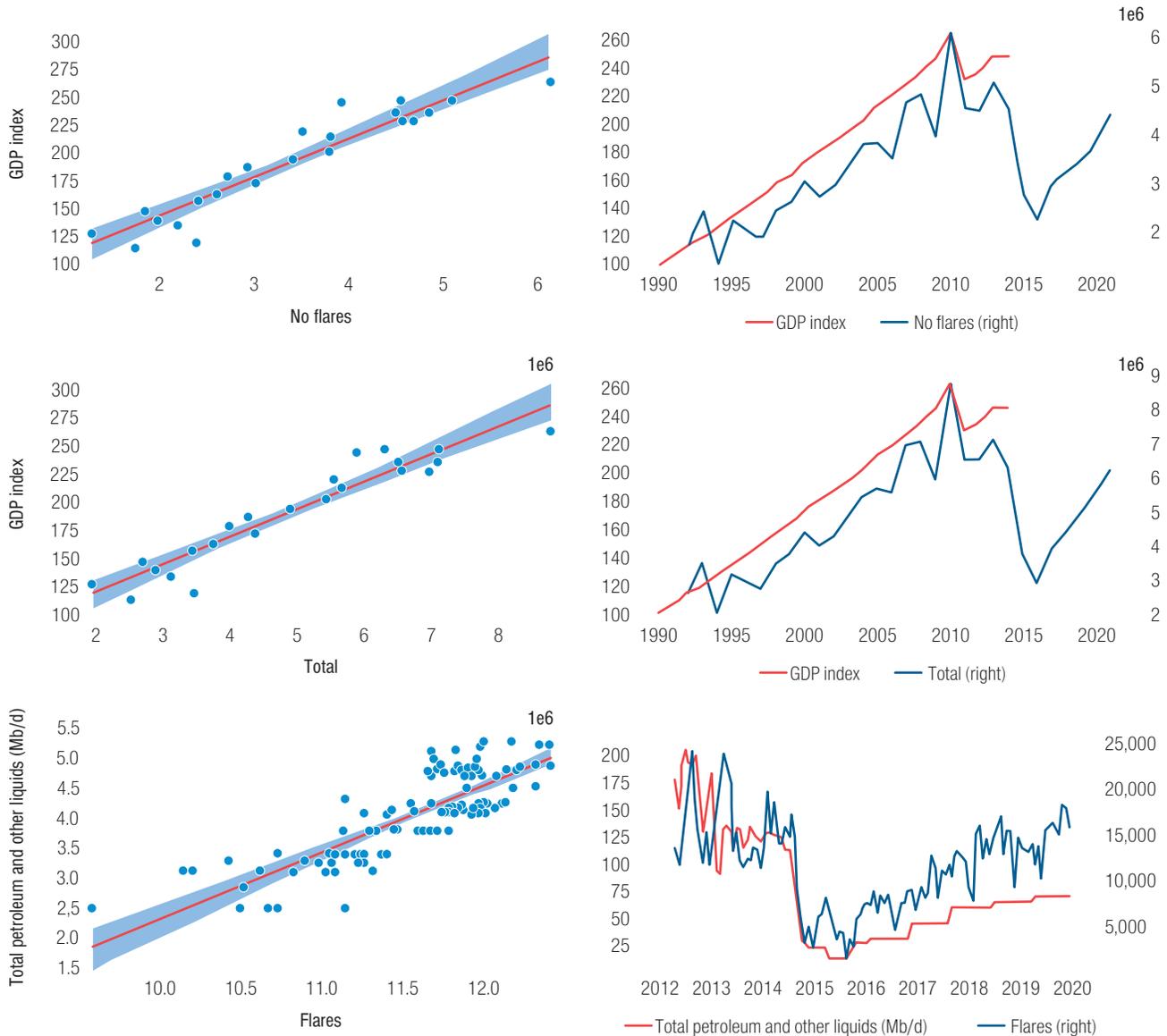
**An unstable regulatory environment, rising remittances, and skyrocketing demand for foreign exchange have given rise to a new cadre of unregulated but systemically important**

<sup>173</sup> Official government budgets for 2021 and 2022 presented to the World Bank and IMF show spending on subsidies representing 22 per cent and 32 per cent of all expenditures.

<sup>174</sup> *Petroleum Subsidies in Yemen: Leveraging Reform for Development*, Clemens Breisinger, Wilfried Engelke, Olivier Ecker, World Bank Group, February 2011.

<sup>175</sup> *Yemen's Economic Outlook- Fall 2016*, World Bank, October 2016.

## Figure 61 Correlation between Nighttime Illumination and Oil Output



Source: WB computations based on remote-sensing, gas-flaring analysis.

**money-transfer agents.**<sup>176</sup> The huge increase in the number and prominence of money exchangers since 2015, coupled with the bifurcation of monetary policy, has further compromised the capacity of the central banks in Aden and Sanaa to oversee or exert regulatory control over these new entities.<sup>177</sup> Some money exchangers have almost certainly benefited from the volatility of the rial and the differential

exchange rates across regions, as well as the need for intermediaries to execute financial transactions between IRG and Houthi areas.<sup>178</sup> The large public deposits of local and foreign currency that these

<sup>176</sup> *Ibid.*

<sup>177</sup> *Ibid.*

<sup>178</sup> *Ibid.*

money exchangers can hold enables them to capitalize on local exchange-rate dynamics,<sup>179</sup> and though their operations are often technically illegal, the CBY-Aden has limited capacity to identify and respond to instances of currency arbitrage and speculation.<sup>180</sup>

### *The Fight for Control of Trade Corridors*

**Since 2015, most major battles have been fought over the control of ports, oil and gas production facilities, and key trade routes.** The IRG and the Saudi-led coalition initially attempted a naval blockade of the Houthi-controlled port of Hodeida, though they were ultimately persuaded to allow shipments to enter the port upon inspection and approval by the IRG and coalition.<sup>181</sup> Since then, different restrictions and embargoes have been implemented on Hodeida and neighboring Houthi-controlled ports. In 2018, coalition forces launched a campaign to seize control of Hodeida outright, which was only halted when the UN brokered a deal to demilitarize the port and its surroundings. During 2018 and 2019, the STC took control of port facilities in Aden in south Yemen.

**The fuel embargo limited the Houthis' access to revenue while increasing IRG income at ports under its control.** Fuel imports to Hodeida fell, while inflows to IRG ports increased. Fuel imported to IRG areas was trucked overland into Houthi areas,<sup>182</sup> which disrupted supply chains, increased pump prices in Houthi areas, and led to double taxation.<sup>183</sup>

**Military struggles over oilfields reflect the crucial economic importance of hydrocarbon exports.** Houthi forces attempted to seize oil-rich Marib and Shebwa in 2015 but were rebuffed. In 2020, the Houthis again launched a major offensive in Marib, aimed at seizing its oil and gas production facilities. STC forces attempted to gain control of oil-rich Shebwa in 2019, and in 2022 other forces perceived to be STC-aligned took Shebwa. The STC then publicized its intention to take control of neighboring Hadramawt, another major hydrocarbon production hub.

**Road blockades and other restrictions on the overland movement of goods are part of the same zero-sum economic competition.** Internal barriers to movement limiting the number of road routes available to transportation firms and pervasive deployment of formal and informal checkpoints by tribes, armed groups, security and military forces among others, have created opportunities for armed groups and criminal gangs to demand rents from truckers.<sup>184</sup> Territorial fragmentation has presented arbitrage opportunities for traders at the expense of consumers, enabling powerful actors to exploit price differentials created by economic truncations and the bifurcation of monetary policy.

**All parties to the conflict have contributed to the deterioration of governance and the fragmentation of the national economy, but the Houthis' policies have been especially distortive.** While the Houthis have blamed price spikes on embargo-driven shortages, it has also shuttered many of the publicly owned fuel stations under its control while directing fuel supplies to privately owned gas stations to be sold at higher rates. The Houthis have also imposed quotas on the amount of fuel consumers could purchase at the official price within a one-week period. The Houthi-run YPC coordinated the supply of fuel to traders willing to pay premiums to secure larger quantities of fuel to cover

<sup>179</sup> *Yemen: Yemeni Financial Sector in December 2021*, ACAPS, January 2022.

<sup>180</sup> Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022. See also: *Economic Warfare: Government and Houthi Struggle for Control Deepens*, 3 January 2020; *Brokering a Ceasefire in Yemen's Economic Conflict*, the International Crisis Group, January 2022.

<sup>181</sup> *In Hindsight: The Story of the UN Verification and Inspection Mechanism in Yemen*, Security Council Report, September 2016.

<sup>182</sup> *Al Hodeida fuel import and price modelling*, ACAPS, 4 April 2022.

<sup>183</sup> Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022. See also: *Al Hodeida fuel import and price modelling*, ACAPS, 4 April 2022.

<sup>184</sup> Bank staff, consultant key informant interviews, Jan. 2022-Oct. 2022.

their operational needs. Estimates calculated by the International Crisis Group suggest that the Houthis earned more from fuel sales in 2020 and 2021 than in previous years despite apparent shortages.

### **Sectoral Governance during the Conflict: The Case of Liquefied Petroleum Gas**

**Dynamics in Yemen's domestic LPG market highlight the enormous burden the economic conflict imposes on ordinary households.** While Yemen imports most of its energy supply, the bulk of the LPG sold on the local market is produced domestically. The state-run, Marib-based Safer Oil Exploration and Production Company (SAFER) produces an estimated 23,000 barrels per day of LPG at a small onsite refinery at an oilfield in Marib.<sup>185</sup>

**Before the war, LPG distribution was overseen by the state-run Yemen Gas Company (YGC), which set prices and sales quotas.** LPG was allocated to governorate and district-level distribution centers based on the size of the local population, industry, and demand. Consumers bought LPG directly from YGC sale points or from privately owned sale points certified by the YGC.<sup>186</sup> As the YGC fragmented along with other state institutions, the regulation of the sector deteriorated, and eventually the YGC was no longer able to set prices or guarantee LPG availability across the country. The number of private actors involved in the transportation, distribution, and sale of LPG grew significantly, and new market entrants competed with established LPG transport and distribution companies. In Houthi areas, the YGC has been further marginalized by the deployment of Houthi supervisors (*mushrafeen*) and neighborhood bosses (*aqel al-harah*) to oversee local LPG distribution (see Table 8).<sup>187</sup>

**While pre-conflict allocation quotas remain in place, the distribution of benefits within the LPG sector has changed drastically.** An estimated 60–70 percent of daily LPG production is allocated to Houthi areas in accordance with pre-conflict quotas.<sup>188</sup> However, LPG supply networks are now

susceptible to diversion, disruption, delays, and profiteering from multiple actors. Key informants report that LPG transport and distribution companies, truck drivers, armed groups, and local retailers who operate independently of the YGC have all benefitted from the breakdown of governance in the LPG subsector.

**The rising cost of imported fuel, intermittent import-supply disruptions, and falling prices for domestically produced LPG have boosted LPG demand.** The use of LPG for personal, commercial, and industrial purposes has increased significantly during the conflict, and the resulting competition has opened new avenues for rent-seeking. LPG supplies earmarked for households have been systematically diverted and sold to energy-intensive businesses,<sup>189</sup> which are willing to pay premiums to secure the quantities they need. Cross-regional arbitrage offers attractive profit margins, and LPG has been regularly diverted to the domestic markets that offer the highest prices, most of which are in Houthi areas.<sup>190</sup>

**The influence of armed groups over the supply and distribution of LPG has not been confined to Houthi areas.** Three of the five bottling

<sup>185</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Al Hodeida fuel import and price modelling*, ACAPS, 4 April 2022. See also: *Conflict Escalation in Marib and Potential Humanitarian and Economic Impacts: Scenario*, ACAPS, July 2021.

<sup>186</sup> Based on World Bank background paper on Yemen's gas sector. See also: *Yemen: Unlocking the Potential for Economic Growth*.

<sup>187</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Yemen: Impacts of Fuel Dynamics and Fuel Price Structures*, ACAPS. August 2021.

<sup>188</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Yemen: Impacts of Fuel Dynamics and Fuel Price Structures*, ACAPS. August 2021.

<sup>189</sup> Bank staff, consultant key informant interviews, Jan. 2022–Oct. 2022. See also: *Yemen: Impacts of Fuel Dynamics and Fuel Price Structures*, ACAPS. August 2021.

<sup>190</sup> [https://sanaacenter.org/files/The\\_Gas\\_Crisis\\_in\\_Taiz\\_War\\_Mismanagement\\_and\\_Exploitation\\_en.pdf](https://sanaacenter.org/files/The_Gas_Crisis_in_Taiz_War_Mismanagement_and_Exploitation_en.pdf).

**Table 8** Monthly Average Price for One LPG Cylinder in Sanaa and Aden, May 2021–April 2022

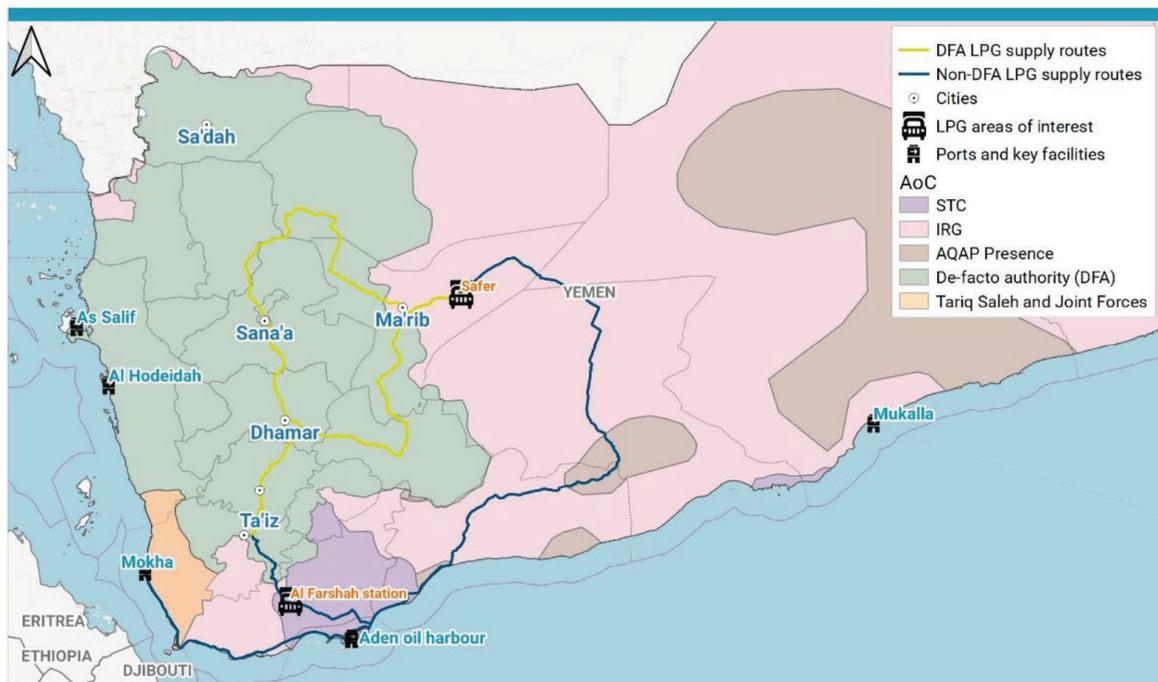
Date	Sana'a (YER) <sup>a</sup>	USD equivalent	Exchange rate	den (YER)	USD equivalent	Exchange rate	Ratio (domestic currency based)
21-May	10,419	17.5	593.7	4500	5	898.6	2.3
21-Jun	11,700	19.6	595.6	4500	4.8	932.7	2.6
21-Jul	11,724	19.6	597.1	4500	4.6	980.7	2.6
21-Aug	12,355	20.6	598.4	4500	4.5	1001.5	2.7
21-Sep	11,333	18.9	599.9	4500	4.1	1096.3	2.5
21-Oct	11,774	19.6	600	4500	3.5	1270.1	2.6
21-Nov	11,917	19.8	600.2	11500	7.6	1517.7	1.0
21-Dec	12,371	20.6	600	14438	12.3	1175.5	0.9
22-Jan	14,597	24.3	600.5	7666.7	6.8	1114.5	1.9
22-Feb	15,179	25.3	600.4	14773.5	13.2	1117.2	1.0
22-Mar	18,016	29.9	601.6	15500	12.4	1247.5	1.2
22-Apr	14,167	25.4	557.4	16000	16.7	958.7	0.9

Sources: Authors research based on ACAPS and WFP figures, coupled with results from key informant interviews.

Notes:

<sup>a</sup> The data for Sana'a reflects the average monthly parallel market price applied. The data for Aden reflects a combined official and parallel market price provided by WFP.

**Map 11** LPG Supply Routes in Sanaa, Taiz, and Aden



Date created: 18/05/2022  
Source(s): ACAPS

www.acaps.org

The boundaries and names and designations used on this map do not imply official endorsement or acceptance by ACAPS

facilities that serve Taiz governorate and are outside of Houthi control have repeatedly suspended activity due to alleged security risks.<sup>191</sup> Frequent disruptions have been reported at the Al Farshah bottling facility in Lahj, which is a vital link in the LPG supply chain that runs from Marib to Taiz via Shabwa, Abyan, Aden, and Lahj governorates.<sup>192</sup> The supply of LPG to areas outside Houthi control has been disrupted due to: (i) the diversion of LPG to Houthi-controlled parts of Taiz and possibly to other Houthi areas; (ii) the diversion of LPG earmarked for households to businesses; (iii) security threats at bottling facilities serving non-Houthi areas; (iv) the intervention of local military, security, and political officials at various points along the supply chain; and (v) the challenging access routes that LPG truck drivers must take via southeastern Taiz to reach non-Houthi areas (see Map 11).

**IRG efforts to consolidate control over local non-LPG fuel markets as part of their post-Hodeida strategy have also reportedly disrupted fuel supply in both nominal IRG and Houthi areas.** After requiring importers to sell a large share of their fuel to the IRG in 2021, the YPC attempted to coordinate the onward distribution and sale of LPG. These efforts were met with strong resistance by some fuel traders, including the country's single largest fuel importer.<sup>193</sup> Multiple importers refused to dock their vessels at Aden Oil Harbour, disrupting the flow of LPG to Aden and from Aden to Houthi areas. However, beginning in mid-January 2022 these constraints eased, as fuel shipments entered and unloaded at Aden Oil Harbour.

### Decentralization and Entrepreneurship: Ingredients for Optimism? A Comparative View

**Yemen's immediate future remains uncertain, and the path to robust and inclusive growth is extremely narrow.** Despite the complexity of the conflict, the ongoing struggle for control of the economy, and the sheer scale of Yemen's humanitarian

crisis and economic deterioration, there are reasons for qualified optimism. One of Yemen's most promising assets is its class of entrepreneurs, who have survived decades of political and economic turbulence. Yemen is surrounded by wealthy markets that share cultural ties and import most of their consumption goods, content for which could be produced in Yemen.<sup>194</sup> Given peace, stability, and adequate investment, the combination of a resilient private sector and a range of viable export markets could enable a broad-based recovery led by agro-processing and light manufacturing.

**On balance, the immense damage wrought by the conflict, the collapse of the patrimonial state after 2014 opened up new spaces for good governance and entrepreneurship.** Formal and informal local institutions have demonstrated surprising capabilities in some parts of the country, often by marrying tribal and other customary institutions with local government. The private sector has been able to operate in a highly challenging context, ensuring that key basic goods are available in local markets and often replacing the state in delivering services. Consolidating and expanding these pockets of strength, resilience, and innovation could help build the foundation for a successful post-conflict state. Post-conflict Yemen can draw on lessons from other fragile situations, as well as historical growth models based on community organization coupled with funding from the diaspora.<sup>195</sup>

**Yemen has effectively undergone an unmanaged decentralization process that is unlikely to be reversed even after the conflict has ended.**

<sup>191</sup> *Ibid.*

<sup>192</sup> <https://www.alayyam.info/news/8WS1GBY5-OA64F0-AAA7>.

<sup>193</sup> Bank consultant key informant interviews in January 2022.

<sup>194</sup> Chatham House (2011).

<sup>195</sup> An interesting example is that of the Local Development Associations (see Lackner, 2019, and Cohen, Hébert, Lewis and Swanson, 1981). These were the ways that local communities raised resources and provided public goods. Though they atrophied in the 1990s, in the years of the patrimonial state, they seem to have grown dramatically since 2014.

Prior to 2014, a highly centralized state dominated peripheral regions.<sup>196</sup> The rule of law was applied unevenly and often in the service of national elites, but in many parts of the country customary law and local institutions provided a more robust framework of legal and quasi-legal protections for citizens.<sup>197</sup> But in recent years the periphery has taken advantage of the collapse of central control. Power has coalesced around the 21 governorates, especially outside of Houthi-controlled areas.

**The post-war equilibrium appears likely to shift power to political authorities that offer greater accountability and more abundant public goods.** In Marib, for example, key informant interviews indicate that the especially active role of local leaders in the public administration has fostered more effective governance. Key informants argue that the state can be reconstructed at the subnational level because regional and local authorities are more “connected to the community” and governors “are from the community, so people have ways to influence them.”<sup>198</sup> These views are consistent with the outcomes of the National Dialogue Conference of 2013–2014, which offers important insights into Yemeni views on governance and accountability.

**Numerous obstacles stand in the way of a more prosperous post-conflict Yemen.** The first challenge will be to strike an appropriate balance of power between the national and subnational governments, including the division of revenues from natural resources, customs, and tax collection. Another challenge will be to counter the pervasive rent-seeking behavior and extensive patronage networks that would inevitably hinder reform in a post-conflict setting. Ultimately, the fundamental prerequisite for stability and renewed growth is peace. An unbalanced division of power or unchecked rent-seeking could undermine even the most well-intentioned settlement.

**The end of the conflict will be a critical juncture for Yemen. The country's political and security situation will determine whether it fully**

**recovers and moves toward convergence with neighboring states, or remains locked in a cycle of low growth and chronic instability.** The government and other stakeholders can draw on the experience of other places that have successfully emerged from a period of profound crisis. Four such countries demonstrate that Yemen's powerful and heterogeneous social structures should not be viewed as an overwhelming obstacle to the creation of an effective non-patrimonial state. Such structures have been made compatible with states of varying degrees of effectiveness.

**The first, best-case outcome is to be found in Abu Dhabi, where tribal ties underpinned rather than impeded the process of state-building, as Eurocentric paradigms would tend to assume. The second, still optimistic, is the consolidation of peace in Sierra Leone since the end of the civil war in 2001.** While Sierra Leone remains deeply underdeveloped, it has successfully avoided a return to conflict for over two decades by leveraging the strength and legitimacy of its traditional institutions. The third case study is the example is Somaliland, Yemen's near neighbor, which embedded traditional governance systems into the foundation of a modern, accountable state that has created the conditions for economic growth—despite lacking international recognition.

**The fourth country is Colombia which represents the least optimistic but perhaps the most relevant case for Yemen.** In Colombia, growth and increasing economic sophistication in some parts of the country including its urban centers, have been achieved in tandem with high levels of violence and illicit trade in the often ungoverned interior. Colombia offers a plausible if unsatisfying glimpse at Yemen's potential future, where cities and some regions thrive even as other areas remain chronically disordered.

<sup>196</sup> Consultant key informant interview, January 2022.

<sup>197</sup> See for example, al-Dawsari (2018).

<sup>198</sup> Consultant key informant interview, January 2022.

**Yemen differs in important ways from each of these countries and territories, and the case studies provide broad strategic guidance on consolidating peace and stability in fragile states rather than a copy-and-paste model for political organization and growth in Yemen.** Abu Dhabi, Somaliland, and Sierra Leone are territorially smaller and less populous than Yemen. Their societies are relatively heterogeneous compared to Yemen's, and each country's formal political systems and traditional institutions vary enormously, as to their economic bases. While these caveats are important to bear in mind, several key lessons emerge from the cross-country experience. The most important of these is that classic state-centric approaches to economic and political development are not the only way to achieve growth and development, and that local customary governance and informal institutions can be an asset in a post-conflict environment, not a barrier to progress.

### *The Segmentary State and Tribal Capitalism in Abu Dhabi*

**Abu Dhabi offers an example of centralized governance that maps on to traditional social orders.** It demonstrates that powerful social structures are not necessarily an obstacle to significant development and growth. The political evolution of Abu Dhabi shows that traditional social structures can be compatible with modern governance. Abu Dhabi emerged as a separate polity in the late 18<sup>th</sup> century, when the Al-Nahyan family became leaders of the Bani Yas, a confederation of about 30 tribes,<sup>199</sup> but the country's remarkable political transition did not begin until after 1966, when Zayed bin Sultan Al-Nahyan replaced his brother as leader.

**As in the other case studies, balance between local social constituencies and the emerging state was the key to Abu Dhabi's development.** While Abu Dhabi was highly centralized, and relied heavily on rising income from oil exports, Al-Nahyan divided control of ministries and allocated economic

opportunities among the different Bani Yas tribes, effectively mapping the traditional social structure onto a modern state. While this approach would appear to formalize patronage, in practice it can help diffuse political tensions by ensuring that tribal and political elites outside the ruling coalition retain access to a meaningful degree of independent political and economic power.<sup>200</sup>

**Many states in the developing world, Abu Dhabi included, are more like what Southall (1956) first called "Segmentary"—a fusion of kinship and fictive kinship groups with more modern state institutions and functions.** To cite another relevant example outside of the Middle East, the effectiveness of the Rwandan state today rests not on the existence of a "Weberian bureaucracy", but on the fact that the government can leverage traditional mechanisms of reciprocity deeply embedded in the construction of the pre-colonial state (Heldring and Robinson, 2022).

### *Traditional Institutions and Peace in Sierra Leone*

**Sierra Leone shows how decentralization can be foundational to stability.** Sierra Leone is not a "development miracle" but it could be described as a "stability miracle". Since the end of its civil war in 2002, Sierra Leone has not only completely reimagined national institutions from the bottom up but the strength of the traditional institutions at the local level has addressed fragility, with impressive

<sup>199</sup> Davidson, 2018.

<sup>200</sup> "[P]ositions are ... distributed to representatives of those other Bani Yas sections and tribes that have been historically supportive of the Al-Nahyan.... Many powerful government and military portfolios remain in the hands of the non-ruling tribal elites. The advent of the new multi-sector economy and all of its constituent new parastatals and joint ventures, means that there is a superfluity of fresh opportunities for this elite's inclusion in the establishment. Consequently, centuries-old alliances are being incorporated into a present-day system of tribal capitalism" (Davidson, 2018, p. 111).

results. The current homicide rate is lower than that of the U.S. The legitimate political order at the local level allowed demobilized combatants to be reintegrated into society.

**Post-colonial, pre-civil war Sierra Leone suffered from many of the same pathologies that affected Yemen prior to 2015, including an autocratic, corrupt, unaccountable, and highly patrimonial state with little administrative capacity.**<sup>201</sup> In the 1890s, the British created a system of paramount chiefs based on pre-colonial tribal institutions, in which social norms and customary practices provided a degree of accountability. The British appear to have coopted traditional political systems because they retained popular support and legitimacy,<sup>202</sup> and these systems remained largely intact after independence. Indeed, the legitimacy of traditional systems was evident at the end of the civil war in 2002. Despite intense pressure from outsiders to radically change local political institutions after the conflict, the government re-constituted the system in much the same form as before the conflict.

**Past conflict is a strong predictor of future conflict, but Sierra Leone has remained at peace for over two decades.** The legitimacy of the political order at the local level allowed demobilized combatants to be reintegrated into society. The international community has also played an important role, and the World Bank-sponsored post-civil war decentralization plan enabled power-sharing between the two major political parties.<sup>203</sup> However, the strength of traditional institutions at the local level has likely been the decisive factor in preventing a renewed conflict.

### *Tribes, Accountability, and Growth in Somaliland*

**Somaliland shows how a mix of state-building, decentralization, customary rule and gradual institutional assimilation can offer a long-term path to growth and stability, even when**

**international assistance is absent.** In Somaliland, clans and the state arrived at a broad equilibrium of power over the course of years of formal and informal negotiations. Social contracts have underpinned Somaliland's stability and development over the past three decades. Somali society is accustomed to negotiation and agreement, even during active conflict. Amid recurrent conflict in the 1980s and 1990s, clan elites tapped into this tradition and organized a series of conferences, which often lasted for months, to try to build consensus on how to govern. Over time, they developed an innovative new clan-based political institution that formed the basis of what now is the upper house of the Somaliland legislature.

**While Somaliland has never had a strong central government, the cultural tradition of voluntary social agreements (*heer*<sup>204</sup>) and the fundamental egalitarianism of Somali society have provided the basis for state formation.** After independence, new political elites were able to counterbalance the power of clans and gradually shift authority towards the state. In 1993, Somaliland's first president used loans from foreign businesses to finance the demobilization of armed militias and leveraged customs revenue to strengthen his political position. The government slowly but systematically consolidated its position until it had reached an equilibrium with clan leaders and other subnational power centers. In 2000, the government asserted its unique authority to levy taxes by banning local revenue-generating

<sup>201</sup> Reno, 1995, and Acemoglu and Robinson, 2012.

<sup>202</sup> Little, 1965 and 1966.

<sup>203</sup> Zhou, 2009.

<sup>204</sup> "[Heer's] closest equivalents in English are compact, contract, agreement, or treaty in a bilateral sense. Thus several men or parties are said to be of the same heer when their relations are regulated by an agreement ... As need arises the terms of contracts are abrogated, existing treaties modified or rescinded, and new agreements made. The majority of heer agreements binding groups relate principally to collective defense and security and to political cohesion in general." Lewis (1961) pp. 161–162.

checkpoints, and centrally appointed governors disrupted de facto clan control. While the ruling party favored centralization, the political opposition championed the interests of clans and other local institutions, and the ongoing discourse between them helped normalize the peaceful contestation of power through the political process.<sup>205</sup>

**Somaliland has achieved stability and economic development without significant international aid. As Phillips (2020) notes,** “Indeed, not only did Somaliland receive no ODA, it received (almost) no international charitable contributions, no support for state-building or peace-building, no peacekeeping missions, no political support for belligerents in its civil war, no military assistance, no access to the licit international weapons trade, no significant involvement in extractive industries, minimal foreign investment, and no access to international loans. And it was unencumbered with international debt repayments. Other than the remittances Somalilanders were sending home from abroad, the country was remarkably free from external involvement of any kind.”

### *Uneven Progress and Solid Growth in Colombia*

**The experience of Colombia can help demonstrate how weakened central governance and a history of conflict can coexist with economic growth and uneven stability.** In Colombia, after a civil war in the mid-20<sup>th</sup> century, the re-constituted state reached an equilibrium with guerilla groups in the country’s interior. By the 1970s paramilitary groups and drug cartels flourished. The balance was upset in the 1980s and 1990s when one major cartel launched a campaign of terror against the state. This led to a massive military crackdown on cartels and a rewriting of the constitution. In the 2000s, the government effectively defeated its main paramilitary rival and

opened a negotiating table. Nevertheless, the subsequent demobilization of the FARC has not led to a new Colombia. There have been many demobilizations and re-mobilizations in Colombian history. New armed groups have emerged and coca production, at an all-time high, flourished in ungoverned rural areas, while politics remains clientelistic.

**This model of a state, what Acemoglu and Robinson (2019) call a “Paper Leviathan” was compatible with economic growth, at least in some areas.** Roldán (2002) shows in detail how the core-periphery relationship that characterizes the entire country, emerged within the department of Antioquia. In the urban Medellín, in central Antioquia, business invested and grew. In the rural periphery, anarchy and disorder ruled but in an equilibrium with the core which did not undermine its incentives. The economy grew at 5 per cent a year on average even during the civil war. Since then, despite repeated waves of conflict, growth has been steady and positive.

**Despite waves of violence and conflict, Colombia has managed to achieve significant economic sophistication and entrepreneurship, although not equally distributed.** As Acemoglu and Robinson (2019) discuss, sophisticated economic elites are able to exploit the weakness of the state in the periphery by illegally accumulating land and assets (Oxfam, 2013). They are also able to use it to establish monopolies. This has meant that most of the direct benefits of growth have passed on to a relatively small elite. Colombia is one of the most unequal countries in the world, by most conventional measures, second only to Honduras in Latin America.

<sup>205</sup> “By using a discourse related to state and constitution, the government tried to keep the opposition in check. By using a discourse related to clan institutions, the opposition tried to displace the government’s legitimacy.” Renders (2012) p. 222.

# Shaping Yemen's Future

## Scenarios for Yemen Through 2030

**Yemen is in a highly volatile and unpredictable situation. While a political settlement would be a critical step towards recovery, it would not guarantee a return to stability or broad-based growth.** Yemen's social, political and institutional fragmentation is likely to persist into any post-conflict period, with territorial control divided into de facto zones of authority and multiple overlapping formal and informal administrative frameworks.

**Nor is even limited peace guaranteed.** Many well-informed Yemenis and outside observers see a wide range of potential trajectories for Yemen that do not correspond with conventional understandings of "peace". These include a continuation of stop-start national conflict both between the IRG and the Houthis, in line with patterns observed over the past eight years; more infighting among the forces currently nominally aligned with the IRG; or both.

**Key informants widely share the view that only a de facto or de jure decentralized governance structure can prevent a slide back into conflict.** Any effort to rebuild a central state in

Sanaa or elsewhere is likely to be either heavily contested by groups who feel left out of the new national compact; or achieved primarily through coercive force, potentially in a way that precludes international aid and development assistance.

**Key informants also use the colloquial term "no war, no peace" to describe the current situation in Yemen, the continuation of which is seen as the most likely alternative to a return to war.** Since early 2022 fighting has ebbed to a low level of intensity, initially because of the UN-brokered truce and recently because of a tacit agreement among the Yemeni and regional parties to the conflict to informally maintain the truce. But an internationally mediated, sustainable political settlement to end the conflict remains a hope.

## Political Economy and Macroeconomic Scenarios

**Yemen's future may be impossible to predict but this does not mean that a range of scenarios built around the above context cannot be used to sharpen policy thinking.** To support planning efforts, the World Bank commissioned two complementary scenario analyses to accompany this report,

one reflecting possible political economy outcomes for Yemen's future, the other a complementary set of potential macroeconomic outcomes.

**The political economy scenarios build on a rigorous political economy analysis (presented in Chapter 3), largely substantiated by** extensive key informant interviews conducted for this report.

**The macroeconomic CGE scenarios, on the other hand, build on the best available data on Yemen for through 2020, and are based on the new Social Accounting Matrix (SAM), outlined in Chapter 2.** A new SAM, updated to 2020 (more details about the SAM are available in the Annex), is the main data source for the CGE model, the Sustainable Development Goals Simulation Integrated Model (SDGSIM), which was used for the scenario analysis. Like other CGE models, it imposes rigor based on first economic principles, considering the links between the domestic actors (households, producers, and the government), the constraints under which they operate, and their interactions with the outside world through trade, private and public transfers, and financial flows (see Box 4).

**The analysis provides a broad sense of the political, international, and macroeconomic context across two categories of scenarios.** Under the first two **"Business-as-Usual"** scenarios—Status Quo and No War, No Peace—violent conflict either continues with occasional periods of military inertia, or lapses into truce or ceasefire but without a political settlement that sustainably ends the war. The second set of scenarios unfold in a context where political / military developments allow for either *de jure* or *de facto* centralized (Restored State) or decentralized (Imperfect Peace) state authority, creating space for a **"Path to Recovery"**.

**Each scenario has important ramifications for internal political and macroeconomic stability, investment and consumption, and international aid and grant support, key determinants**

**in future growth.** Contested state legitimacy and continued violence with or without a political settlement would starve Yemen of the stability that would foster much-needed improvements in living standards via public and private consumption and investment, and broad economic growth. (See Figure 62).

**It is critical to stress that the scenario analyses should be read as broad indications of potential outcomes rather than forecasts of political economy or economic developments.** Nor should they be read as an endorsement of any one political outcome.

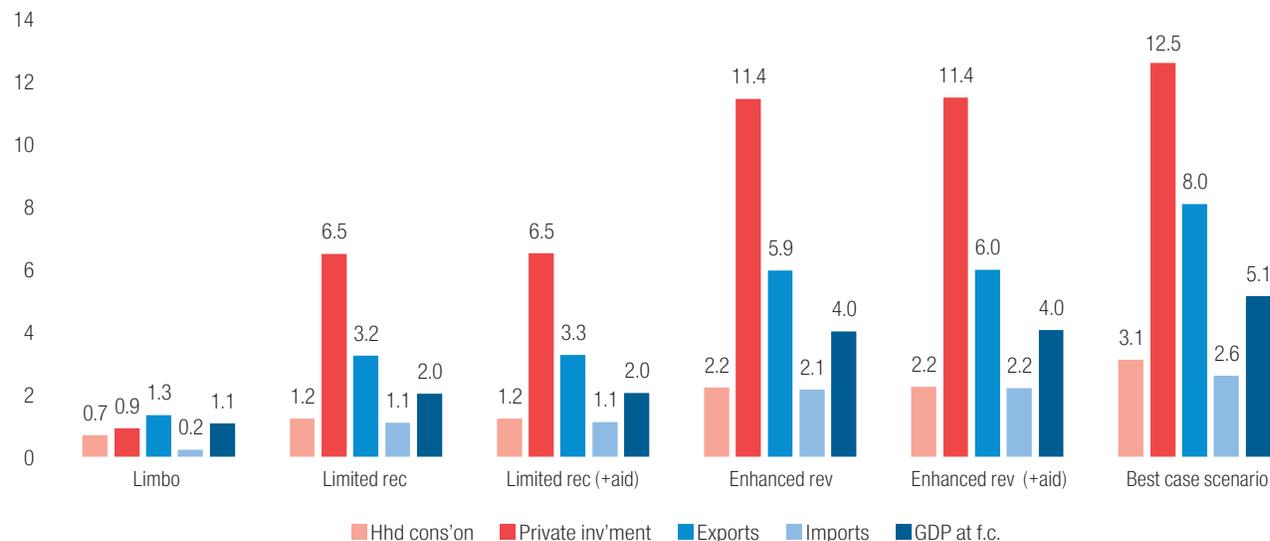
### Divergent Path to Recovery Sub-Scenarios

**In the political economy analysis, the two Path to Recovery scenarios are broken into sub-scenarios, reflecting the different ways the outcomes they describe (a Restored State or Imperfect Peace) might be achieved.** *Scenario 3: Restored State* could be achieved either via complete territorial victory by one of the warring parties, or through a UN-brokered political settlement that leads to the formation of a new central government. It is assumed that the new national authorities in either of these sub-scenarios would face a considerable number of challenges to their authority and that the situation on the ground would remain shaky. In the case of an outright or near outright Houthi victory, donors would be less inclined to providing aid and grants (see Figure 62).

**Key Informant interviews indicate that Scenario 4: "Imperfect Peace"—the most stable end-state—is most likely to occur in the context of decentralization.** Again, this can happen in different ways: via local authorities insisting on their *de facto* autonomy regardless of the nature of a settlement: or as part of a mutually agreed *de jure* political framework that explicitly decrees decentralization. In the first sub-scenario, donors may feel that they have no choice but to work with central

**Figure 62** Projected Growth and Other Macroeconomic Indicators by Scenario

Growth in other macro indicators by scenario (% pt. deviation from base)



**Table 9** Yemen Scenarios Through 2030

Political Economy Scenarios	Macroeconomic Scenarios	
	<b>Business as Usual</b>	
<b>Status Quo</b>	<b>Scenario 1</b>	<b>Base Scenario</b>
The war continues along a similar trajectory to the past eight years, with violence ebbing and flowing.	Economic growth is slow and living conditions do not improve, with GDP growth of 2 percent from 2023 onwards. Poverty remains high.	
<b>"No War, No Peace"</b>	<b>Scenario 2</b>	<b>Limbo</b>
Conflict intensity dwindles, perhaps because of a ceasefire, but there is no political settlement.	Growth is marginally better than in the base scenario, around 3.1 percent on average. Exports and imports increase marginally relative to 2022. Poverty remains high.	
	<b>Path to Recovery</b>	
<b>Restored State</b>	<b>Scenario 3</b>	<b>Limited Recovery</b>
De facto and/or de jure authority are consolidated around a single centralized set of state institutions. This authority is periodically contested by subnational actors.	GDP grows at twice the rate of the base scenario, and public investment increases. Poverty decreases marginally.	
<b>Imperfect Peace</b>	<b>Scenario 4</b>	<b>Enhanced Recovery</b>
A political settlement either enshrines de jure decentralization or leads to de facto decentralization that is accepted by national elites.	Growth is three times higher than the base scenario. Government and private sector investment increases and poverty falls to levels approaching those seen pre-war.	

authorities, and may limit the funds they deliver, while in the latter they may feel more confident about directly supporting local authorities, particularly those they share an affinity with.

**Mirroring this split, the Path to Recovery macroeconomic scenarios are also subdivided: Into "Limited Recovery" and "Limited Recovery Plus"; and "Enhanced Recovery" and "Enhanced**

## BOX 4: MAIN MODEL ASSUMPTIONS

**The Path to Recovery scenarios assume that the government achieves a higher level of efficiency.** This is implemented in the model through real government consumption, which grows at a fixed annual rate of 2 percent in the baseline, while it is assumed to stay unvaried in both the Limited Recovery and Enhanced Recovery scenarios, in the sectors outside of health, education and infrastructure. In other words, both the Limited Recovery and Enhanced Recovery scenarios assume some level of efficiency gains, as the government is expected to be able to channel more resources to high-priority spending (such as health, education and infrastructure) without increasing taxes or tapping into foreign aid. More specifically, for the Enhanced Recovery scenarios, the increases in government health and education spending (split into consumption [current] and investment [capital]) during the period 2023–2026 are defined to permit the country to deliver services typical of the 90<sup>th</sup> LIC percentile starting from 2026. This is assumed to generate a more gradual increase in Yemen's human-capital index (HCI) to the 90<sup>th</sup> LCI percentile during the period 2023–2030 as a growing part of the labor force benefits from improved health and education. In its turn, labor productivity grows relative to the 2022 level at a rate that, according to cross-country evidence, is expected given the HCI increase.

**For infrastructure, the Enhanced Recovery scenarios impose gradual increases in operations and maintenance and investment spending that, on average may be sufficient for low- and middle-income countries to achieve the infrastructure-related sustainable development goals** (SDGs; Rozenberg and Fay 2019; Foster et al. 2022). Drawing on cross-country estimates (Gupta et al. 2014, p. 171), it is assumed that the infrastructure capital stock has a marginal productivity (MP) of 0.30 for Enhanced Recovery and Enhanced Recovery Plus. The gains are realized in the form of increases in total factor productivity (TFP); more specifically, once installed and other things being equal, value-added increases by 0.30 (0.60) YER for every additional YER of infrastructure capital with the gains spread across all sectors in proportion to their initial shares in value added.

**The central assumption of the Path to Recovery “Plus” scenarios is that Yemen receives additional foreign grant aid:** in each year 2023–2026 foreign grants increase by 1 percent of 2022 GDP (i.e., reaching 4 percent in 2026); the increases are reversed during the period 2027–2030 so that, in 2030, foreign grants are back at the level of the base scenario. Similarly, the assumed increase in social transfers from the government to households would permit Yemen to reach the 90<sup>th</sup> percentile among LICs in terms of spending on social safety nets, assuming that Yemen's initial level was in the bottom half among LICs (more specifically in the 25<sup>th</sup> percentile).

For **remittances**, the baseline assumes that they grow at the same rate as the population, 2 percent, i.e., that they are unchanged in per-capita terms. For the enhanced recovery scenarios, it is assumed that, starting from 2023, the annual growth rate increases by 1 percentage point. A practical condition for this situation would materialize neighboring countries in the Gulf Cooperation Council (GCC) provide preferential treatment to worker migrants from Yemen and facilitate their remittance back home. In our model, the Yemeni households primarily use the increases in social transfers and remittances to boost their consumption.

**Table 10** Growth Assumptions Across Macroeconomic Path to Recovery Scenarios

Shock area	Changes compared to base <sup>a</sup>	Scenario	
		Limited recovery <sup>b</sup>	Enhanced recovery <sup>c</sup>
Health & education	Government health & education spending (% of base GDP) (evenly split between consumption and investment)	+2.7	+5.4
	Labor productivity in 2030 (%) — gradual increase 2027–2030	+7.9	+15.8
Infrastructure	Government infrastructure spending (% of base GDP) (32.5% consumption, 67.5% investment)	+3.3	+6.7
Social transfers	Transfers from government to households (% of GDP)	+0.6	+1.2
Remittances	Transfers to households from abroad (US\$) (% annual growth) (2023–2030)	+0.5	+1.0
FDI	Foreign direct investment (% of base GDP; in US\$)	+3.45	+6.9
Oil-gas output	Change in oil & gas resource extraction levels (% annual growth)	+1.3	+2.4

a Unless otherwise noted, changes are introduced gradually 2023–2026 and after that kept in place up to 2030.

b The difference between the two subscenarios within ‘limited recovery’ is that the latter (aid) enjoys foreign grant increases that in 2023–2026 gradually increase from 0.5 to 2 percent of base scenario 2022 GDP and in 2027–2030 gradually decline, in 2030 being back at the 2030 base level.

c The difference the subscenarios within ‘enhanced recovery’ is that the latter two cases enjoy foreign grant increases that are twice as large as for first subscenario, peaking at 4 percent of 2022 GDP in 2026. Specifically the best-case scenario differs from all other recovery scenarios in the MP of government capital is 0.6 instead of 0.3.

**Recovery Plus**". Under the two "Plus" macroeconomic scenarios foreign grant aid increases faster between 2022 and 2026, and aid remains at a higher level up to 2029. The increase in foreign aid and grants is associated with the most acceptable political outcome for the international community (e.g. the restoration of the state or establishment of a new decentralized order via UN-brokered settlement rather than the imposition of de facto authority at the national/ local level) (see Tables 9, 10).

## Comparative Context

**Building on the comparative context section of Chapter 3, each "Path to Recovery" scenario includes a short concluding note on lessons drawn from other cases outlined in Chapter 3.** As in Chapter 3, this comparative work focuses on four countries: Colombia, Sierra Leone, Somaliland, and Abu Dhabi / the United Arab Emirates.

## Key Policy Takeaways

**These scenarios contain some important lessons for policymakers.** Perhaps most importantly: even in *Scenario 2: No War, no Peace / Limbo*—where the conflict remains on pause despite a lack of political progress—Yemenis witness some modest improvements in their economic situation compared to *Scenario 1: Status Quo/Base*, under which conflict continues. In other words, if the fighting stops, life gets better for Yemenis even if the political outcome is unsatisfactory.

**Other than in Scenario 1: Status Quo/ Base, gains in productivity, driven by improved security and policy changes, have an almost immediate effect in boosting GDP (fig 68).** These productivity gains also boost income levels and they generate higher household consumption, savings, private investment, exports, and imports, with the investment increases feeding back to higher growth. In the Path to Recovery scenarios, private investment growth is boosted by increases in FDI.

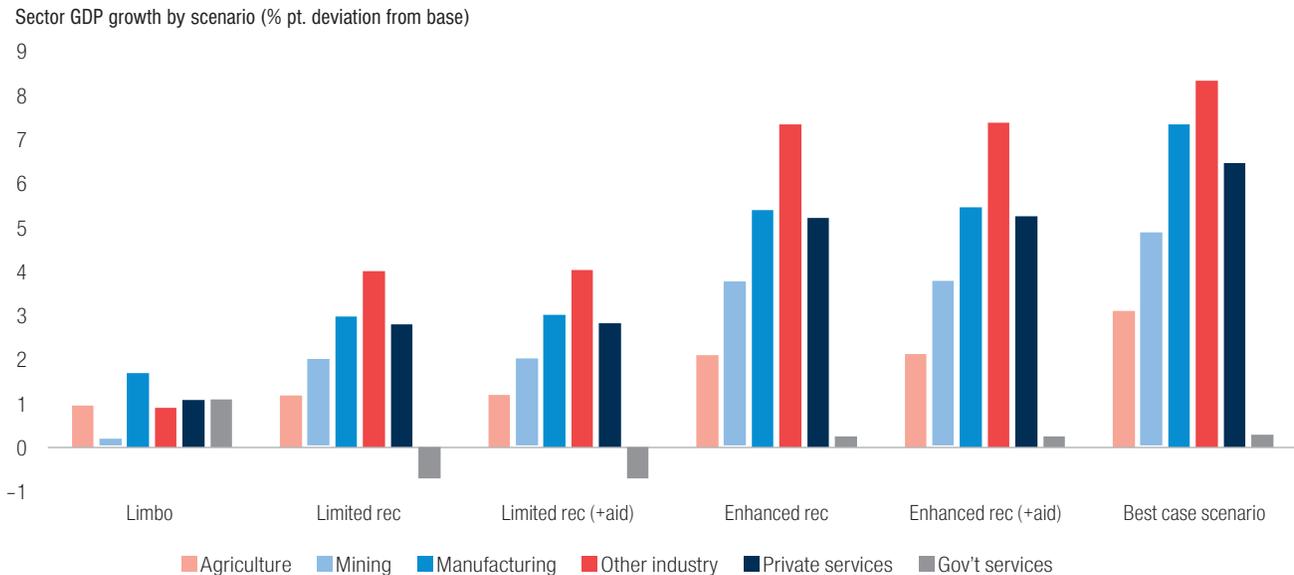
**Peace, decentralization<sup>206</sup> and increased public investment efficiency can yield dramatic gains in employment and poverty reduction.** In all scenarios, GDP growth reduces unemployment rates relative to the base by 2030. GDP growth and employment rates are closely linked. In the *Imperfect Peace/ Enhanced Recovery* scenario, female unemployment falls slightly below its 2022 level. The poverty rate drops below the base even in *Scenario 2: No War, No Peace/Limbo* scenario, and even more in all other scenarios. Improved health and education services, better infrastructure, and greater physical security would yield additional gains in household welfare that are not captured by the model.

**Across all non-Base scenarios, growth accelerates for all sectors, especially for manufacturing.** Particularly in the Scenario 4 (*Imperfect Peace/ Enhanced Recovery*), the expansion of manufacturing is strongest due to the combined impact of higher income elasticities of demand from households (compared to agriculture) and the absence of sectoral natural resource constraints. Apart from in the *No War, no Peace / Limbo* scenario, growth is driven by other industries, with an especially strong expansion in construction spurred by rising public and private investment. For extractive industries, output rises fastest in *Scenario 4*. The growth of government services is also fastest in the *imperfect Peace* scenario, with a policy-driven increase in education and health spending and unchanged spending on public administration. Sectoral changes in export growth are highly correlated with changes in sectoral GDP growth, though less so in agriculture, where exports are also affected by domestic demand (see Figure 63).

**Aid and grants in particular will continue to play a vital role in Yemen, even in the best-case scenarios for peace and recovery over the medium term.** During the coming decade, foreign

<sup>206</sup> A central assumption is that this, as key informants and the macroeconomic scenarios suggest, can lead to improved security and stability.

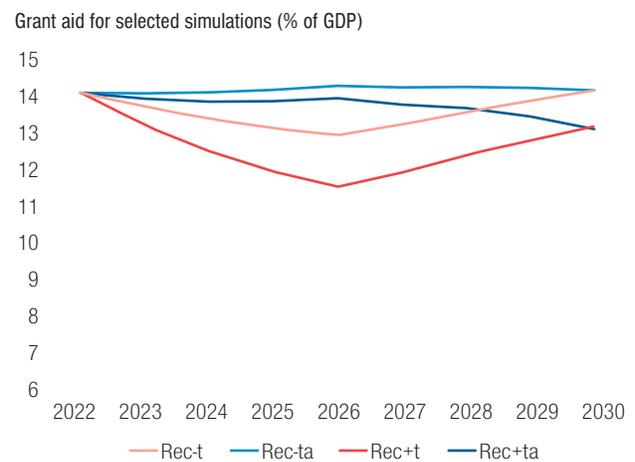
## Figure 63 Projected Sectoral GDP Growth



aid will be critical to enable the government to set and achieve realistic taxation goals while supporting household consumption, investment, and savings. Without adequate foreign aid, the government will be forced to increase taxation at the expense of household welfare, possibly sparking renewed unrest, or to undersupply public goods and services. Faced with the country's ongoing humanitarian crisis, a temporary increase in aid may be necessary to protect the poorest and most vulnerable households while bolstering prospects for a sustainable resolution to the conflict (see Figure 64).

**Evidence gathered through interviews and literature suggests there are some reasons to be optimistic about the possibility of a process of the re-formulation of a unified state integrating local and customary institutions. However, this report only evaluates the likelihood, rather than the desirability of one outcome versus others.** The high strength and legitimacy of tribal and local institutions is often associated with the process of disarmament and re-integration. There is strong evidence that tribal structures are still very important in solving routine problems at various degrees across regions in Yemen.

## Figure 64 Grant Aid for Selected Scenarios



Source: CSO, National Accounts Bulletin 2019.

### Scenario 1

#### Political Economy – Status Quo

**Under the political economy "Status Quo" scenario, the patterns of political and military**

**conflict of the past eight years remain largely unchanged through 2030, and Yemen's political and military fragmentation either expands or remains largely unchanged.** Intermittent periods of intense fighting and some territorial gains or losses are interspersed lengthy pauses for recalibration and political outreach. Governance is still heterogeneous as are local economic outcomes. Oil and gas production remains overall subdued, and largely similar to current output levels. Aid remains largely focused on the humanitarian crisis.

### *Macroeconomic – Base*

**In the Base macroeconomic scenario, current patterns continue.** The scenario assumes that: (a) all international (export and import prices) are constant in real terms; and (b) for most institutional payments, including receipt and spending items in the government budget, the GDP shares are constant, kept at the 2020 shares.

**The picture for the Base: scenario is one of stable GDP growth, averaging 2 percent, starting from 2023.** To facilitate comparisons to non-base scenarios, GDP growth is simulated at a stable annual rate of 2.0 percent between 2022 and 2030.<sup>207</sup> Absorption (i.e., the sum of domestic final demands) is boosted by Yemen's trade deficit, permitting it to exceed—and by a wide margin—GDP at purchasers' prices and, even more so, GDP at factor cost. Within domestic demand, household consumption dominates, followed by government consumption (which includes consumption financed by donors and managed by NGOs and others), private investment, and government investment.

**Poverty remains high, at over 70 percent, through 2030, and unemployment is bound to gradually increase.** A continuation of war and fragmentation does not allow the growth rate for household consumption to exceed the population growth rate, leaving per capita consumption unchanged with a headcount poverty rate of 74.4 percent both in 2022 and 2030. The aggregate sectors grow at

annual rates close to 2 percent with mining being the only exception, reflecting the central assumption that extraction rates remain relatively stagnant. Unemployment rates increase both for men and women. Aggregate export growth is 1 percent, kept in check by a negative growth rate for mining, which in 2022 represented around 62 percent of total exports. For the non-mining sectors, the growth rates are around 3 percent. As shares of GDP, the changes in size of the government and its different receipt and spending items are minor. Foreign aid, which amounts to around 14 percent of GDP, is assumed to be almost entirely in grant form. Government foreign financing (borrowing net of interest) payments is close to zero, generating a virtually unchanged ratio between foreign government debt and GDP.

## **Scenario 2**

### *Political Economy – No War, No Peace*

**In the political economy No War, No Peace scenario, a cessation of hostilities is brokered but talks over a political settlement do not progress significantly. This is a marginal but nonetheless meaningful improvement over the Status Quo scenario, and creates space for economic growth.** Current de facto administrative divisions remain in place, however, and the peace is occasionally punctured by low-to-medium intensity conflict. Oil and gas production remains largely similar to current output levels. However, unlike the Base scenario, private sector and initiative develop more, thanks to security improvements.

### *Macroeconomic – Limbo*

**Macroeconomic gains in the macroeconomic Limbo scenario are limited but mark an improvement over the Base scenario.** GDP growth through 2030 is 3.1 per cent on average (a 1.1 percentage point improvement on the base). Both exports and

<sup>207</sup> Unless otherwise noted, the growth rates are geometric averages for the period 2022 and 2030.

imports increase, albeit only marginally compared to 2022 (growing by 2.3 per cent and 2 per cent respectively). Private sector and government fixed investment levels remain low (growing 3.1 per cent and 2.8 percent respectively), and the headcount poverty rate remains above 70 per cent (at 72 per cent).

### Comparative Context

**Of the comparative contexts discussed in Chapter 3, this scenario has elements that resemble Somalia's recent past, suggesting potential for individual development success stories at the subnational level like Somaliland's.**

### Scenario 3

#### Political Economy – A Recentralized State

**In the two Recentralized State scenarios, a nationwide military victory leaves the Houthis or the IRG in control of the entire country; or a political settlement leads to a recentralization of state functions in Sanaa.** Patronage networks are expanded to include (fully or partially) former rivals. The oil sector expands. Particular attention is paid to increasing rents in the form of increased oil exports and restored LNG exports. The new elites seek to sanction positively or negatively private sector agents, depending on affiliation networks and interests, leading to a selection of the wartime oligarchy. Aid and grand flows increase, particularly if the new authorities build trust and constructive relationships with regional and international donors.

**In this and other scenarios, the sustainability—or not—of the Houthi institutional setting in the North of the country will be one of the crucial factors that determines the institutional shape of the future Yemen.** Whether the ultimate situation involves all the 21 governorates as constituent units of the future Yemen, or a portion of these, either de jure or de facto, rests on several factors, but in large measure by the nature and sustainability of

current Houthi dominance.<sup>208</sup> Given the extent the political, military and institutional fragmentation, however, it is possible that one or more local actors resist or actively rejects a central state's authority, leading to political turmoil or outright conflict.

#### Macroeconomic – Limited Recovery

**The macroeconomic Limited Recovery and Limited Recovery Plus scenarios project strong GDP and investment growth increases compared to the Base scenario. GDP grows by 2 percentage points more than in the base scenario (doubling to 4 percent), and fixed investment grows by 6.5 percentage points, with particularly strong growth in public investment.** Headcount poverty experiences a marginal decrease compared to the Base scenario under Limited Recovery scenario and by slightly more in the Limited Recovery Plus scenario, with increased aid flows accounting for the gap. Under both scenarios, Yemen closes half of the gap between its current government performance and that of the 90th percentile of Low Income Countries (LICs).

#### Comparative Contexts – Abu Dhabi, Rwanda, Somaliland

**A unified state may be possible if it integrates local and customary institutions rather than attempting to assert its authority from the get-go.** The high strength and legitimacy of tribal institutions is often associated with the process of disarmament

<sup>208</sup> Among the most common interpretations of the Houthi regime, is that it represents an attempt to build a theocratic state in north of Yemen, potentially a hybrid of the current Republican system and the religious and class structure of the Imamate with overtones of other politico-religious institutions like those found in Iran. *Truce Test: The Houthis and Yemen's War of Narratives*, International Crisis Group, 29 April 2022. Most available literature concludes that the Houthis have an ideological project which they intend to institutionalize through a state in the areas that they currently control—and through future territorial expansion both within Yemen—and, potentially, into neighboring states. If this is the case, it is likely to have significant consequences for international aid and development support for Yemen in future.

and re-integration. There is strong evidence that tribal structures are still very important in solving routine problems at various degrees across regions.

**How Yemen's tribal structures can over time be institutionalized within the state is a critical question. A comparative look can help learn from other contexts.** There are interesting lessons to be learned from Somaliland, for example. **There, the government slowly but systematically consolidated its position until it had reached an equilibrium with clan leaders and other subnational power centers.**

**Examples of state construction in Abu Dhabi and also Rwanda suggest that it is possible to build a segmentary state on the basis of legitimate traditional institutions that can be highly developmental.** While the complexity of doing this in Yemen should not be underplayed, there is no reason to believe it would not be possible to build the type of highly effective states seen in the UAE, in the sociological context of Yemen. The devil is in the details of how the tribes are to be integrated into the state and how tasks and resources are to be divided.

**While Yemen's tribal structures can be institutionalized within the state, the credibility of the process will be pivotal.** The experiences with state-building in the UAE, Sierra Leone, and Somaliland show that it is possible to build a modern government that incorporates tribal allegiances and traditional institutions.

**The complexity of such a process in Yemen should not be underestimated.** But the country could eventually build a highly effective state with embedded tribal elements along the lines of the UAE. However, the specific conditions under which the tribes are to be integrated into the state and the division of power and resources among them will be enormously consequential, as will the participants' ability to establish mutual trust. As the issue of credibility will remain at the core of any future constitutional process, leveraging traditional institutions designed to foster trust could increase the likelihood of a successful outcome.

## Scenario 4

### *Political Economy – An Imperfect Peace*

**In the political economy Imperfect Peace scenario, a political settlement is agreed that either enshrines or de facto recognizes current levels of decentralization, affording considerable powers to governorates and/or local authorities.** This in effect cements the status of the rival parties on the ground and leads to a new round of coalition-building among former rivals as each group seeks to outbalance key rivals via cooperation with former enemies. Resource sharing likely becomes an increasingly contentious issue, potentially leading to fresh rounds of violence. Oil exports increase.

**The shadow of autonomy and secession hangs over this scenario, which is again broken into two sub-cases.** In the first sub-scenario, either decentralization happens because local powers force it into de facto existence despite efforts to reform a central state in Sanaa; and/or one or more parties attempts to gain independence leading to a standoff over aid and development assistance to one or more areas of Yemen. In the second, some form of federated or decentralized state is formed as part of an internationally sanctioned political process and all regions of the country remain within the new state structure, leading to higher aid and grant inflows.

### *Macroeconomic – “Enhanced Recovery”*

**In the two sub-cases for the macroeconomic Enhanced Recovery scenarios, growth is higher than in any other context, rising to 6 per cent on average between 2022 and 2030.** This scenario also sees the greatest increase in investment (government and private sector fixed investment rises to 30.9 per cent and 13.6 per cent respectively under both sub-scenarios) and productivity (3 per cent under both scenarios) and fall in the headcount poverty rate. The differentiating factor between

“Enhanced Recovery” and “Enhanced Recovery Plus” scenarios is the lever of international aid and grants to Yemen (which as is argued elsewhere is likely to be contingent on the nature and durability of a political settlement). In the Enhanced Recovery Plus scenario, Yemen realizes improvements that bring the country up to outcomes typical of the 90th percentile among LICs.

### *Comparative Lessons – Colombia, Sierra Leone*

**Evidence gathered through interviews and a review of the international literature yields reasons to be optimistic about the possibility of establishing a decentralized state that integrates tribal allegiances and traditional institutions.**

The international experience shows that strong and legitimate traditional institutions can support a post-conflict process of disarmament and re-integration, and power-sharing agreements between different tribal polities have proven effective in certain cases. However, any post-war political and economic order will reallocate power and resources based on the governance capacity, strategic positioning, and military capabilities of local authorities.

**Even if a stable equilibrium is reached, some parts of the country will inevitably fare better than others.** Some local interests might be better served under an alternative scenario—such as the “restored state”—even if it is suboptimal for the country as a whole. Other factors, such as the continued bifurcation of monetary policy, could widen regional disparities and complicate the peace.

**Colombia demonstrates that weak central rule and waves of conflict are not necessarily**

**inimical to economic growth.** Despite repeated waves of conflict, growth in Colombia has been steady and positive. But it has not been equally distributed. One of the paradoxes of Colombia is how a country can have such economic sophistication and entrepreneurship in parallel with horrific violence. The answer is that these things have adjusted to each other over the past 70 years. Sophisticated economic elites are able to exploit the weakness of the state in the periphery by illegally accumulating land and assets (Acemoglu and Robinson, 2019; Oxfam, 2013). They are also able to use it to establish monopolies. This has meant that most of the direct benefits of growth have passed on to a relatively small elite. Colombia is one of the most unequal countries in the world, by most conventional measures, second only to Honduras in Latin America. This may be the path that Yemen follows in the event of a political settlement, with its private sector and post-conflict elites reaping the benefits of peace while ordinary Yemenis remain stubbornly stuck in poverty.

**Despite a history of violent conflict, meanwhile, Sierra Leone has remained at peace for over two decades.** Local political legitimacy and the integration of local customary and formal authorities into the country’s system of governance has allowed a gradual reconstitution of the society. The international community has also played an important role, and the World Bank-sponsored post-civil war decentralization plan contributed to enable power-sharing between the major political parties. However, the strength of traditional institutions at the local level has likely been the decisive factor in preventing a renewed conflict.

## Conclusions

**The comparative and scenario analysis above indicates that Yemen's diffuse traditional institutions could be leveraged for stability, and that a resolution to the conflict based on the decentralization of political power could create the conditions for a robust post-conflict recovery.** A highly centralized state would be acutely vulnerable to the historical challenges of elite rent-seeking and patronage, which would weigh on growth while undermining macroeconomic stability and national cohesion.

**In any scenario, rebuilding Yemen's physical and institutional infrastructure will require extensive efforts by the authorities and the international community to address financial needs, capacity gaps, macroeconomic imbalances, and the erosion of human capital.**

Unanticipated shocks could complicate policy formulation and execution. Any additional challenges will make it harder to reconcile growth policies with social protection in a context of limited fiscal space. In the short-to-medium term, the authorities should focus on four priority high-level directions: (i) restoring macroeconomic stability, and establishing stable monetary-exchange regime and financial sector; (ii) enabling private-sector-led growth and productivity gains; (iii) building capacity at the subnational

level; and (iv) fostering greater transparency and data availability.

### A. Restoring Macroeconomic Stability

**Reestablishing a credible macroeconomic framework will help guide the transition away from the wartime economy.** While returning Yemen to a stable growth path will require an end to the war followed by a comprehensive reform effort, the authorities can take immediate action to improve the macroeconomic environment. Key measures include strengthening fiscal and monetary policy to achieve price stability; bolstering hard-currency inflows by increasing oil and even gas exports; and reunifying state institutions so that monetary policy and financial regulation are the purview of a single institution rather than two or more competing institutions.

#### *Price Stabilization*

**As noted in Chapters 2 and 3, one of the key drivers of Yemen's cost-of-living crisis has been the depreciation of the Yemeni rial and the resulting high rates of inflation.** The rial's depreciation, particularly in IRG areas, has been caused

by multiple factors, including the general effects of the war, the loss of hard-currency inflows from oil exports, the central bank split in 2016, the monetization of IRG fiscal deficits, and the worsening regulatory and security environment. Economic competition between the IRG and the Houthis has also had a deleterious effect on the country's fiscal and monetary stability.

**In 2022, high international oil prices boosted revenue and forex accumulation, but one-off wind-falls are not a substitute for structural reforms.**

Dysfunctional macroeconomic policy inaction remains one of the most significant risks to Yemen's outlook (see page 22–23). Recent reforms have strengthened the IRG's credibility and effectiveness in addressing macro-fiscal vulnerabilities. Since November 2021, IRG-overseen hard-currency auctions have helped stabilize the exchange rate, with weekly sales increasing from US\$20 million to US\$30 million. The authorities have also begun using the market exchange rate for oil revenues, which immediately increased government revenues. Historically high international oil prices have also contributed to fiscal sustainability and helped avert further monetary financing of the fiscal deficit. While favorable oil prices and the prudence of the CBY-Aden have established a basis for qualified economic optimism, structural reforms remain a precondition for sustainable growth.

**Refraining from monetary financing of the fiscal deficit (see page 34–35) and continuing to enhance the transparency and independence of the central bank would help restore monetary stability.** Monetary conditions have tightened during 2022, as the CBY-Aden drastically reduced fiscal-deficit monetization to levels consistent with its stated money-supply growth targets. The CBY-Aden's policy shifts effectively bolstered exchange-rate stability, and inflation fell to single digits in 2022, even as prices for food and other commodities increased by up to 30 percent.

**Energy subsidies are an expensive and ineffective policy.** The conflict has effectively ended all subsidies except for indirect electricity subsidies

in IRG areas (page 81). These subsidies continue to represent the largest burden on the state budget, and the political cost of lifting them may be too high for the IRG to contemplate in the coming months. If ending the policy is not feasible, strengthening collection efficiency in the electricity sector could at least somewhat alleviate the burden on the public finances.

**Reunifying monetary policy across IRG and Houthi areas, along with hard-currency management and financial regulation, could further shore up price stability.**

The bifurcation of monetary policy has intensified price differentials and economic divergence between IRG- and Houthi-controlled areas (page 37). While the UN envoy's office has mooted negotiations on economic policy reintegration, the World Bank and IMF could play an important role in fostering coordination and encouraging the uptake of best practices by the two central banks. Yemen's development partners should continue to offer support while remaining mindful of the risks of entrenching the fragmentation of public institutions.

### *Hydrocarbon Production and Exports*

**Price stability will also require predictable and sustainable hard-currency inflows.** Yemen's current-account deficit has been widening and is expected to double as a share of GDP and triple in nominal US dollar terms by the end of 2022. Declining official development assistance and remittance receipts, as neighboring countries apply more protectionist labor policies, have offset the predicted increase in oil exports. Yemen's difficulties in financing its external deficit remain significant, and while the country has thus far relied on successfully liquidating previously frozen foreign-currency deposits, the delivery of promised external financial assistance will be crucial to sustain foreign-currency reserves.

**Boosting hydrocarbon production and export could greatly improve Yemen's access to hard currency in the near term.** There are three options to increase income from the hydrocarbons

sector (pages 67–68). The first is to ensure that all the oil and gas produced in the country is sold on domestic and international markets via formal channels. The second is to bring shuttered production capacity online, which could increase output by over 30 percent. The third is to restore LNG production and exports by resuming work on the Yemen LNG project. Utilizing flared gas to generate electricity could generate significant fiscal savings by supplanting fuel-oil imports, but attracting investment in fixed infrastructure will require greater security.

**Increasing hydrocarbon revenue through any of these three strategies could prove politically challenging and would entail significant risks.** Increasing oil production may require capital expenditure that the private and state sectors are unwilling to provide absent stringent guarantees. The Yemen LNG project is exposed to security threats from numerous armed actors, while a corrupt institutional environment poses serious reputational risks. Indeed, the re-emergence of rent-seeking and patronage is a central risk associated with increasing hydrocarbon production and export. The authorities should strive to ensure that the extractive industries benefit the whole economy by de-risking the sector, increasing transparency, and creating an enabling environment for FDI. A comprehensive effort to secure transparency and accountability over all sectoral revenue would be an important first step.

**In parallel, Yemen's recent gains in renewable energy should be accelerated.** Building on existing studies of Yemen's renewables potential (page 69), significant investment should be made into promoting inexpensive, equitably distributed energy. Solar energy should be prioritized given the relative maturity of the solar electricity sector in Yemen, local familiarity with solar, and well-established retail supply chains.

## B. Boosting Productivity Growth

**Improving growth and productivity will require facilitating private investment, rebuilding**

**infrastructure and human capital, and enhancing subnational governance capacity.** As budget constraints limit the scope for expansionary fiscal policy, the authorities should invest in productivity-enhancing technologies while strengthening financial access for small and microenterprises. A formalization program for small firms could also improve tax collection while fostering a more competitive business environment.

**Rebuilding human capital will enable renewed productivity growth.** The deterioration of the education system due to the destruction of schools, the lack of funding for teachers' salaries, and the physical danger of the conflict has eroded the productive capacity of Yemen's future workforce (page 30). To address these losses, the authorities should focus on enhancing instructional quality, lowering drop-out rates, and expanding access to early childhood development services.

**Special attention should be paid to creating opportunities for young workers, who may otherwise join armed groups as a matter of economic necessity.** These efforts should include job training and internship programs. Tighter connections between employers and the school system can help ensure that relevant skills are included in the curriculum and students have access to information about labor demand. Training in business skills and micro-grant programs could help foster entrepreneurship.

**Institutional quality is fundamental to growth and productivity, especially at the subnational level.** Since the start of the war, governorate and district-level institutions have played a crucial role in maintaining a minimal level of public administration and service delivery. The donor community can do more to support subnational institutions and allow them to assume greater responsibility for rebuilding infrastructure and restoring the supply of public goods. The quality of subnational institutions may ultimately determine whether post-conflict reconstruction and state reintegration efforts are successful, and significant resources should be devoted to strengthening them.

**Capacity-building and localization within subnational institutions could help alleviate Yemen's deep and persistent regional disparities.**

Building the capacity of local authorities to implement development programs, provide services, and design investment plans that reflect local needs and participatory processes could improve household welfare both during and after the conflict. Customary law and non-state local leaders can help improve security, resolve conflicts, and normalize economic activity. Over time, these customary practices and traditional institutions can be integrated into the formal public sector.

### Transportation

**Reopening roads would significantly reduce freight costs, enhancing the competitiveness of local businesses.** Longer and more complex road routes have changed the economics of overland freight (page 46). Restoring Yemen's road transport network and ending the closure of major highway corridors will be crucial to support the economic recovery, reverse cumulative losses incurred during the war, and boost domestic production, trade, private consumption, and investment. Ending road closures would also restore severed value chains and increase economic activity along large sections of closed roads, where isolation has led to a massive loss of income-generating opportunities. Greater connectivity will offer trade-driven growth opportunities to entrepreneurs and existing businesses alike.

**Improved connectivity would have especially positive implications for agriculture and food security.** Delays due to road closures are among the main reasons behind the massive drop in production, sales, and exports of perishable foods and other agricultural goods. Before the war, agricultural and fishery products contributed more than 20 percent of GDP and were Yemen's second largest export. The decline in agricultural production is also a major cause of food insecurity, as the disruption of transportation networks raised agricultural input

costs while lowering farm-gate prices, devastating rural livelihoods. Delays and detours also waste hundreds of millions of hours, and restoring road connectivity would greatly reduce travel times.

### Social Protection and Household Welfare

**Affordability is fundamental to food security, especially in the near term.** The authorities should shift focus from wheat-centric food security to holistic nutrition security. Diversifying food imports, both in terms of goods and source countries, and diversifying domestic agricultural and livestock production could strengthen resilience to shocks. Trade-finance options, such as establishing dollar-denominated supply arrangements with importers or offering partial guarantees in cooperation with external partners, could help boost the import supply.

**Increasing domestic production is a long-term goal that will require raising agricultural productivity and moving away from input-intensive to knowledge-intensive production practices,** including the use of improved seeds and agricultural technologies. More data on the spread of qat plantations and their effects on food production would help inform agricultural policy, while additional information on domestic qat usage could underpin a strategy to counter its adverse health effects. These goals will be difficult to achieve during wartime.

**Facilitating and formalizing remittance flows would also contribute to economic security.** High levels of informality and weak regulatory oversight of the financial sector have allowed remittance networks and local authorities to charge exorbitant fees. Improving the regulatory framework, strengthening market infrastructure, and embracing innovative technologies could increase the share of remittances that accrues to Yemeni households.

**Restoring the provision of basic services, especially for the poorest households, will require sustained improvements in local governance capacity.** The lack of essential services

is taking an immense human toll and may cause long-term economic scarring. The near-total lack of medical facilities and services, combined with limited access to clean water and sanitation, have led to a sharp increase in morbidity and mortality. According to the UN, every 10 minutes one Yemeni child dies from preventable diseases.<sup>209</sup>

**An inclusive dialogue will be vital to forge a new social contract based on equal citizenship rights, civic trust, and public accountability.**

Ensuring the participation of women and vulnerable groups will be a key challenge, but building a national vision that acknowledges and accommodates a diverse range of identities is crucial to foster social cohesion. In Houthi areas, formal policies and informal norms have reduced women's participation in the labor market and restricted their movement without guardians.<sup>210</sup> Empowering women to fully participate in all aspects of social and economic life will help maximize the value of the country's limited human capital.

### **C. Improving Transparency, as Well as Data Quality and Availability**

**Transparency is crucial to preventing the reconstitution of the patronage networks that thwarted reform efforts, slowed productivity gains, and hindered inclusive growth in pre-conflict Yemen.** Corruption still appears to be pervasive, and each faction distributes rents to important clients. A lack of transparency by both the

Houthi and IRG authorities has led to mistrust of their governance practices and contributed to the widespread perception of elites as rapacious, self-serving, and unconcerned with the public interest.

**Sound public policy requires reliable and comprehensive data.** A lack of trustworthy data obscures priorities and complicates development planning. Data constraints are pervasive in Yemen, and reconciling numerous, often inconsistent, data sets could be a starting point to improve data quality. The international community can offer greater support in this area.

**Improved coordination around data collection across agencies could reduce duplication and free up resources to collect data on underexplored issues.** While this CEM demonstrates that it is possible to conduct thorough and rigorous analysis by using innovative and non-traditional approaches, the intrinsic value of strengthening the production and availability of traditional data cannot be overstated. Yemen is in a unique situation, as every data source is likely flawed and multiple shocks are occurring simultaneously. As the country emerges from conflict, establishing a new baseline will require extensive efforts to expand and enhance data collection, as sound analytical underpinnings will be vital to effective policymaking in a new era of peace and recovery.

<sup>209</sup> <https://www.unocha.org/fr/story/yemen-what-people-need-most>.

<sup>210</sup> Key informant interviews by World Bank staff, February-September 2022.







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